IN THE SUPERIOR COURT OF FULTON COUNTY
STATE OF GEORGIA

DONNA CURLING, et al.,	*	
PLAINTIFFS,	*	
	*	**CASE NO:**
v.	*	**2017CV290630**
	*	
BRIAN P. KEMP, et al.,	*	
DEFENDANTS.	*	

RESPONSE TO SUBPOENAS FOR PRODUCTION OF EVIDENCE SERVED UPON MERLE S. KING

COMES NOW Merle S. King, and, after being duly sworn by the undersigned officer duly authorized to administer oaths, states under oath as follows:

1.

My name is Merle S. King, I am over eighteen years of age and am competent under Georgia law to make the following representations under oath.

2.

I hold the position of Executive Director of the Center for Election Systems and Associate Professor Emeritus at Kennesaw State University. At Kennesaw State, I have held the positions of Graduate Program Director for the graduate Computer Science and Information Systems programs and was Department Chair of the Computer Science and Information Systems department (1999-2006). I

#2.6 #2.14

Certification Test of the

Premier Election Solutions, Inc. TS Voting System

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia, 30144

Revised
April 11, 2008

Contents

1. Introduction

Certification Tests of the Georgia Voting System were conducted at Kennesaw State University during the month of April 2008. The purpose of these tests was to verify that the ExpressPoll 5000 will function seamlessly in the Georgia voting system. This component passed these tests. A recommendation was sent to the Secretary of State that this component be certified for use in Georgia voting system. The Test Plans for these tests are contained in Appendix E.

Certification Chronology

Certification tests of the Georgia Voting System including security upgrades were conducted in December 2004. (See Appendix A)

Certification tests to include the ExpressPoll 4000 in this system were conducted in August and September, 2005 .

Certification tests to include the AccuVote TSX – Model C Voting Station in this system were conducted in March 2006. (See Appendix B)

Certification tests to include the AccuVote TSX – Model D Voting Station in this system were conducted in July 2006. (See Appendix C)

Tests to validate that the Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 will function correctly in this system were conducted in March 2008. (See Appendix D)

Certification tests to include the ExpressPoll 5000 in this system were conducted in March 2008. (See Appendix E)

These tests were conducted by the staff of the Kennesaw State University Center for Election Systems under the direction of Dr. Brit Williams.

2. Summary of Findings

The Premier Election System TS Voting System as tested in 2004 was found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State. This system consists of the following components:

Dell Power Edge with GEMS	1.18.22G
AccuVote R6 voting station with	AVTS 4.5.2
AccuVote OS ballot scanner with	AVOS 1.94w
Voter Card Encoder with	Firmware 1.32
Key Card Tool with	Firmware 1.01

The following features are enhancements that were tested in December 2004 for inclusion in the Georgia voting system.

Encryption of the data files transmitted via modem: When the polls close on election night the poll manager has the ability to transmit unofficial results to the county elections office. The previous version of the voting system did not encrypt this file prior to transmission. The tested version of the voting system encrypts this file prior to transmission.

Randomization of all internal ballot image files: The previous version of the voting system contained one ballot image file that was not randomized. The tested version of the voting system randomizes all internal ballot image files.

Dynamic password on Poll Manager Card: In previous version of the voting system the password on the Poll Manager Card was a static four digit number. The tested version of the system has a six digit password and allows this password to be changed as often as desired.

Dynamic password on Voter Cards: In the previous version of the voting system the password contained in the hand-shaking routine between the voter card and the voting station was static. The tested version of the system allows this password to be changed as often as desired.

The ExpressPoll 4000 with firmware 2.1.2 with card writer 1.1.4.0 was tested in September 2005 for inclusion in the Georgia voting system.

ExpressPoll 4000: ExpressPolls function as an encoder that is connected to the precinct's electors list. By reading and displaying the precinct's electors list, The ExpressPoll creates a voter access card which will access the voter's assigned ballot style by associating the voter's ballot combination, as outlined in the voter registration record, with the ballot styles maintained on the voting units within the precinct.

The AccuVote TSX, Models C and D with firmware 4.5.2 were tested in July 2006 for inclusion in the Georgia voting system.

AccuVote TSX – Model C Voting Station: The TSX – Model C is a revised version of the AccuVote TS R6 voting station. The TSX is functionally identical to the TS R6. Enhancements include an integrated carrying/storage case, lighter weight, and a light-weight, battery powered voting tablet that can be removed from the case and placed in a handicapped voters lap or carried to curb-side. The certification Test Plan for the TSX – Model C is contained in Appendix B.

AccuVote TSX – Model D Voting Station: The TSX – Model D is a slightly modified version of the TSX Model C Voting Station. The Model D is both functionally and electronically identical to the Model C. Thus, the Model D does not require any additional training for election officials or voters who are familiar with the Model C. The Model D was developed in response to the unavailability of some of the components of the Model C. The certification Test Plan for the TSX – Model D is contained in Appendix C.

The Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 was tested in March 2008 for inclusion in the Georgia Voting System.

The original Dell servers used in the Georgia Voting System were acquired in 2002. These servers are nearing the end of their expected life. The Dell Power Edge tested will be used as a replacement for the original Dell computers. The certification test plan for the Dell Power Edge Server is contained in Appendix D.

The ExpressPoll 5000 with firmware 2.1.2 with card writer 1.1.4.0 was tested in April 2008 for inclusion in the Georgia voting system.

The ExpressPoll 5000 is a revised, newer model of the ExpressPoll 4000. Its function is identical to the function of the ExpressPoll 4000. The ExpressPoll 4000 is no longer available. The certification test plan for the ExpressPoll 5000 is contained in Appendix E.

3. System Description

The system tested in December 2004 was the **AccuVote TS Voting System**, presented by Premier Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas, 75069-8250. This system is composed of the **AccuVote TS R6 Voting Station**, the **AccuVote TSX Voting** Station, the **AccuVote OS Ballot Scanner,** the **Voting Card Encoder**, the **Express Poll 4000**, and a commercial computer running the **Global Election Management System (GEMS)**. A complete list of the system tested is contained in Appendix A.

3.1 System Hardware

At the conclusion of tests performed in March 2008, the hardware of the Georgia voting system consists of:

- **Dell Power Edge computers** provided by Premier under the State contract support the election management system (GEMS).

Dell Power Edge Servers with service pack 4 support the election management system.

AccuVote TS R6 Voting Stations provide a voter interface.

AccuVote TSX Models C and D Voting Stations provide a voter interface.

AccuVote OS Ballot Scanners are used to process absentee and provisional/challenged ballots.

Voter Card Encoders are used to program the voter cards.

Smart Cards are used for voter cards and supervisor cards.

ExpressPoll 4000s and ExpressPoll 5000s are used to read voter's records from the precinct voter registration database and create the corresponding voter card.

3.2 System Software/Firmware

At the conclusion of tests performed in March 2008, the software/firmware of the Georgia voting system consists of:

The operating system used by the personal computers that support the Global Election Management System and the Poll Book systems is **Windows CE with power pack 4.** Windows CE is also the operating system that controls the functions of the Voting Stations.

The **Global Election Management System (GEMS), Version 1.18.22G,** is a Premier proprietary system which runs on a the Dell servers and performs the following pre-election functions: setup the election data base, create a new election, enter contests and issues, define ballot styles, and produce the PCMCIA cards that are used to program the voting stations in the precincts and the absentee ballot scanners. After the polls close, this system reads the PCMCIA cards from the precincts, tallies the votes, and prints the various reports and audit data.

BS, Version 4.5.2 is a Premier proprietary system that controls the TS-R6 and TSX voting stations.

OS, Version 194w is a Premier proprietary system that controls the OS Ballot Scanner.

Encoder Firmware 1.32 is a Premier proprietary system that controls the voter card encoder.

Key Card Tool 1.01 is a Premier Proprietary system that enables the election official to change the passwords on the Voter Cards and the Poll Manager's Card.

ExpressPoll Firmware 1.2.0 with card writer 1.1.4.0 is a Premier Proprietary system that enables an election official to read a voter record from the voter registration database and create a Voter Card for the ballot style that corresponds to the voter's registration information.

3.3 System and Test Documentation

AccuVote-TS R6 System Hardware Specification, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

AccuVote-TS Hardware Guide, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

GEMS 1.18 User Guide, GEMS, Revision 4.0, Premier Election Solutions, Inc., November 1, 2002

AccuVote OS AccuFeed User's Guide, Revision 1.0, Premier Election Solutions, Inc., July 18, 2002

VCProgrammer 4.1 User's Guide, Revision 2.0, Premier Election Solutions, Inc., September 24, 2002

AccuVote OS Precinct Count 1.96 User's Guide, Revision 1.0, Premier Election Solutions, Inc., August 27, 2002

AccuVote-TS Ballot Station 4.5 User's Guide, Revision 2.0, Premier Election Solutions, Inc., June 17, 2004

GEMS 1.18 Product Overview Guide, Revision 2.0, Premier Election Solutions, Inc., February 13, 2004

GEMS 1.18 Reference Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

GEMS 1.18 Election Administrator's Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

Voter Card Encoder 1.3 User's Guide, Revision 1.0, Premier Election Solutions, Inc., February 10, 2004

Key Card Tool 1.0 User's Guide, Revision 2.0, Premier Election Solutions, Inc., April 20, 2004

Source Code, GEMS Version 1-18-22G, Premier Election Solutions, Inc., July 2004

Premier Election Solutions, Inc., Inc. Software Functional Test Report GEMS 1-18-22, Ciber Independent Test Authority, September 29, 2004

Change Release Report of the AccuVote TS R6 DRE Voting Machine, Wyle Laboratories, August 3, 2004

AccuVote TSX Hardware Guide, Premier Election Solutions, Inc., Revision 8.0, February 2004

AccuVote TSX Pollworker's Guide, Premier Election Solutions, Inc., Revision 5.0, March 2005

GEMS 1-18 Election Administrator's Guide, Premier Election Solutions, Inc., Revision 10.0, May 2005

GEMS 1.18 Product Overview Guide, Revision 3.0, Premier Election Solutions, Inc., December 2005

GEMS 1.18 Reference Guide, Revision 8.0, Premier Election Solutions, Inc., April 2005

GEMS 1.18 User Guide, GEMS, Revision 12.0, Premier Election Solutions, Inc., April 2005

ExpressPoll Administrator's Guide for Version 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll Emjulator and Resource Guide for Versions 1.2 and 2.1, Revision 3.0, Premiere Election Solutions, 2005

ExpressPoll User's Guide for Versions 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix A: Software Specification, Premier Election Solutions, Inc., 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix B: Program Data Structure and Flow, Premier Election Solutions, Inc., 2005

Software Functional Test Report Premier Election Solutions, Inc. GEMS 1-18, Addendum 12 for GEMS 1-18-22G, Ciber Independent Test Authority, June 2006

Hardware Qualification Testing of the Premier Election Solutions, Inc. AccuVote TSX Model D DRE Voting Machine, Wyle Report 52501-07 on the AccuVote TSX Model D Tablet, Wyle Laboratories, Inc., April 2006

GEMS 1.18 System Administrator's Guide, Revision 7.0, Premier Election Solutions, Inc., January 2006

Georgia Election Code, Annotated, 2007 Edition

3.4 Overview of System Operation

Election Definition: The following functions are performed by the Global Election Management System (GEMS).

Create the election database.

Enter races and candidates, issues and options that are to appear in the election

Select the races and issues that are to appear on each ballot style.

Enter headings and instructions as they are to appear on the ballots.

Format the ballots.

Establish passwords for the voter cards and poll manager's cards.

Hardware Programming: Once the election definition is complete, the PCMCIA cards can be prepared to control the AccuVote TS voting stations and the AccuVote OS optical scan ballot scanners. A PCMCIA card must be prepared for each voting station and each ballot scanner.

Precinct Setup: The voting stations and ballot scanners are prepared for the election by inserting the PCMCIA cards and powering up the device. The device performs a self test and is then ready for pre-election testing.

Election Day (Precinct) Activities: As the polls are opened and each device is powered up, the device performs a self test and presents a menu with the various options allowed at the polling place. If the 'open polls' option is selected, the registers are set to zero and a 'zero totals' tape is printed.

The ExpressPoll is used by a poll worker to isolate a voter's name on an electronically displayed elector's list within the precinct and then create a voter access card while at the same time marking the precinct's electors list. The combined operation is designed to provide an accurate listing of voter participation at the precinct while ensuring that each participating elector receives the proper ballot style which is based on the voter's ballot combination outlined in the state's voter registration system.

When the polls are closed, the vote totals from each device are recorded to the PCMCIA cards. These cards are then transported to a central counting location for entry into the GEMS system for tallying and reporting. If desired, unofficial results from the precincts can be transmitted to the central location via modem.

Vote Tallying/Report Printing: The PCMCIA cards from each precinct are returned to the central facility where they are loaded into the GEMS. During this step, any known errors can be manually corrected and absentee votes can be entered.

At any time during the tally of the votes or at the completion of vote tallying, election result can be printed by precinct or overall. These reports can also be exported to other systems or posted on the Internet.

The system administrator can use the GEMS to print the various audit logs.

4. Compliance With Applicable Statues and Standards

4.1 Election Assistance Commission Voting System Standards

Hardware/Firmware: The Premier Election Solutions, Inc. TS Voting System hardware and firmware was examined by Wyle Laboratories, Huntsville, Alabama and found to be in compliance with the hardware specifications contained in the EAC Voting System Standards. Wyle is an Independent Test Agency approved by the National Association of State Election Directors (NASED).

Software: The GEMS election management software was examined by Ciber, Inc., Huntsville, Alabama and found to be in compliance with the software specifications contained in the EAC Voting System Standards. Ciber, Inc. is an Independent Test Agency approved by the National Association of State Election Directors.

NASED Qualification: The components that comprise the Georgia voting system are qualified under NASED voting system Qualification Numbers N-1-06-12-12-003 through N-1-06-12-12-010.

4.2 Help America Vote Act of 2002

The Premier Election Solutions, Inc. TS Voting System is classified as an electronic voting system and, as such, falls under the following Sections of the **Help America Vote Act of 2002**

TITLE III--UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS; SEC. 302. PROVISIONAL VOTING AND VOTING INFORMATION REQUIREMENTS.

(a) Provisional Voting Requirements.--If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot ...

The Premier Election Solutions, Inc. TS Voting System has the facility to allow a voter to vote a provisional ballot. This ballot is stored in a separate location and is not included in the tally until the voter's credentials have been established by the county registrar.

The paper ballot used for absentee voting can also be used to satisfy this requirement.

(2) Audit capacity (B) Manual audit capacity.—
(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

The Premier Election Solutions, Inc. TS Voting System can satisfy this requirement.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The AccuVote TS R6 and TSX Voting Stations present a summary screen at the end of the ballot that gives the voter the opportunity to change any selection.

(3) Accessibility for individuals with disabilities.—The voting system shall--(A) be accessible for individuals with disabilities, including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

The voter using the AccuVote TS R6 and TSX voting stations can choose to view the ballot in large print or in high contrast or both. In addition, The AccuVote TS R6 and TSX voting stations can be equipped with a keypad and earphones for vision impaired voters.

4.3 Georgia Election Code, Annotated, 2007 Edition

The Premier Election Solutions, Inc. TS Voting System is classified as direct recording electronic voting systems. The Georgia Election Code, Section 21-3-379 regulates systems of this type.

21-2-379.1 Requirements for use of electronic recording voting systems

No direct electronic recording voting system shall be adopted or used unless it shall, at the time, satisfy the following requirements:

(1) *It shall provide facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(2) *It shall permit each elector, in one operation, to vote for all candidates of one party of body for presidential electors;*

The Premier Election System TS Voting System satisfies this requirement.

(3) *Except as provided in paragraph (2) of this Code section for*

presidential electors, it shall permit each elector, at other than primaries, to vote a ticket selected from nominees of any and all parties or bodies, from independent nominations, and from persons not in nomination;

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(4) *It shall permit each elector to vote, at any election, for any person and for any office for whom and for which he or she is lawfully entitled to vote, whether or not the name of such person or persons appears as a candidate for election, to vote for as many persons for an office as he or she is entitled to vote for; and to vote for or against any question upon which he or she is entitled to vote;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests included multiple candidates for a single office and write-in candidates.

(5) *It shall preclude the counting of votes for any candidate or upon any question for whom or upon which an elector is not entitled to vote; shall preclude the counting of votes for more persons for any office than he or she is entitled to vote for; and shall preclude the counting of votes for any candidate for the same office or upon any question more than once;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests indicated that the voter was only able to see and vote on the assigned ballot style. The system does not allow over-votes. Once the allowed number of candidates has been selected, the voter cannot select another candidate without first releasing one of the previously selected candidates. Tests were conducted to ensure that a voter could not write in the same name multiple times in a multi-candidate contest.

(6) *It shall permit voting in absolute secrecy so that no person can see or know for whom any other elector has voted or is voting save an elector whom he or she has assisted or is assisting in voting, as prescribed by law.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(7) *It shall be constructed of material of good quality in a neat and workmanship like manner;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The quality of the materials and workmanship was reviewed by the hardware/firmware ITA, Wyle Laboratories.

(8) *It shall, when properly operated, record correctly and accurately every vote cast;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The hardware ITA, Wyle Laboratories, and the software ITA, Ciber, Inc., extensively tested this requirement. The State certification tests included logic and accuracy tests, but with a smaller number of ballots than the tests conducted by the ITAs.

(9) *It shall be so constructed that an elector may readily learn the method of operating it;*

In order to vote on the AccuVote TS R6 or TSX voting station, the voter must press a pressure sensitive spot containing the name of the candidate. When the spot is pressed, a lighted square containing a large X appears beside the candidate's name. The persons participating in these tests did not have undue difficulty voting on the AccuVote TS R6 and TSX Voting Stations.

(10) *It shall be safely transported.*

The portion of the system that is installed in the precinct, the AccuVote TS R6 and TSX voting stations and the Express Poll 4000, are small and easily transported. See Section 3.2, System Hardware/Firmware.

21-2-379.4 Ballot appearance; write in votes on DRE systems

(a) The ballots for direct recording electronic (DRE) voting systems shall be of such size and arrangement as will suit the construction of the DRE screen and shall be in plain, clear type that is easily readable by persons with normal vision. If the equipment has the capacity for color display, the names of all candidates in a particular race shall be displayed in the same color, font, and size and the political party or body affiliation of candidates may be displayed in a color different from that used to display the names of the candidates, but all political party or body affiliations shall be printed in the same size and font. All ballot questions and constitutional amendments shall be displayed in the same color.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(b) *The arrangement of offices, names of candidates, and questions upon the ballots shall conform as nearly as practicable to this chapter for the arrangement of such offices, names of candidates, and questions on paper ballots.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) *Electors shall be permitted to cast write-in votes on DRE voting systems as provided in Code Section 21-2-133. The design of the ballot shall permit the election superintendent and poll workers when obtaining the vote count from such systems to determine readily whether an elector has cast any write-in vote not authorized by law.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

21-2-379.5 Ballot information

(b) *The ballot for each candidate or group of candidates nominated by a political party or body shall display the name or designation of the political party or body.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) *The incumbency of a candidate seeking election for the public office he or she then holds shall be indicated on the ballot.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

Appendix A

Certification Test Plan
Of the
Georgia DRE Voting System
September 2004

Hardware Definition

GEMS Computer

Voter Card Encoders
- 101532
- 115663
- 119134
- 119136

Voting Stations
- 110002
- 113438
- 114187
- 114995
- 115673
- 116217
- 116372
- 116669
- 119520
- 121216
- 121606
- 123461
- 128124

Key Card Tool
- Dell Notebook Computer

Absentee Ballot Scanner
- 86634

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G

Encoder	1.3.2
Key Card Tool	1.0.1

Phase I: Initial Setup:

1. Install the new system on Center devices and identify the differences between the current and the new system.
2. Identify the portions of the system that will require changes to the current training for election officials and poll workers.
3. Develop the ballot styles that will be used in the following Phases II and III. The ballot style for Phase II should be long enough that the summary page does not show on a single screen.
4. Develop voting scripts and voter instructions for use in Phase II.
5. Identify the devices that will be available for use during Certification Testing and set up the test environment.
6. Schedule a meeting to brief the KSU and SOS staff on the above items. This briefing should contain sufficient detail to enable this staff to make decisions about the implementation of the new system.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each county will have one early-voting terminal and each precinct will have two voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, thirteen AccuVote TS voting stations with firmware version 4.5.2 , two AccuVote OS ballot scanners with firmware version 1.94w, four voter card encoders with firmware version 1.3.2. (Diagram A, below)

Phase III: Stress Testing

1. High volume tests. Conduct tests to determine the ability of the TS units to accommodate a high volume of ballots. The number of ballots cast in this test will exceed the number of ballots that may be cast in an early voting setup.

2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.
3. Voter errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by voters.
4. Acts of Nature/Vandalism. Identify and test the system's ability to recovery from various acts of nature or vandalism.

Phase IV: Security Tests

- Conduct vulnerability assessment of the Premier DRE to determine open ports and known vulnerabilities.
- Perform vulnerability assessment of the standard installation of GEMS Election Management Systems (EMS) to determine open ports and known vulnerabilities.
- Develop implementation recommendations for GEMS EMS, focusing on physical and procedural security.
- Hash and document GEMS standard installation for use in implementation validation and verification.
- Create hashing scripts to validate county implementations of GEMS against certified CES implementation of GEMS software.

Ballot Script
Georgia Certification Test

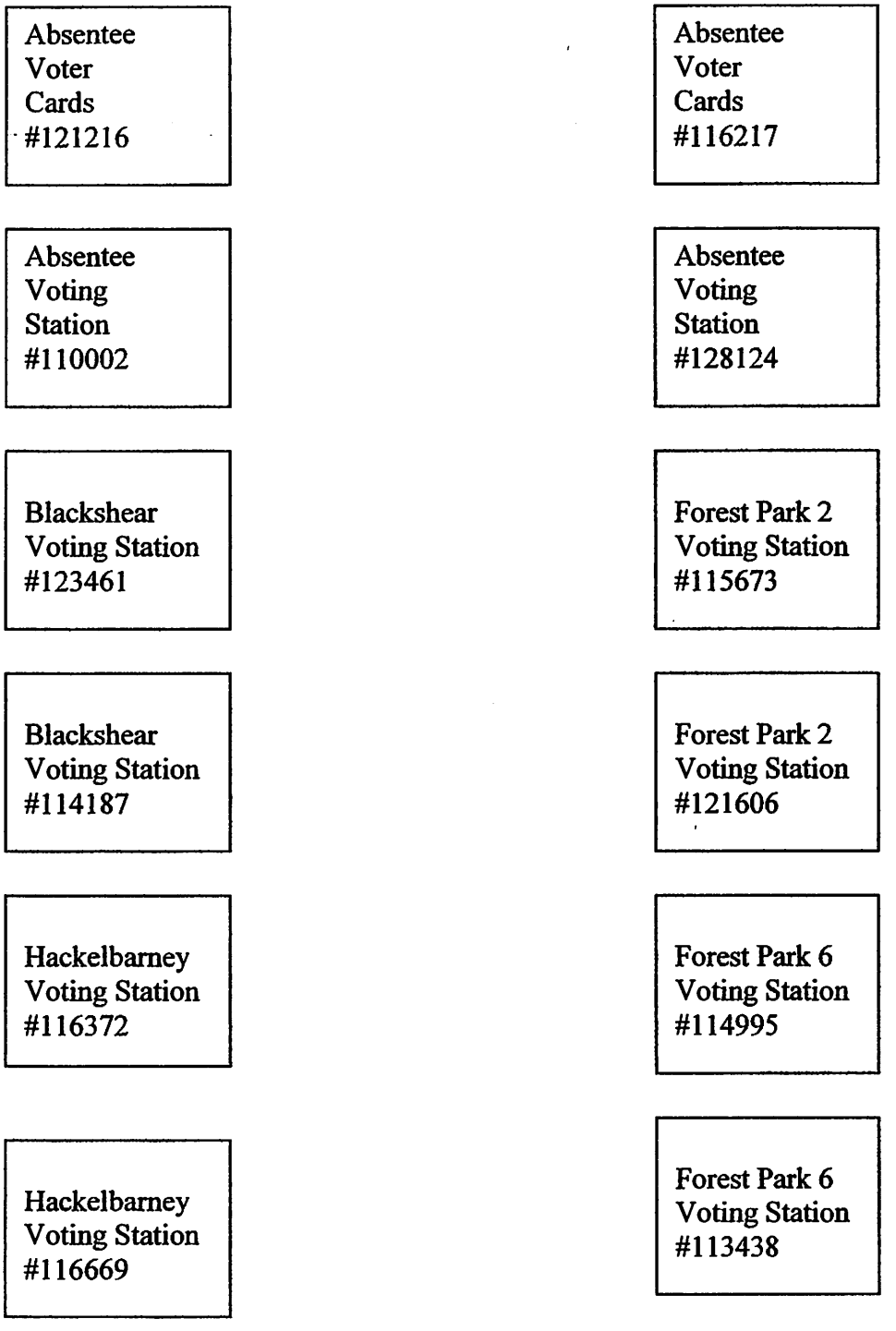
County: Clayton
Precinct/Split: Forest Park 2, Split A
Voting Station: _____
Script: 1

Voter: _____ **Date:** _____

US Senate:	**MAX CLELAND**
Governor:	**ROY E BARNES**
Lt. Governor:	**MARK TAYLOR**
Secretary of State:	**CATHY COX**
Attorney General:	**THURBERT BAKER**
Comm. Of Agriculture:	**TOMMY IRVIN**
Comm. Of Insurance:	**LOIS COHEN**
State School Super:	**BARBARA CHRISTMAS**
Comm. Of Labor	**MICHAEL THURMOND**
Public Service Comm. 1	**EARLEEN W SIZEMORE**
Public Service Comm. 2	**LAUREN MCDONALD, JR**
US Rep 13th District	**DAVID SCOTT**
State Senate 44th District:	**TERRELL A STARR**
State Rep. 50th District:	**GEORGANA SINKFIELD**
County Comm. Dist. 1	**CARL RHODENIZER**
Board of Education:	**ERICA DAVIS or SUE RYAN**

(CONTINUED)

Const. Ammend. 1	**YES**
Const. Ammend. 2	**YES**
Const. Ammend. 3	**YES**
Const. Ammend. 4	**YES**
Const. Ammend. 5	**YES**
Const. Ammend. 6	**YES**
Statewide Ref. A	**YES**
Statewide Ref. B	**YES**
Statewide Ref. C	**YES**
Statewide Ref. D	**YES**
Statewide Ref. E	**YES**



Usability Test Configuration
Diagram A

Appendix B

Certification Test Plan
Of the
AccuVote TSX Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX voting station, firmware version 4.5.2, will operate seamlessly in the Georgia Voting System. The precinct layout for these tests will be the same as the precinct layout presented in Appendix A, above.

Phase I: Interoperability:

The purpose of these tests is to verify that the AccuVote TSX voting station will operate seamlessly in the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX voting stations.
2. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX voting station will upload successfully into GEMS 1.18.22G.
3. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX voting station.
4. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations, AccuVote TSX voting stations, and AccuVote OS optical scan ballot scanners will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All AccuVote TSX voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX voting stations with firmware version 4.5.2 ,

one AccuVote OS ballot scanners with firmware version 1.94w, one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Phase IV: Security Tests

- Conduct vulnerability assessment of the AccuVote TSX voting station to determine open ports and known vulnerabilities.
- Develop recommendations for the storage and handling of TSX voting stations.

Hardware Definition

GEMS Computer

ExpressPoll 4000
5065012A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Voting Stations
204315
208152
223494
258838

Key Card Tool
Dell Notebook Computer

Absentee Ballot Scanner
40805

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix C

Certification Test Plan
Of the
AccuVote TSX Model D Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX, Model D, voting station using firmware version TSX 4.5.2, will operate seamlessly in the Georgia Voting System.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the AccuVote TSX Model D voting station with existing components of the Georgia Voting System.

5. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX Model D voting stations.
6. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX Model D voting station will upload successfully into GEMS 1.18.22G.
7. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX Model D voting station.
8. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations and AccuVote TSX Model D voting stations will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX – Model D voting station. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX Model D voting stations with firmware version TSX 4.5.2, and one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX – Model D voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Hardware Definition

GEMS Computer

ExpressPoll 4000
SOGS009A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Model D Voting Stations
262247
263480
263513
263515
276094
276137

Key Card Tool
Dell Notebook Computer

Software Definition

AVTS-R6	4.5.2
AVTS-TSX	4.5.2
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix D

Validation Test Plan
of the
Dell Power Edge Server
for use in the
Georgia Voting System

March 2008

Overall Objective: The purpose of these tests is to verify that the Dell Power Edge Server with Windows 2000, service pack 4 with all security and time zone updates as of 3/11/2008 will not affect the overall flow of program control or the manner in which ballots are recorded and the votes are processed in the Georgia voting system.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the Dell Power Edge Server with Windows 2000, service pack 4 with existing components of the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into the Accuvote TS-R6, the AccuVote TSX voting stations, and the AccuVote OS ballot scanner.
2. Verify that a mix of memory cards produced by closing the polls on AccuVote OS ballot scanners, AccuVote TS-R6 voting stations, and AccuVote TSX voting stations will upload correctly into GEMS 1.18.22G.
3. Verify modem transmissions between the AccuVote TS-R6, the AccuVote TSX, and the AccuVote OS and GEMS 1.18.22G.
4. Verify that GEMS 1.18.22G prepares all backup materials and all reports correctly using third-party software products.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The GEORGIA CERTIFICATION database will be use as the election setup for this test. This election setup consists of one federal office, two state offices, one county office, and two referendum questions.

The voting system tested will consist of one AccuVote TS – R6 voting station with firmware version 4.5.2, one AccuVote TSX – Model D voting station with firmware version 4.5.2, and one AccuVote OS ballot scanner with firmware 1.94w. ExpressPoll 4000s and ExpressPoll 5000s with firmware version 2.1.2 and card writer firmware version 1.1.4.0. will be used to produce voter cards.

The GEMS server employed will consist of a Dell Power Edge server with Windows 2000, service pack 4 running GEMS 1.18.22G.

Hardware Definition

GEMS Computer (1)
Dell Power Edge server
with Windows 2000, service pack 4
with all security and time zone updates
as of 3/11/2008

ExpressPoll 4000
Express Poll 5000

AccuVote TS-R6 Voting Stations

AccuVote TSX Model D Voting Stations

AccuVote OS ballot scanners

Software Definition

Windows 2000	Service pack 4
AVTS-R6	4.5.2
AVTS-TSX	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
ExpressPoll 4000	2.1.2 with card writer 1.1.4.0
ExpressPoll 5000	2.1.2 with card writer 1.1.4.0

Test Participants – March 26, 2008

Brit Williams	Kennesaw State University
Michael Barnes	Kennesaw State University
Devin Pearson	Kennesaw State University

Appendix E

Certification Test of the ExpressPoll 5000 and Interoperability Test of the ExpressPoll 4000 and ExpressPoll 5000

March 2008

Purpose of Test

The ExpressPoll 4000 has been previously certified for use in the Georgia voting system. The ExpressPoll 5000 is an enhanced version of the ExpressPoll 4000. The purpose of this test is to verify that the ExpressPoll 5000 will function correctly both independently and in combination with the ExpressPoll 4000.

Test Requirements

Database

One Hundred fifty-nine GEMS databases were built using data associated with the February 2008 Presidential Preference Primary. These databases were combined with voter registration data for all registered voters in Georgia as of January 7, 2008. The combined data will be used to power ExpressPolls during testing.

Hardware

ExpressPoll 4000
ExpressPoll 5000
AVTS R – 6 voting station
AVTS TSX voting station
Four-port Hub
Direct Cables
Crossover Cables

Software/Firmware

ExpressPoll 4000	2.1.2 with card writer 1.1.4.0
ExpressPoll 5000	2.1.2 with card writer 1.1.4.0
AVTS R – 6	firmware 4.5.2
AVTS TSX	firmware 4.5.2

Test Configurations

- Two EP 5000 via crossover cable
- One EP 4000 and one EP 5000 via crossover cable
- Two EP 5000 via Hub
- Three EP 5000 via Hub
- Three EP 4000 via Hub
- One EP 4000 and two EP 5000 via Hub
- Two EP 4000 and one EP 5000 via Hub
- Two EP 4000 and three EP 5000 via Hub

Configuration Test Outline

- Prepare the configuration to be tested.
- Load the database into the ExpressPolls
- Select the precinct
- Prepare voter cards
- Verify correctness of voter cards
- Verify ExpressPoll synchronization

Test Participants – March 25, 2008

Brit Williams	Kennesaw State University
Michael Barnes	Kennesaw State University
Mike McCarthy	Secretary of State
Joseph Kirk	Bartow County
Maxine Daniels	DeKalb County
Derrick Gilstrap	Fulton County
Brenda Williams	Fulton County
Janice Williams	Gwinnett County
Claudia Lashen	Gwinnett County
Regina Clark	Gwinnett County

#2.14

Certification Test of the

Diebold Election Systems TS Voting System

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia, 30144

Revised
July 10, 2006

Contents

1. Introduction

Certification Tests of the Diebold Election Systems TS Voting System were conducted at Kennesaw State University during the months of September, November, and December, 2004. The Test Plan that was followed is contained in Appendix A.

Certification tests to include the ExpressPoll 4000 in this system were conducted in August and September, 2005.

Certification tests to include the AccuVote TSX – Model C Voting Station in this system were conducted in March 2006.

Certification tests to include the AccuVote TSX – Model D Voting Station in this system were conducted in July 2006.

These tests were conducted by the staff of the Kennesaw State University Center for Election Systems under the direction of Dr. Brit Williams.

2. Summary of Findings

The Diebold Election System TS Voting System as tested in 2004 was found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State.

The following features are enhancements that were tested for inclusion in the original system.

Encryption of the data files transmitted via modem: When the polls close on election night the poll manager has the ability to transmit unofficial results to the county elections office. The previous version of the voting system did not encrypt this file prior to transmission. The tested version of the voting system encrypts this file prior to transmission.

Randomization of all internal ballot image files: The previous version of the voting system contained one ballot image file that was not randomized. The tested version of the voting system randomizes all internal ballot image files.

Dynamic password on Poll Manager Card: In previous version of the voting system the password on the Poll Manager Card was a static four digit number. The tested version of the system has a six digit password and allows this password to be changed as often as desired.

Dynamic password on Voter Cards: In the previous version of the voting system the password contained in the hand-shaking routine between the voter card

and the voting station was static. The tested version of the system allows this password to be changed as often as desired.

ExpressPoll 4000: ExpressPoll 4000 functions as an encoder that is connected to the precinct's electors list. By reading and displaying the precinct's electors list, ExpressPoll 4000 creates a voter access card which will access the voter's assigned ballot style by associating the voter's ballot combination, as outlined in the voter registration record, with the ballot styles maintained on the voting units within the precinct.

AccuVote TSX – Model C Voting Station: The TSX – Model C is a revised version of the AccuVote TS R6 voting station. The TSX is functionally identical to the TS R6. Enhancements include an integrated carrying/storage case, lighter weight, and a light-weight, battery powered voting tablet that can be removed from the case and placed in a handicapped voters lap or carried to curb-side. The certification Test Plan for the TSX – Model C is contained in Appendix B.

AccuVote TSX – Model D Voting Station: The TSX – Model D is a slightly modified version of the TSX Model C Voting Station. The Model D is both functionally and electronically identical to the Model C. Thus, the Model D does not require any additional training for election officials or voters who are familiar with the Model C. The Model D was developed in response to the unavailability of some of the components of the Model C. The certification Test Plan for the TSX – Model D is contained in Appendix B.

3. System Description

The system tested was the **AccuVote TS Voting System**, presented by Diebold Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas, 75069-8250. This system is composed of the **AccuVote TS R6 Voting Station**, the **AccuVote TSX Voting** Station, the **AccuVote OS Ballot Scanner**, the **Voting Card Encoder**, the **Express Poll 4000**, and a commercial computer running the **Global Election Management System (GEMS)**. A complete list of the system tested is contained in Appendix A.

3.1 System Hardware

The hardware tested consisted of:

- A **"Large County" GEMS computer** provided by Diebold under the State contract.

  Thirteen **AccuVote TS R6 Voting Stations** provided the voter interface.

  Four **Voter Card Encoders** were used to program the voter cards.

One **AccuVote OS Ballot Scanner** was used to process absentee and provisional/challenged ballots.

Smart Cards were used for voter cards and supervisor cards.

Twenty-five **ExpressPoll 4000s** were used to read voter's records from the precinct voter registration database and create the corresponding voter card.

Four **AccuVote TSX Voting Stations** were tested to verify that the voting stations will integrate seamlessly into the existing Georgia voting system.

The specific devices used during the certification tests of the Diebold Election System TS Voting System are listed in Appendix A.

The specific devices used during the certification tests of the AccuVote TSX voting stations are listed in Appendix B.

3.2 System Software/Firmware

The operating system used by the personal computers that support the Global Election Management System and the Poll Book systems is **Windows CE.** Windows CE is also the operating system that controls the functions of the Voting Stations.

The **Global Election Management System (GEMS), Version 1.18.22G,** is a Diebold proprietary system which runs on a standard personal computer and performs the following pre-election functions: setup the election data base, create a new election, enter contests and issues, define ballot styles, and produce the PCMCIA cards that are used to program the voting stations in the precincts and the absentee ballot scanners. After the polls close, this system reads the PCMCIA cards from the precincts, tallies the votes, and prints the various reports and audit data.

BS, Version 4.5.2 is a Diebold proprietary system that controls the TS-R6 and TSX voting stations.

OS, Version 194w is a Diebold proprietary system that controls the OS Ballot Scanner.

Encoder Firmware 1.32 is a Diebold proprietary system that controls the voter card encoder.

Key Card Tool 1.01 is a Diebold Proprietary system that enables the election official to change the passwords on the Voter Cards and the Poll Manager's Card.

ExpressPoll Firmware 1.2.0 is a Diebold Proprietary system that enables an election official to read a voter record from the voter registration database and create a Voter Card for the ballot style that corresponds to the voter's registration information.

3.3 System and Test Documentation

AccuVote-TS R6 System Hardware Specification, Document Revision 1.0, Diebold Election Systems, April 30, 2001

AccuVote-TS Hardware Guide, Document Revision 1.0, Diebold Election Systems, April 30, 2001

AccuVote-TS Ballot Station 4.5 User's Guide, Revision 2.0, Diebold Election Systems, June 17, 2004

GEMS 1.18 Product Overview Guide, Revision 2.0, Diebold Election Systems, February 13, 2004

GEMS 1.18 Reference Guide, Revision 6.0, Diebold Election Systems, June 15, 2004

GEMS 1.18 Election Administrator's Guide, Revision 6.0, Diebold Election Systems, June 15, 2004

GEMS 1.18 User Guide, GEMS, Revision 4.0, Diebold Election Systems, November 1, 2002

Voter Card Encoder 1.3 User's Guide, Revision 1.0, Diebold Election Systems, February 10, 2004

Key Card Tool 1.0 User's Guide, Revision 2.0, Diebold Election Systems, April 20, 2004

AccuVote OS Precinct Count 1.96 User's Guide, Revision 1.0, Diebold Election Systems, August 27, 2002

AccuVote OS AccuFeed User's Guide, Revision 1.0, Diebold Election Systems, July 18, 2002

VCProgrammer 4.1 User's Guide, Revision 2.0, Diebold Election Systems, September 24, 2002

Source Code, GEMS Version 1-18-22G, Diebold Election Systems, July 2004

Diebold Election Systems, Inc. Software Functional Test Report GEMS 1-18-22, Ciber Independent Test Authority, September 29, 2004

Change Release Report of the AccuVote TS R6 DRE Voting Machine, Wyle Laboratories, August 3, 2004

Software Functional Test Report Diebold Election Systems GEMS 1-18, Addendum 12 for GEMS 1-18-22G, Ciber Independent Test Authority, June 2006

Hardware Qualification Testing of the Diebold Election Systems AccuVote TSX Model D DRE Voting Machine, Wyle Report 52501-07 on the AccuVote TSX Model D Tablet, Wyle Laboratories, Inc., April 2006

AccuVote TSX Hardware Guide, Diebold Election Systems, Revision 8.0, February 2004

AccuVote TSX Pollworker's Guide, Diebold Election Systems, Revision 5.0, March 2005

GEMS 1-18 Election Administrator's Guide, Diebold Election Systems, Revision 10.0, May 2005

GEMS 1.18 Product Overview Guide, Revision 3.0, Diebold Election Systems, December 2005

GEMS 1.18 Reference Guide, Revision 8.0, Diebold Election Systems, April 2005

GEMS 1.18 System Administrator's Guide, Revision 7.0, Diebold Election Systems, January 2006

GEMS 1.18 User Guide, GEMS, Revision 12.0, Diebold Election Systems, April 2005

3.4 Overview of System Operation

Election Definition: The following functions are performed by the Global Election Management System (GEMS).

Create the election database.

Enter races and candidates, issues and options that are to appear in the

election

Select the races and issues that are to appear on each ballot style.

Enter headings and instructions as they are to appear on the ballots.

Format the ballots.

Establish passwords for the voter cards and poll manager's cards.

Hardware Programming: Once the election definition is complete, the PCMCIA cards can be prepared to control the AccuVote TS voting stations and the AccuVote OS optical scan ballot scanners. A PCMCIA card must be prepared for each voting station and each ballot scanner.

Precinct Setup: The voting stations and ballot scanners are prepared for the election by inserting the PCMCIA cards and powering up the device. The device performs a self test and is then ready for pre-election testing.

Election Day (Precinct) Activities: As the polls are opened and each device is powered up, the device performs a self test and presents a menu with the various options allowed at the polling place. If the 'open polls' option is selected, the registers are set to zero and a 'zero totals' tape is printed.

The ExpressPoll 4000 is used by a poll worker to isolate a voter's name on an electronically displayed elector's list within the precinct and then create a voter access card while at the same time marking the precinct's electors list. The combined operation is designed to provide an accurate listing of voter participation at the precinct while ensuring that each participating elector receives the proper ballot style which is based on the voter's ballot combination outlined in the state's voter registration system.

When the polls are closed, the vote totals from each device are recorded to the PCMCIA cards. These cards are then transported to a central counting location for entry into the GEMS system for tallying and reporting. If desired, unofficial results from the precincts can be transmitted to the central location via modem.

Vote Tallying/Report Printing: The PCMCIA cards from each precinct are returned to the central facility where they are loaded into the GEMS. During this step, any known errors can be manually corrected and absentee votes can be entered.

At any time during the tally of the votes or at the completion of vote tallying, election result can be printed by precinct or overall. These

reports can also be exported to other systems or posted on the Internet.

The system administrator can use the GEMS to print the various audit logs.

4. Compliance With Applicable Statues and Standards

4.1 Election Assistance Commission Voting System Standards

Hardware/Firmware: The Diebold Election Systems TS Voting System hardware and firmware was examined by Wyle Laboratories, Huntsville, Alabama and found to be in compliance with the hardware specifications contained in the EAC Voting System Standards. Wyle is an Independent Test Agency approved by the National Association of State Election Directors (NASED).

Software: The GEMS election management software was examined by Ciber, Inc., Huntsville, Alabama and found to be in compliance with the software specifications contained in the EAC Voting System Standards. Ciber, Inc. is an Independent Test Agency approved by the National Association of State Election Directors.

NASED Qualification: Based on the reports from the ITAs, NASED assigned the system Qualification Number N-1-06-12-12-003.

4.2 Help America Vote Act of 2002

The Diebold Election Systems TS Voting System is classified as an electronic voting system and, as such, falls under the following Sections of the **Help America Vote Act of 2002**

TITLE III--UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS; SEC. 302. PROVISIONAL VOTING AND VOTING INFORMATION REQUIREMENTS.

(a) Provisional Voting Requirements.--If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot ...

The Diebold Election Systems TS Voting System has the facility to allow a voter to vote a provisional ballot. This ballot is stored in a separate location and is not included in the tally until the voter's credentials have been established by the county registrar.

The paper ballot used for absentee voting can also be used to satisfy this requirement.

(2) Audit capacity (B) Manual audit capacity.—
(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

The Diebold Election Systems TS Voting System can satisfy this requirement.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

The Diebold Election Systems TS Voting System satisfies this requirement. The AccuVote TS R6 and TSX Voting Stations present a summary screen at the end of the ballot that gives the voter the opportunity to change any selection.

(3) Accessibility for individuals with disabilities.—The voting system shall--(A) be accessible for individuals with disabilities, including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

The voter using the AccuVote TS R6 and TSX voting stations can choose to view the ballot in large print or in high contrast or both. In addition, The AccuVote TS R6 and TSX voting stations can be equipped with a telephone keypad and earphones for vision impaired voters.

4.3 Georgia Election Code

The Diebold Election Systems TS Voting System is classified as direct recording electronic voting systems. The Georgia Election Code, Section 21-3-379 regulates systems of this type.

21-2-379.1 Requirements for use of electronic recording voting systems

No direct electronic recording voting system shall be adopted or used unless it shall, at the time, satisfy the following requirements:

(i) It shall provide facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;

The Diebold Election Systems TS Voting System satisfies this requirement.

(ii) It shall permit each elector, in one operation, to vote for all candidates of one party of body for presidential electors;

The Diebold Election System TS Voting System satisfies this requirement.

(1) Except as provided in paragraph (2) of this Code section for presidential electors, it shall permit each elector, at other than primaries, to vote a ticket selected from nominees of any and all parties or bodies, from independent nominations, and from persons not in nomination;

The Diebold Election Systems TS Voting System satisfies this requirement.

(2) It shall permit each elector to vote, at any election, for any person and for any office for whom and for which he or she is lawfully entitled to vote, whether or not the name of such person or persons appears as a candidate for election, to vote for as many persons for an office as he or she is entitled to vote for; and to vote for or against any question upon which he or she is entitled to vote;

The Diebold Election Systems TS Voting System satisfies this requirement. Tests included multiple candidates for a single office and write-in candidates.

(3) It shall preclude the counting of votes for any candidate or upon any question for whom or upon which an elector is not entitled to vote; shall preclude the counting of votes for more persons for any office than he or she is entitled to vote for; and shall preclude the counting of votes for any candidate for the same office or upon any question more than once;

The Diebold Election Systems TS Voting System satisfies this requirement. Tests indicated that the voter was only able to see and vote on the assigned ballot style. The system does not allow over-votes. Once the allowed number of candidates has been

selected, the voter cannot select another candidate without first releasing one of the previously selected candidates. Tests were conducted to ensure that a voter could not write in the same name multiple times in a multi-candidate contest.

(4) *It shall permit voting in absolute secrecy so that no person can see or know for whom any other elector has voted or is voting save an elector whom he or she has assisted or is assisting in voting, as prescribed by law.*

The Diebold Election Systems TS Voting System satisfies this requirement.

(5) *It shall be constructed of material of good quality in a neat and workmanship like manner;*

The Diebold Election Systems TS Voting System satisfies this requirement. The quality of the materials and workmanship was reviewed by the hardware/firmware ITA, Wyle Laboratories.

(6) *It shall, when properly operated, record correctly and accurately every vote cast;*

The Diebold Election Systems TS Voting System satisfies this requirement. The hardware ITA, Wyle Laboratories, and the software ITA, Ciber, Inc., extensively tested this requirement. The State certification tests included logic and accuracy tests, but with a smaller number of ballots than the tests conducted by the ITAs.

(7) *It shall be so constructed that an elector may readily learn the method of operating it;*

In order to vote on the AccuVote TS R6 or TSX voting station, the voter must press a pressure sensitive spot containing the name of the candidate. When the spot is pressed, a lighted square containing a large X appears beside the candidate's name. The persons participating in these tests did not have undue difficulty voting on the AccuVote TS R6 and TSX Voting Stations.

(8) *It shall be safely transported.*

The portion of the system that is installed in the precinct, the AccuVote TS R6 and TSX voting stations and the Express Poll 4000, are small and easily transported. See Section 3.2, System Hardware/Firmware.

21-2-379.4 Ballot appearance; write in votes on DRE systems

(a) *The ballots for direct recording electronic (DRE) voting systems shall be of such size and arrangement as will suit the construction of the DRE screen and shall be in plain, clear type that is easily readable by persons with normal vision. If the equipment has the capacity for color display, the names of all candidates in a particular race shall be displayed in the same color, font, and size and the political party or body affiliation of candidates may be displayed in a color different from that used to display the names of the candidates, but all political party or body affiliations shall be printed in the same size and font. All ballot questions and constitutional amendments shall be displayed in the same color.*

The Diebold Election Systems TS Voting System satisfies this requirement.

(b) *The arrangement of offices, names of candidates, and questions upon the ballots shall conform as nearly as practicable to this chapter for the arrangement of such offices, names of candidates, and questions on paper ballots.*

The Diebold Election Systems TS Voting System satisfies this requirement.

(c) *Electors shall be permitted to cast write-in votes on DRE voting systems as provided in Code Section 21-2-133. The design of the ballot shall permit the election superintendent and poll workers when obtaining the vote count from such systems to determine readily whether an elector has cast any write-in vote not authorized by law.*

The Diebold Election Systems TS Voting System satisfies this requirement.

21-2-379.5 Ballot information

(b) *The ballot for each candidate or group of candidates nominated by a political party or body shall display the name or designation of the political party or body.*

The Diebold Election Systems TS Voting System satisfies this requirement.

(c) *The incumbency of a candidate seeking election for the public office he or she then holds shall be indicated on the ballot.*

The Diebold Election Systems TS Voting System satisfies this requirement.

Appendix A

Certification Test Plan
Of the
Georgia DRE Voting System
September 2004

Hardware Definition

GEMS Computer

Voter Card Encoders
- 101532
- 115663
- 119134
- 119136

Voting Stations
- 110002
- 113438
- 114187
- 114995
- 115673
- 116217
- 116372
- 116669
- 119520
- 121216
- 121606
- 123461
- 128124

Key Card Tool
- Dell Notebook Computer

Absentee Ballot Scanner
- 86634

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G

Encoder	1.3.2
Key Card Tool	1.0.1

Phase I: Initial Setup:

1. Install the new system on Center devices and identify the differences between the current and the new system.
2. Identify the portions of the system that will require changes to the current training for election officials and poll workers.
3. Develop the ballot styles that will be used in the following Phases II and III. The ballot style for Phase II should be long enough that the summary page does not show on a single screen.
4. Develop voting scripts and voter instructions for use in Phase II.
5. Identify the devices that will be available for use during Certification Testing and set up the test environment.
6. Schedule a meeting to brief the KSU and SOS staff on the above items. This briefing should contain sufficient detail to enable this staff to make decisions about the implementation of the new system.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each county will have one early-voting terminal and each precinct will have two voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, thirteen AccuVote TS voting stations with firmware version 4.5.2 , two AccuVote OS ballot scanners with firmware version 1.94w, four voter card encoders with firmware version 1.3.2. (Diagram A, below)

Phase III: Stress Testing

1. High volume tests. Conduct tests to determine the ability of the TS units to accommodate a high volume of ballots. The number of ballots cast in this test will exceed the number of ballots that may be cast in an early voting setup.

2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.
3. Voter errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by voters.
4. Acts of Nature/Vandalism. Identify and test the system's ability to recovery from various acts of nature or vandalism.

Phase IV: Security Tests

- Conduct vulnerability assessment of the Diebold DRE to determine open ports and known vulnerabilities.
- Perform vulnerability assessment of the standard installation of GEMS Election Management Systems (EMS) to determine open ports and known vulnerabilities.
- Develop implementation recommendations for GEMS EMS, focusing on physical and procedural security.
- Hash and document GEMS standard installation for use in implementation validation and verification.
- Create hashing scripts to validate county implementations of GEMS against certified CES implementation of GEMS software.

Sample Ballot Script

Ballot Script
Georgia Certification Test

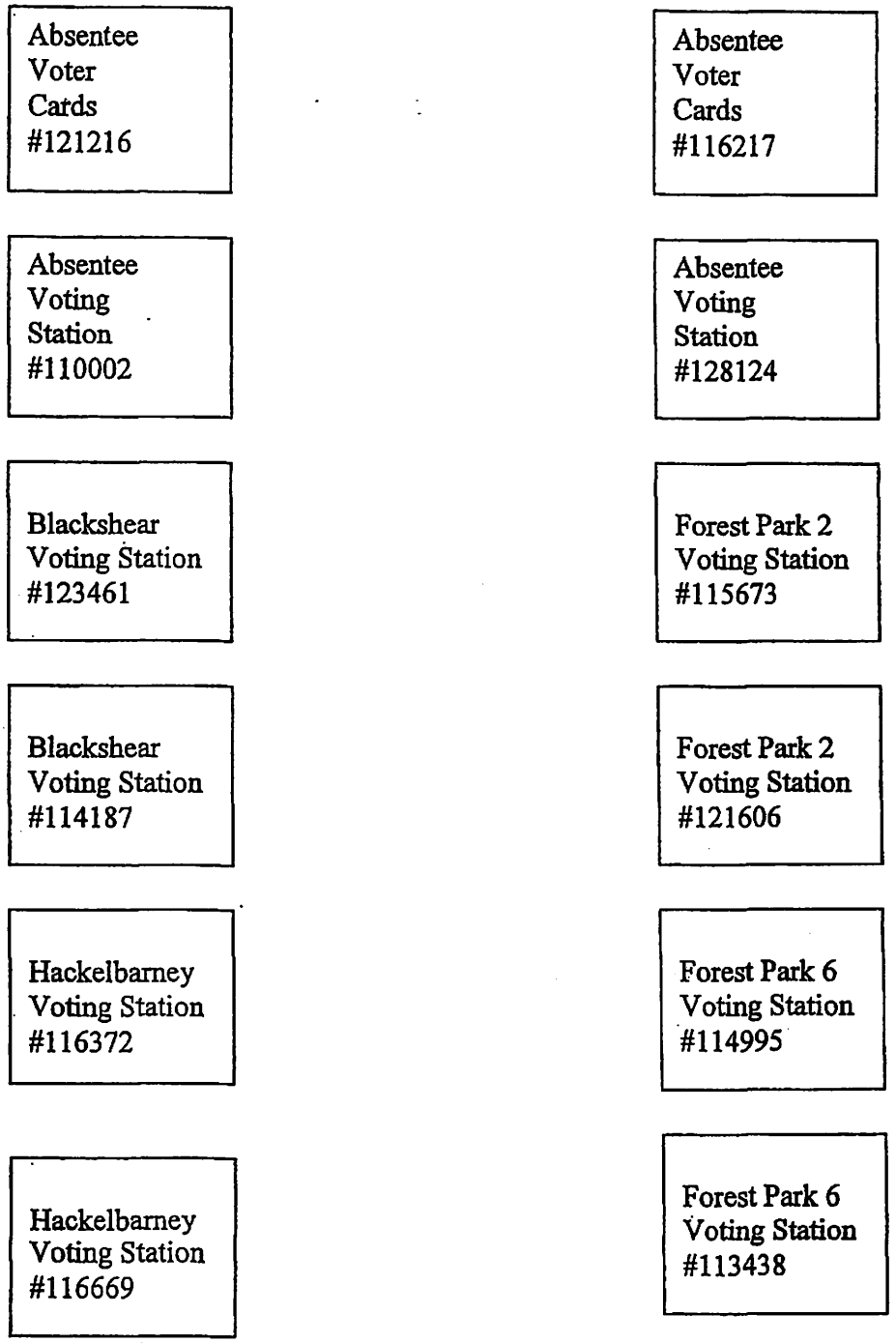
County: Clayton
Precinct/Split: Forest Park 2, Split A
Voting Station: _____
Script: 1

Voter: _____ **Date:** _____

US Senate:	**MAX CLELAND**
Governor:	**ROY E BARNES**
Lt. Governor:	**MARK TAYLOR**
Secretary of State:	**CATHY COX**
Attorney General:	**THURBERT BAKER**
Comm. Of Agriculture:	**TOMMY IRVIN**
Comm. Of Insurance:	**LOIS COHEN**
State School Super:	**BARBARA CHRISTMAS**
Comm. Of Labor	**MICHAEL THURMOND**
Public Service Comm. 1	**EARLEEN W SIZEMORE**
Public Service Comm. 2	**LAUREN MCDONALD, JR**
US Rep 13th District	**DAVID SCOTT**
State Senate 44th District:	**TERRELL A STARR**
State Rep. 50th District:	**GEORGANA SINKFIELD**
County Comm. Dist. 1	**CARL RHODENIZER**
Board of Education:	**ERICA DAVIS or SUE RYAN**

(CONTINUED)

Const. Ammend. 1	YES
Const. Ammend. 2	YES
Const. Ammend. 3	YES
Const. Ammend. 4	YES
Const. Ammend. 5	YES
Const. Ammend. 6	YES
Statewide Ref. A	YES
Statewide Ref. B	YES
Statewide Ref. C	YES
Statewide Ref. D	YES
Statewide Ref. E	YES



Usability Test Configuration
Diagram A

Appendix B

Certification Test Plan
Of the
AccuVote TSX Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX voting station, firmware version 4.5.2, will operate seamlessly in the Georgia Voting System. The precinct layout for these tests will be the same as the precinct layout presented in Appendix A, above.

Phase I: Interoperability:

The purpose of these tests is to verify that the AccuVote TSX voting station will operate seamlessly in the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX voting stations.
2. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX voting station will upload successfully into GEMS 1.18.22G.
3. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX voting station.
4. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations, AccuVote TSX voting stations, and AccuVote OS optical scan ballot scanners will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All AccuVote TSX voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX voting stations with firmware version 4.5.2 ,

one AccuVote OS ballot scanners with firmware version 1.94w, one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Phase IV: Security Tests

- Conduct vulnerability assessment of the AccuVote TSX voting station to determine open ports and known vulnerabilities.
- Develop recommendations for the storage and handling of TSX voting stations.

Hardware Definition

GEMS Computer

ExpressPoll 4000
5065012A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Voting Stations
204315
208152
223494
258838

Key Card Tool
Dell Notebook Computer

Absentee Ballot Scanner
40805

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2

Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix C

Certification Test Plan
Of the
AccuVote TSX Model D Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX, Model D, voting station using firmware version TSX 4.5.2, will operate seamlessly in the Georgia Voting System.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the AccuVote TSX Model D voting station with existing components of the Georgia Voting System.

5. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX Model D voting stations.
6. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX Model D voting station will upload successfully into GEMS 1.18.22G.
7. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX Model D voting station.
8. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations and AccuVote TSX Model D voting stations will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX – Model D voting station. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX Model D voting stations with firmware version TSX 4.5.2, and one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX – Model D voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Hardware Definition

GEMS Computer

ExpressPoll 4000
SOGS009A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Model D Voting Stations
262247
263480
263513
263515
276094
276137

Key Card Tool
Dell Notebook Computer

Software Definition

AVTS-R6	4.5.2
AVTS-TSX	4.5.2
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

#2.14

wyle laboratories

Wyle Letter No. T54441B-007

May 8, 2007

Mr. Ray Cobb
Center for Election Systems
Kennesaw State University
1000 Chastain Road #5700
Kennesaw GA 30144

Subject: Review of Cardwriter components of Express Poll 2.1.2

Dear Mr. Cobb:

Diebold Election Systems requested that Wyle Labs review Express Poll 2.1.2 to verify that the Cardwriter components included with the Express Poll 2.1.2 are the same components that were qualified under the 2002 FEC standards.

CIBER had previously performed a Source Code Review, TDP Review, and Functional Test of the Voter Access Card Writer portions of the Express Poll. (As Electronic Roster/Voter Registration software was not covered by the FEC standards, CIBER performed testing on only the Voter Access Card Writer portions of the Express Poll software.)

Wyle extracted the files from the 2.1.2 installation files and compared these to the archive of the qualified versions. It was determined that the Cardwriter components (PollCardWriter Version 1.1.4.0 and PCMcard.dll) included in the install were the same as the archive.

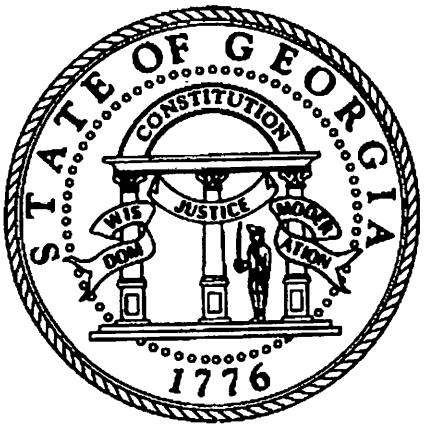
Additionally, as a part of this review, Wyle installed the software on both the Express Poll 4000 running Windows CE Rev 4.2 and Express Poll 5000 running Windows CE Rev 215; and created Voter Access Cards with both.

If you require additional information or have any questions, please do not hesitate to contact me by phone (256-716-4590), FAX (256-830-2109), or e-mail (dawn.bates@wylelabs.com).

Sincerely,
Wyle Laboratories, Inc.

Dawn K. Bates
Contracts Manager

Certification Test of the



Diebold Election Systems Voting System

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia, 30144

June 12, 2007

Contents

1. Introduction

Certification Tests of the Diebold AccuVote TS R6 Voting System were conducted at Kennesaw State University during the months of September, November, and December 2004. The Test Plan that was followed is contained in Appendix A.

The staff of the Kennesaw State University Center conducted these tests for Election Systems under the direction of Dr. Brit Williams.

Certification tests of the ExpressPoll 4000 were conducted in August and September 2005.

Certification tests of the ExpressPoll software upgrade 2.1.2 were conducted in May and June 2007

2. Summary of Findings

The Diebold AccuVote TS Voting System was found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State.

The following features are enhancements of the tested system over the previous system.

Encryption of the data files transmitted via modem: When the polls close on election night the poll manager has the ability to transmit unofficial results to the county elections office. The previous version of the voting system did not encrypt this file prior to transmission. The tested version of the voting system encrypts this file prior to transmission.

Randomization of all internal ballot image files: The previous version of the voting system contained one ballot image file that was not randomized. The tested version of the voting system randomizes all internal ballot image files.

Dynamic password on Poll Manager Card: In previous version of the voting system the password on the Poll Manager Card was a static four-digit number. The tested version of the system has a six-digit password and allows this password to be changed as often as desired.

Dynamic password on Voter Cards: In the previous version of the voting system the password contained in the hand-shaking routine between the voter card and the voting station was static. The tested version of the system allows this password to be changed as often as desired.

ExpressPoll 4000: ExpressPoll 4000 functions as an encoder that is connected to the precinct's electors list. By reading and displaying the precinct's electors list, ExpressPoll 4000 creates a voter access card which will access the voter's assigned ballot style by associating the voter's ballot combination, as outlined in the voter registration record, with the ballot styles maintained on the voting units within the precinct.

3. System Description

The system tested was the **AccuVote TS Voting System**, presented by Diebold Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas, 75069-8250. This system is composed of the **AccuVote TS R6 Voting Station**, the **AccuVote OS Ballot Scanner,** the **Voting Card Encoder**, the **ExpressPoll 4000** and a commercial computer running the **Global Election Management System (GEMS)**. A complete list of the system tested is contained in Appendix A.

3.1 System Hardware

The hardware tested consisted of:

A **"Large County" GEMS computer** provided by Diebold under the State contract.

Thirteen **AccuVote TS R6 Voting Stations** provided the voter interface.

Four **Voter Card Encoders** were used to program the voter cards.

One **AccuVote OS Ballot Scanner** was used to process absentee and provisional/challenged ballots.

Smart Cards were used for voter cards and supervisor cards.

Twenty-five **ExpressPoll 4000s** were used to display voter information from the state voter registration database for precincts and program the corresponding voter card.

The specific devices used during the certification tests are listed in the Test Plan, Appendix A.

3.2 System Software/Firmware

The operating system used by the personal computers that support the Global Election Management System and the Poll Book systems is **Windows CE**. Windows CE is also the operating system that controls the functions of the Voting Stations.

The **Global Election Management System (GEMS), Version 1.18.22G,** is a Diebold proprietary system which runs on a standard personal computer and performs the following pre-election functions: setup the election data base, create a new election, enter contests and issues, define ballot styles, and produce the PCMCIA cards that are used to program the voting stations in the precincts and the absentee ballot scanners. After the polls close, this system reads the PCMCIA cards from the precincts, tallies the votes, and prints the various reports and audit data.

BS, Version 4.5.2 is a Diebold proprietary system that controls the voting stations.

OS, Version 194w is a Diebold proprietary system that controls the OS Ballot Scanner.

Encoder Firmware 1.32 is a Diebold proprietary system that controls the voter card encoder.

Key Card Tool 1.01 is a Diebold Proprietary system that enables the election official to change the passwords on the Voter Cards and the Poll Manager's Card.

ExpressPoll Firmware 2.1.2 is a Diebold Proprietary system that enables an election official to read a voter record from the voter registration database and create a Voter Card for the ballot style that corresponds to the voter's registration information.

3.3 System and Test Documentation

AccuVote-TS R6 System Hardware Specification, Document Revision 1.0, Diebold Election Systems, April 30, 2001

AccuVote-TS Hardware Guide, Document Revision 1.0, Diebold Election Systems, April 30, 2001

AccuVote-TS Ballot Station 4.5 User's Guide, Revision 2.0, Diebold Election Systems, June 17, 2004

GEMS 1.18 Product Overview Guide, Revision 2.0, Diebold Election Systems, February 13, 2004

GEMS 1.18 Reference Guide, Revision 6.0, Diebold Election Systems, June 15, 2004

GEMS 1.18 Election Administrator's Guide, Revision 6.0, Diebold Election Systems, June 15, 2004

GEMS 1.18 User Guide, GEMS, Revision 4.0, Diebold Election Systems, November 1, 2002

Voter Card Encoder 1.3 User's Guide, Revision 1.0, Diebold Election Systems, February 10, 2004

Key Card Tool 1.0 User's Guide, Revision 2.0, Diebold Election Systems, April 20, 2004

AccuVote OS Precinct Count 1.96 User's Guide, Revision 1.0, Diebold Election Systems, August 27, 2002

AccuVote OS AccuFeed User's Guide, Revision 1.0, Diebold Election Systems, July 18, 2002

VCProgrammer 4.1 User's Guide, Revision 2.0, Diebold Election Systems, September 24, 2002

Source Code, GEMS Version 1-18-22G, Diebold Election Systems, July 2004

Source Code, ATVS Version 4.5.2, Diebold Election Systems, August 2004

Diebold Election Systems, Inc. Software Functional Test Report GEMS 1-18-22, Ciber Independent Test Authority, September 29, 2004

Change Release Report of the AccuVote TS R6 DRE Voting Machine, Wyle Laboratories, August 3, 2004

Source Code, ExpressPoll 4000 version 2.1.2, May 2007

Source Code, ExpressPoll 4000 Card Writer version 1.1.4.0, August 2005

ExpressPoll 4000 User's Guide v2.01, February 2005

ExpressPoll CardWriter TDP 2.02 System Overview, August 2005

ExpressPoll CardWriter TDP 2.08 System Operations Procedures, August 2005

3.4 Overview of System Operation

Election Definition: The following functions are performed by the Global Election Management System (GEMS).

Create the election database.

Enter races and candidates, issues and options that are to appear in the election

Select the races and issues that are to appear on each ballot style.

Enter headings and instructions as they are to appear on the ballots.

Format the ballots.

Establish passwords for the voter cards and poll manager's cards.

Hardware Programming: Once the election definition is complete, the PCMCIA cards can be prepared to control the AccuVote TS voting stations and the AccuVote OS optical scan ballot scanners. A PCMCIA card must be prepared for each voting station and each ballot scanner.

Precinct Setup: The voting stations and ballot scanners are prepared for the election by inserting the PCMCIA cards and powering up the device. The device performs a self-test and is then ready for pre-election testing. ExpressPolls are prepared for each precinct by inserting a Compact Flash Card containing voter information for all precincts within the state. ExpressPolls are then assigned to individual precinct allowing the device to display the electors list for that precinct and encode voter access cards that are to be used with the AccuVote TS units assigned to that location.

Election Day (Precinct) Activities: As the polls are opened and each device is powered up, the device performs a self-test and presents a menu with the various options allowed at the polling place. If the 'open polls' option is selected, the registers are set to zero and a 'zero totals' tape is printed.

A poll worker uses the ExpressPoll 4000 to isolate a voter's name on an electronically displayed elector's list within the precinct. It then encodes a voter access card while at the same time marking the precinct's electors list. The combined operation is designed to provide an accurate listing of voter participation at the precinct while ensuring that each participating elector receives the proper ballot style which is based directly on the voter's ballot combination outlined in the state's voter registration system.

When the polls are closed, the vote totals from each device are recorded to the PCMCIA cards. These cards are then transported to a central counting location for entry into the GEMS system for tallying and reporting. If desired, unofficial results from the precincts can be transmitted to the central location via modem.

During the precinct's closing procedures, the number of voters marked on the ExpressPolls is recorded and used to reconcile the precinct's activities for the day. ExpressPoll 4000 maintains a numbered list of voters that is updated as every voter access card is created. This numbered list is also used during the evening closing process.

Vote Tallying/Report Printing: The PCMCIA cards from each precinct are returned to the central facility where they are loaded into the GEMS. During this step, any known errors can be manually corrected and absentee votes can be entered.

At any time during the tally of the votes or at the completion of vote tallying, election result can be printed by precinct or overall. These reports can also be exported to other systems or posted on the Internet.

The system administrator can use the GEMS to print the various audit logs.

All actions on ExpressPoll 4000 are written to a log file stored on the unit's Compact Flash Card and also to an internal memory location. Following the election, these log files are retrieved in order to print marked electors lists and numbered lists of voters for records retention purposes.

4. Compliance With Applicable Statues and Standards

4.1 Election Assistance Commission Voting System Standards

Hardware/Firmware: The AccuVote TS R6 Voting System hardware and firmware was examined by Wyle Laboratories, Huntsville, Alabama and found to be in compliance with the hardware specifications contained in the EAC Voting System Standards. Wyle is an Independent Test Agency approved by the National Association of State Election Directors (NASED).

Software: The GEMS election management software was examined by Ciber, Inc., Huntsville, Alabama and found to be in compliance with the software specifications contained in the EAC Voting System Standards.

Ciber, Inc. is an Independent Test Agency approved by the National Association of State Election Directors.

NASED Qualification: Based on the reports from the ITAs, NASED assigned the system Qualification Number N-1-06-12-12-003.

4.2 Help America Vote Act of 2002

The AccuVote TS R6 Voting System is classified as an electronic voting system and, as such, falls under the following Sections of the **Help America Vote Act of 2002**

TITLE III--UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS; SEC. 302. PROVISIONAL VOTING AND VOTING INFORMATION REQUIREMENTS.

(a) Provisional Voting Requirements.--If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot ...

The AccuVote R6 voting station has the facility to allow a voter to vote a provisional ballot. This ballot is stored in a separate location and is not included in the tally until the county registrar has established the voter's credentials.

The paper ballot used for absentee voting can also be used to satisfy this requirement.

(2) Audit capacity (B) Manual audit capacity.—
(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

The AccuVote TS R6 Voting System can satisfy this requirement.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

The AccuVote TS R6 Voting System satisfies this requirement. The AccuVote TS R6 Voting System presents a summary screen at the end of the ballot that gives the voter the opportunity to change any selection.

(3) Accessibility for individuals with disabilities.—The voting system shall--(A) be accessible for individuals with disabilities, including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

The voter using the AccuVote TS R6 voting station can choose to view the ballot in large print or in high contrast or both. In addition, The AccuVote TS R6 voting station can be equipped with a telephone keypad and earphones for vision impaired voters.

4.3 Georgia Election Code

The AccuVote TS R6 Voting System is classified as a direct recording electronic voting system. The Georgia Election Code, Section 21-3-379 regulates systems of this type.

21-2-379.1 Requirements for use of electronic recording voting systems

No direct electronic recording voting system shall be adopted or used unless it shall, at the time, satisfy the following requirements:

(i) It shall provide facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;

The AccuVote TS R6 Voting System satisfies this requirement.

(ii) It shall permit each elector, in one operation, to vote for all candidates of one party of body for presidential electors;

The AccuVote TS R6 Voting System satisfies this requirement.

(1) Except as provided in paragraph (2) of this Code section for presidential electors, it shall permit each elector, at other than primaries, to vote a ticket selected from nominees of any and all parties or bodies, from independent nominations, and from persons not in nomination;

The AccuVote TS R6 Voting System satisfies this requirement.

(2) *It shall permit each elector to vote, at any election, for any person and for any office for whom and for which he or she is lawfully entitled to vote, whether or not the name of such person or persons appears as a candidate for election, to vote for as many persons for an office as he or she is entitled to vote for; and to vote for or against any question upon which he or she is entitled to vote;*

The AccuVote TS R6 Voting System satisfies this requirement. Tests included multiple candidates for a single office and write-in candidates.

(3) *It shall preclude the counting of votes for any candidate or upon any question for whom or upon which an elector is not entitled to vote; shall preclude the counting of votes for more persons for any office than he or she is entitled to vote for; and shall preclude the counting of votes for any candidate for the same office or upon any question more than once;*

The AccuVote TS R6 Voting System satisfies this requirement. Tests indicated that the voter was only able to see and vote on the assigned ballot style. The system does not allow over-votes. Once the allowed number of candidates has been selected, the voter cannot select another candidate without first releasing one of the previously selected candidates. Tests were conducted to ensure that a voter could not write in the same name multiple times in a multi-candidate contest.

(4) *It shall permit voting in absolute secrecy so that no person can see or know for whom any other elector has voted or is voting save an elector whom he or she has assisted or is assisting in voting, as prescribed by law.*

The AccuVote TS R6 Voting System satisfies this requirement.

(5) *It shall be constructed of material of good quality in a neat and workmanship like manner;*

The AccuVote TS R6 Voting System satisfies this requirement. The quality of the materials and workmanship was reviewed by the hardware/firmware ITA, Wyle Laboratories.

(6) *It shall, when properly operated, record correctly and accurately every vote cast;*

The AccuVote TS R6 Voting System satisfies this requirement. The hardware ITA, Wyle Laboratories, and the software ITA,

Ciber, Inc., extensively tested this requirement. The State certification tests included logic and accuracy tests, but with a smaller number of ballots than the tests conducted by the ITAs.

(7) *It shall be so constructed that an elector may readily learn the method of operating it;*

In order to vote, the voter must press a pressure sensitive spot containing the name of the candidate. When the spot is pressed, a lighted square containing a large X appears beside the candidate's name. The persons participating in these tests did not have undue difficulty voting on the AccuVote TS R6 Voting System.

(8) *It shall be safely transported.*

The portion of the system that is installed in the precinct, the AccuVote TS R6 voting stations Precinct Card Manager are small and easily transported. See Section 3.2, System Hardware/Firmware.

21-2-379.4 Ballot appearance; write in votes on DRE systems

(a) *The ballots for direct recording electronic (DRE) voting systems shall be of such size and arrangement as will suit the construction of the DRE screen and shall be in plain, clear type that is easily readable by persons with normal vision. If the equipment has the capacity for color display, the names of all candidates in a particular race shall be displayed in the same color, font, and size and the political party or body affiliation of candidates may be displayed in a color different from that used to display the names of the candidates, but all political party or body affiliations shall be printed in the same size and font. All ballot questions and constitutional amendments shall be displayed in the same color.*

The AccuVote TS R6 Voting System satisfies this requirement.

(b) *The arrangement of offices, names of candidates, and questions upon the ballots shall conform as nearly as practicable to this chapter for the arrangement of such offices, names of candidates, and questions on paper ballots.*

The AccuVote TS R6 Voting System satisfies this requirement.

(c) *Electors shall be permitted to cast write-in votes on DRE voting systems as provided in Code Section 21-2-133. The design of the ballot shall permit the election superintendent and poll workers*

when obtaining the vote count from such systems to determine readily whether an elector has cast any write-in vote not authorized by law.

The AccuVote TS R6 Voting System satisfies this requirement.

21-2-379.5 Ballot information

(b) *The ballot for each candidate or group of candidates nominated by a political party or body shall display the name or designation of the political party or body.*

The AccuVote TS R6 Voting System satisfies this requirement.

(c) *The incumbency of a candidate seeking election for the public office he or she then holds shall be indicated on the ballot.*

The AccuVote TS R6 Voting System satisfies this requirement.

21-2-224 Official List of Electors Content (Active and Inactive)

(g) *The official list of electors and the official list of inactive electors prepared and distributed to the poll officers of each precinct shall include only the elector's name, address, ZIP Code, date of birth, voter identification number, a designation of whether the elector registered for the first time in this state by mail and is required to comply with Code Sections 21-2-220 and 21-2-417, congressional district, state Senate district, state House district, county commission district, if any, county or independent board of education district, if any, and municipal governing authority district designations, if any, and such other voting districts, if any. The official list of electors and the official list of inactive electors prepared and distributed to the poll officers of each precinct may also include codes designating that an elector has voted by absentee ballot, has been challenged, or has been sent mail by the registrars which has been returned marked undeliverable. No person whose name does not appear on the official list of electors shall vote or be allowed to vote at any election, except as otherwise provided in this article.*

The ExpressPoll 4000 with software version 2.1.2 satisfies this requirement.

21-2-401 Official List of Electors Content (Active and Inactive)

(b) *... The list shall indicate the name of any elector who has been mailed or delivered an absentee ballot. The list for a given precinct may be divided into as many alphabetical sections as is deemed necessary. ...In addition, the registrars shall at the same time place in the possession of the managers in each precinct one copy of the list of inactive electors for such precinct. ...*

The ExpressPoll 4000 with software version 2.1.2 satisfies this requirement.

(c) *The registrars may, in their discretion, place a master list containing the names and proper voting precincts of all electors and all inactive electors of the county or municipality at some or all of the polling places located in the county or municipality on the day of each election for use by the poll workers to assist electors in locating their proper precinct.*

The ExpressPoll 4000 with software version 2.1.2 satisfies this requirement.

Appendix A

Certification Test Plan
Of the
Georgia DRE Voting System
September 2004

Hardware Definition

GEMS Computer

Voter Card Encoders
- 101532
- 115663
- 119134
- 119136

Voting Stations
- 110002
- 113438
- 114187
- 114995
- 115673
- 116217
- 116372
- 116669
- 119520
- 121216
- 121606
- 123461
- 128124

Key Card Tool
- Dell Notebook Computer

Absentee Ballot Scanner
- 86634

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G

Encoder	1.3.2
Key Card Tool	1.0.1

Faze I: Initial Setup:

1. Install the new system on Center devices and identify the differences between the current and the new system.
2. Identify the portions of the system that will require changes to the current training for election officials and poll workers.
3. Develop the ballot styles that will be used in the following Phases II and III. The ballot style for Phase II should be long enough that the summary page does not show on a single screen.
4. Develop voting scripts and voter instructions for use in Phase II.
5. Identify the devices that will be available for use during Certification Testing and set up the test environment.
6. Schedule a meeting to brief the KSU and SOS staff on the above items. This briefing should contain sufficient detail to enable this staff to make decisions about the implementation of the new system.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each county will have one early-voting terminal and each precinct will have two voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, thirteen AccuVote TS voting stations with firmware version 4.5.2, two AccuVote OS ballot scanners with firmware version 1.94w, four voter card encoders with firmware version 1.3.2. (Diagram A, below)

Phase III: Stress Testing

1. High volume tests. Conduct tests to determine the ability of the TS units to accommodate a high volume of ballots. The number of ballots cast in this test will exceed the number of ballots that may be cast in an early voting setup.

2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.
3. Voter errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by voters.
4. Acts of Nature/Vandalism. Identify and test the system's ability to recovery from various acts of nature or vandalism.

Phase IV: Security Tests

- Conduct vulnerability assessment of the Diebold DRE to determine open ports and known vulnerabilities.
- Perform vulnerability assessment of the standard installation of GEMS Election Management Systems (EMS) to determine open ports and known vulnerabilities.
- Develop implementation recommendations for GEMS EMS, focusing on physical and procedural security.
- Hash and document GEMS standard installation for use in implementation validation and verification.
- Create hashing scripts to validate county implementations of GEMS against certified CES implementation of GEMS software.

Sample Ballot Script

Ballot Script
Georgia Certification Test

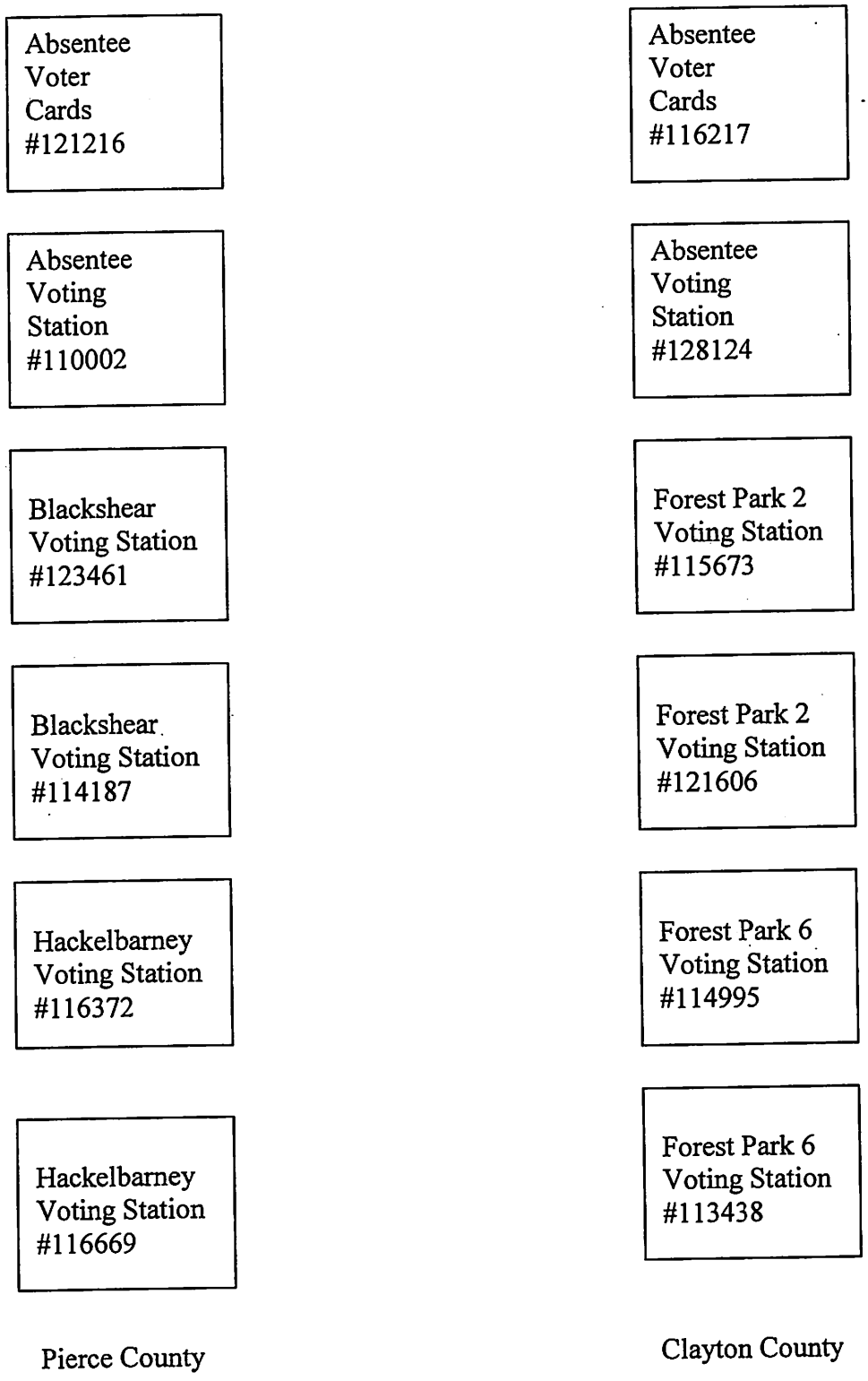
County: Clayton
Precinct/Split: Forest Park 2, Split A
Voting Station: _____
Script: 1

Voter: _____ Date: _____

US Senate:	MAX CLELAND
Governor:	ROY E BARNES
Lt. Governor:	MARK TAYLOR
Secretary of State:	CATHY COX
Attorney General:	THURBERT BAKER
Comm. Of Agriculture:	TOMMY IRVIN
Comm. Of Insurance:	LOIS COHEN
State School Super:	BARBARA CHRISTMAS
Comm. Of Labor	MICHAEL THURMOND
Public Service Comm. 1	EARLEEN W SIZEMORE
Public Service Comm. 2	LAUREN MCDONALD, JR
US Rep 13th District	DAVID SCOTT
State Senate 44th District:	TERRELL A STARR
State Rep. 50th District:	GEORGANA SINKFIELD
County Comm. Dist. 1	CARL RHODENIZER
Board of Education:	ERICA DAVIS or SUE RYAN

(CONTINUED)

Const. Ammend. 1	**YES**
Const. Ammend. 2	**YES**
Const. Ammend. 3	**YES**
Const. Ammend. 4	**YES**
Const. Ammend. 5	**YES**
Const. Ammend. 6	**YES**
Statewide Ref. A	**YES**
Statewide Ref. B	**YES**
Statewide Ref. C	**YES**
Statewide Ref. D	**YES**
Statewide Ref. E	**YES**



Usability Test Configuration
Diagram A

ExpressPoll 4000 with Software Version 2.1.2 Testing Setup
May – June 2007

One Hundred fifty-nine GEMS databases were built using data associated with the July 2006 Georgia General Primary. These databases were combined with voter registration data for all registered voters in Georgia as of May 1, 2007. The combined data was used to power ExpressPoll during testing.

Phase I: Usability Tests

Testing is conducted to witness the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Testing scripts were prepared requiring the user to perform detailed operations on each ExpressPoll unit with a known outcome.

Setup: Two ExpressPoll 4000 units are connected via crossover cable and are assigned to a single polling location (normal precinct configuration). Users are to assign their devices to one of four locations from a list of known polling locations contained in the test data. Once assigned, users performed specific functions required of a precinct's electors list and voter access card encoder.

Four Required Locations:

Name (County)	Polling Precinct ID
Vineville 6 (Bibb County, GA)	011036
Brooklet (Bulloch County, GA)	016004
Jenkinsburg (Butts County, GA)	018004
Canton (Cherokee County, GA)	028062

Phase II: Stress Testing

1. High volume tests. Tests conducted to determine the ability of ExpressPoll 4000 to function in an expected and anticipated manner over an extended period of within pre-designated precincts using ExpressPoll 4000's normal precinct configuration.
2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.

Phase III: Security Testing

Penetration tests on the ExpressPoll 4000 were previously conducted by the Center for Information Security Education and Awareness at Kennesaw State University. These tests were used to determine the vulnerability to outside attack of ExpressPoll 4000 in its precinct configuration.

#2.14

Certification Test of the

Premier Election Solutions, Inc. TS Voting System

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia, 30144

Revised
March 28, 2008

Contents

1. Introduction

Certification Tests of the Georgia Voting System were conducted at Kennesaw State University during the month of March 2008. The purpose of these tests was to verify that the Dell Power Edge Server with service pack 4 would function seamlessly in the Georgia voting system. These components passed these tests. A recommendation was sent to the Secretary of State that these components be certified for use in Georgia voting system. The Test Plans for these tests are contained in Appendix D.

Certification Chronology

Certification tests of the Georgia Voting System including security upgrades were conducted in December 2004. (See Appendix A)

Certification tests to include the ExpressPoll 4000 in this system were conducted in August and September, 2005.

Certification tests to include the AccuVote TSX – Model C Voting Station in this system were conducted in March 2006. (See Appendix B)

Certification tests to include the AccuVote TSX – Model D Voting Station in this system were conducted in July 2006. (See Appendix C)

Tests to validate that the Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 will function correctly in this system were conducted in March 2008. (See Appendix D)

These tests were conducted by the staff of the Kennesaw State University Center for Election Systems under the direction of Dr. Brit Williams.

2. Summary of Findings

The Premier Election System TS Voting System as tested in 2004 was found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State. This system consists of the following components:

Dell Power Edge with GEMS	1.18.22G
AccuVote R6 voting station with	AVTS 4.5.2
AccuVote OS ballot scanner with	AVOS 1.94w
Voter Card Encoder with	Firmware 1.32
Key Card Tool with	Firmware 1.01

The following features are enhancements that were tested in December 2004 for inclusion in the Georgia voting system.

Encryption of the data files transmitted via modem: When the polls close on election night the poll manager has the ability to transmit unofficial results to the county elections office. The previous version of the voting system did not encrypt this file prior to transmission. The tested version of the voting system encrypts this file prior to transmission.

Randomization of all internal ballot image files: The previous version of the voting system contained one ballot image file that was not randomized. The tested version of the voting system randomizes all internal ballot image files.

Dynamic password on Poll Manager Card: In previous version of the voting system the password on the Poll Manager Card was a static four digit number. The tested version of the system has a six digit password and allows this password to be changed as often as desired.

Dynamic password on Voter Cards: In the previous version of the voting system the password contained in the hand-shaking routine between the voter card and the voting station was static. The tested version of the system allows this password to be changed as often as desired.

The ExpressPoll 4000 with firmware 2.1.2 with card writer 1.1.4.0 was tested in September 2005 for inclusion in the Georgia voting system.

ExpressPoll 4000: ExpressPolls function as an encoder that is connected to the precinct's electors list. By reading and displaying the precinct's electors list, The ExpressPoll creates a voter access card which will access the voter's assigned ballot style by associating the voter's ballot combination, as outlined in the voter registration record, with the ballot styles maintained on the voting units within the precinct.

The AccuVote TSX, Models C and D with firmware 4.5.2 were tested in July 2006 for inclusion in the Georgia voting system.

AccuVote TSX – Model C Voting Station: The TSX – Model C is a revised version of the AccuVote TS R6 voting station. The TSX is functionally identical to the TS R6. Enhancements include an integrated carrying/storage case, lighter weight, and a light-weight, battery powered voting tablet that can be removed from the case and placed in a handicapped voters lap or carried to curb-side. The certification Test Plan for the TSX – Model C is contained in Appendix B.

AccuVote TSX – Model D Voting Station: The TSX – Model D is a slightly modified version of the TSX Model C Voting Station. The Model D is both

functionally and electronically identical to the Model C. Thus, the Model D does not require any additional training for election officials or voters who are familiar with the Model C. The Model D was developed in response to the unavailability of some of the components of the Model C. The certification Test Plan for the TSX – Model D is contained in Appendix C.

The Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 was tested in March 2008 for inclusion in the Georgia Voting System.

The original Dell servers used in the Georgia Voting System were acquired in 2002. These servers are nearing the end of their expected life. The Dell Power Edge tested will be used as a replacement for the original Dell computers. The certification test plan for the Dell Power Edge Server is contained in Appendix D.

3. System Description

The system tested in December 2004 was the **AccuVote TS Voting System,** presented by Premier Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas, 75069-8250. This system is composed of the **AccuVote TS R6 Voting Station,** the **AccuVote TSX Voting** Station, the **AccuVote OS Ballot Scanner,** the **Voting Card Encoder,** the **Express Poll 4000,** and a commercial computer running the **Global Election Management System (GEMS).** A complete list of the system tested is contained in Appendix A.

3.1 System Hardware

At the conclusion of tests performed in March 2008, the hardware of the Georgia voting system consists of:

Dell Power Edge computers provided by Premier under the State contract support the election management system (GEMS).

Dell Power Edge Servers with service pack 4 support the election management system.

AccuVote TS R6 Voting Stations provide a voter interface.

AccuVote TSX Models C and D Voting Stations provide a voter interface.

AccuVote OS Ballot Scanners are used to process absentee and provisional/challenged ballots.

Voter Card Encoders are used to program the voter cards.

Smart Cards are used for voter cards and supervisor cards.

ExpressPoll 4000s are used to read voter's records from the precinct voter registration database and create the corresponding voter card.

3.2 System Software/Firmware

At the conclusion of tests performed in March 2008, the software/firmware of the Georgia voting system consists of:

The operating system used by the personal computers that support the Global Election Management System and the Poll Book systems is **Windows CE with power pack 4.** Windows CE is also the operating system that controls the functions of the Voting Stations.

The **Global Election Management System (GEMS), Version 1.18.22G,** is a Premier proprietary system which runs on a the Dell servers and performs the following pre-election functions: setup the election data base, create a new election, enter contests and issues, define ballot styles, and produce the PCMCIA cards that are used to program the voting stations in the precincts and the absentee ballot scanners. After the polls close, this system reads the PCMCIA cards from the precincts, tallies the votes, and prints the various reports and audit data.

BS, Version 4.5.2 is a Premier proprietary system that controls the TS-R6 and TSX voting stations.

OS, Version 194w is a Premier proprietary system that controls the OS Ballot Scanner.

Encoder Firmware 1.32 is a Premier proprietary system that controls the voter card encoder.

Key Card Tool 1.01 is a Premier Proprietary system that enables the election official to change the passwords on the Voter Cards and the Poll Manager's Card.

ExpressPoll Firmware 1.2.0 with card writer 1.1.4.0 is a Premier Proprietary system that enables an election official to read a voter record

from the voter registration database and create a Voter Card for the ballot style that corresponds to the voter's registration information.

3.3 System and Test Documentation

AccuVote-TS R6 System Hardware Specification, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

AccuVote-TS Hardware Guide, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

GEMS 1.18 User Guide, GEMS, Revision 4.0, Premier Election Solutions, Inc., November 1, 2002

AccuVote OS AccuFeed User's Guide, Revision 1.0, Premier Election Solutions, Inc., July 18, 2002

VCProgrammer 4.1 User's Guide, Revision 2.0, Premier Election Solutions, Inc., September 24, 2002

AccuVote OS Precinct Count 1.96 User's Guide, Revision 1.0, Premier Election Solutions, Inc., August 27, 2002

AccuVote-TS Ballot Station 4.5 User's Guide, Revision 2.0, Premier Election Solutions, Inc., June 17, 2004

GEMS 1.18 Product Overview Guide, Revision 2.0, Premier Election Solutions, Inc., February 13, 2004

GEMS 1.18 Reference Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

GEMS 1.18 Election Administrator's Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

Voter Card Encoder 1.3 User's Guide, Revision 1.0, Premier Election Solutions, Inc., February 10, 2004

Key Card Tool 1.0 User's Guide, Revision 2.0, Premier Election Solutions, Inc., April 20, 2004

Source Code, GEMS Version 1-18-22G, Premier Election Solutions, Inc., July 2004

Premier Election Solutions, Inc., Inc. Software Functional Test Report GEMS 1-18-22, Ciber Independent Test Authority, September 29, 2004

Change Release Report of the AccuVote TS R6 DRE Voting Machine, Wyle Laboratories, August 3, 2004

AccuVote TSX Hardware Guide, Premier Election Solutions, Inc., Revision 8.0, February 2004

AccuVote TSX Poll worker's Guide, Premier Election Solutions, Inc., Revision 5.0, March 2005

GEMS 1-18 Election Administrator's Guide, Premier Election Solutions, Inc., Revision 10.0, May 2005

GEMS 1.18 Product Overview Guide, Revision 3.0, Premier Election Solutions, Inc., December 2005

GEMS 1.18 Reference Guide, Revision 8.0, Premier Election Solutions, Inc., April 2005

GEMS 1.18 User Guide, GEMS, Revision 12.0, Premier Election Solutions, Inc., April 2005

ExpressPoll Administrator's Guide for Version 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll Emulator and Resource Guide for Versions 1.2 and 2.1, Revision 3.0, Premiere Election Solutions, 2005

ExpressPoll User's Guide for Versions 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix A: Software Specification, Premier Election Solutions, Inc., 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix B: Program Data Structure and Flow, Premier Election Solutions, Inc., 2005

Software Functional Test Report Premier Election Solutions, Inc. GEMS 1-18, Addendum 12 for GEMS 1-18-22G, Ciber Independent Test Authority, June 2006

Hardware Qualification Testing of the Premier Election Solutions, Inc. AccuVote TSX Model D DRE Voting Machine, Wyle Report 52501-07 on the AccuVote TSX Model D Tablet, Wyle Laboratories, Inc., April 2006

GEMS 1.18 System Administrator's Guide, Revision 7.0, Premier Election Solutions, Inc., January 2006

Georgia Election Code, Annotated, 2007 Edition

3.4 Overview of System Operation

Election Definition: The following functions are performed by the Global Election Management System (GEMS).

Create the election database.

Enter races and candidates, issues and options that are to appear in the election

Select the races and issues that are to appear on each ballot style.

Enter headings and instructions as they are to appear on the ballots.

Format the ballots.

Establish passwords for the voter cards and poll manager's cards.

Hardware Programming: Once the election definition is complete, the PCMCIA cards can be prepared to control the AccuVote TS voting stations and the AccuVote OS optical scan ballot scanners. A PCMCIA card must be prepared for each voting station and each ballot scanner.

Precinct Setup: The voting stations and ballot scanners are prepared for the election by inserting the PCMCIA cards and powering up the device. The device performs a self test and is then ready for pre-election testing.

Election Day (Precinct) Activities: As the polls are opened and each device is powered up, the device performs a self test and presents a menu with the various options allowed at the polling place. If the 'open polls' option is selected, the registers are set to zero and a 'zero totals' tape is printed.

The ExpressPoll is used by a poll worker to isolate a voter's name on an electronically displayed elector's list within the precinct and then create a voter access card while at the same time marking the precinct's electors list. The combined operation is designed to provide an accurate listing of voter participation at the precinct while ensuring that each participating

elector receives the proper ballot style which is based on the voter's ballot combination outlined in the state's voter registration system.

When the polls are closed, the vote totals from each device are recorded to the PCMCIA cards. These cards are then transported to a central counting location for entry into the GEMS system for tallying and reporting. If desired, unofficial results from the precincts can be transmitted to the central location via modem.

Vote Tallying/Report Printing: The PCMCIA cards from each precinct are returned to the central facility where they are loaded into the GEMS. During this step, any known errors can be manually corrected and absentee votes can be entered.

At any time during the tally of the votes or at the completion of vote tallying, election result can be printed by precinct or overall. These reports can also be exported to other systems or posted on the Internet.

The system administrator can use the GEMS to print the various audit logs.

4. Compliance With Applicable Statues and Standards

4.1 Election Assistance Commission Voting System Standards

Hardware/Firmware: The Premier Election Solutions, Inc. TS Voting System hardware and firmware was examined by Wyle Laboratories, Huntsville, Alabama and found to be in compliance with the hardware specifications contained in the EAC Voting System Standards. Wyle is an Independent Test Agency approved by the National Association of State Election Directors (NASED).

Software: The GEMS election management software was examined by Ciber, Inc., Huntsville, Alabama and found to be in compliance with the software specifications contained in the EAC Voting System Standards. Ciber, Inc. is an Independent Test Agency approved by the National Association of State Election Directors.

NASED Qualification: The components that comprise the Georgia voting system are qualified under NASED voting system Qualification Numbers N-1-06-12-12-003 through N-1-06-12-12-010.

4.2 Help America Vote Act of 2002

The Premier Election Solutions, Inc. TS Voting System is classified as an electronic voting system and, as such, falls under the following Sections of the **Help America Vote Act of 2002**

TITLE III--UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS; SEC. 302. PROVISIONAL VOTING AND VOTING INFORMATION REQUIREMENTS.

(a) Provisional Voting Requirements.--If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot ...

The Premier Election Solutions, Inc. TS Voting System has the facility to allow a voter to vote a provisional ballot. This ballot is stored in a separate location and is not included in the tally until the voter's credentials have been established by the county registrar.

The paper ballot used for absentee voting can also be used to satisfy this requirement.

(2) Audit capacity (B) Manual audit capacity.—
(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

The Premier Election Solutions, Inc. TS Voting System can satisfy this requirement.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The AccuVote TS R6 and TSX Voting Stations present a summary screen at the end of the ballot that gives the voter the opportunity to change any selection.

(3) Accessibility for individuals with disabilities.—The voting system shall--(A) be accessible for individuals with disabilities, including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

The voter using the AccuVote TS R6 and TSX voting stations can choose to view the ballot in large print or in high contrast or both. In addition, The AccuVote TS R6 and TSX voting stations can be equipped with a keypad and earphones for vision impaired voters.

4.3 Georgia Election Code, Annotated, 2007 Edition

The Premier Election Solutions, Inc. TS Voting System is classified as direct recording electronic voting systems. The Georgia Election Code, Section 21-3-379 regulates systems of this type.

21-2-379.1 Requirements for use of electronic recording voting systems

No direct electronic recording voting system shall be adopted or used unless it shall, at the time, satisfy the following requirements:

(1) *It shall provide facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(2) *It shall permit each elector, in one operation, to vote for all candidates of one party of body for presidential electors;*

The Premier Election System TS Voting System satisfies this requirement.

(3) *Except as provided in paragraph (2) of this Code section for presidential electors, it shall permit each elector, at other than primaries, to vote a ticket selected from nominees of any and all parties or bodies, from independent nominations, and from persons not in nomination;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(4) *It shall permit each elector to vote, at any election, for any person and for any office for whom and for which he or she is lawfully entitled to vote, whether or not the name of such person or persons appears as a candidate for election, to vote for as many persons for an office as he or she is entitled to vote for; and to vote for or against any question upon which he or she is entitled to vote;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests included multiple candidates for a single office and write-in candidates.

(5) *It shall preclude the counting of votes for any candidate or upon any question for whom or upon which an elector is not entitled to vote; shall preclude the counting of votes for more persons for any office than he or she is entitled to vote for; and shall preclude the counting of votes for any candidate for the same office or upon any question more than once;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests indicated that the voter was only able to see and vote on the assigned ballot style. The system does not allow over-votes. Once the allowed number of candidates has been selected, the voter cannot select another candidate without first releasing one of the previously selected candidates. Tests were conducted to ensure that a voter could not write in the same name multiple times in a multi-candidate contest.

(6) *It shall permit voting in absolute secrecy so that no person can see or know for whom any other elector has voted or is voting save an elector whom he or she has assisted or is assisting in voting, as prescribed by law.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(7) *It shall be constructed of material of good quality in a neat and workmanship like manner;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The quality of the materials and workmanship was reviewed by the hardware/firmware ITA, Wyle Laboratories.

(8) *It shall, when properly operated, record correctly and accurately every vote cast;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The hardware ITA, Wyle Laboratories, and the software ITA, Ciber, Inc., extensively tested this requirement. The State certification tests included logic and accuracy tests, but with a smaller number of ballots than the tests conducted by the ITAs.

(9) *It shall be so constructed that an elector may readily learn the*

method of operating it;

In order to vote on the AccuVote TS R6 or TSX voting station, the voter must press a pressure sensitive spot containing the name of the candidate. When the spot is pressed, a lighted square containing a large X appears beside the candidate's name. The persons participating in these tests did not have undue difficulty voting on the AccuVote TS R6 and TSX Voting Stations.

(10) *It shall be safely transported.*

The portion of the system that is installed in the precinct, the AccuVote TS R6 and TSX voting stations and the Express Poll 4000, are small and easily transported. See Section 3.2, System Hardware/Firmware.

21-2-379.4 Ballot appearance; write in votes on DRE systems

(a) The ballots for direct recording electronic (DRE) voting systems shall be of such size and arrangement as will suit the construction of the DRE screen and shall be in plain, clear type that is easily readable by persons with normal vision. If the equipment has the capacity for color display, the names of all candidates in a particular race shall be displayed in the same color, font, and size and the political party or body affiliation of candidates may be displayed in a color different from that used to display the names of the candidates, but all political party or body affiliations shall be printed in the same size and font. All ballot questions and constitutional amendments shall be displayed in the same color.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(b) The arrangement of offices, names of candidates, and questions upon the ballots shall conform as nearly as practicable to this chapter for the arrangement of such offices, names of candidates, and questions on paper ballots.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) Electors shall be permitted to cast write-in votes on DRE voting systems as provided in Code Section 21-2-133. The design of the ballot shall permit the election superintendent and poll workers when obtaining the vote count from such systems to determine

readily whether an elector has cast any write-in vote not authorized by law.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

21-2-379.5 Ballot information

(b) *The ballot for each candidate or group of candidates nominated by a political party or body shall display the name or designation of the political party or body.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) *The incumbency of a candidate seeking election for the public office he or she then holds shall be indicated on the ballot.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

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Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each county will have one early-voting terminal and each precinct will have two voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, thirteen AccuVote TS voting stations with firmware version 4.5.2 , two AccuVote OS ballot scanners with firmware version 1.94w, four voter card encoders with firmware version 1.3.2. (Diagram A, below)

Phase III: Stress Testing

1. High volume tests. Conduct tests to determine the ability of the TS units to accommodate a high volume of ballots. The number of ballots cast in this test will exceed the number of ballots that may be cast in an early voting setup.

2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.
3. Voter errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by voters.
4. Acts of Nature/Vandalism. Identify and test the system's ability to recovery from various acts of nature or vandalism.

Phase IV: Security Tests

- Conduct vulnerability assessment of the Premier DRE to determine open ports and known vulnerabilities.
- Perform vulnerability assessment of the standard installation of GEMS Election Management Systems (EMS) to determine open ports and known vulnerabilities.
- Develop implementation recommendations for GEMS EMS, focusing on physical and procedural security.
- Hash and document GEMS standard installation for use in implementation validation and verification.
- Create hashing scripts to validate county implementations of GEMS against certified CES implementation of GEMS software.

Ballot Script
Georgia Certification Test

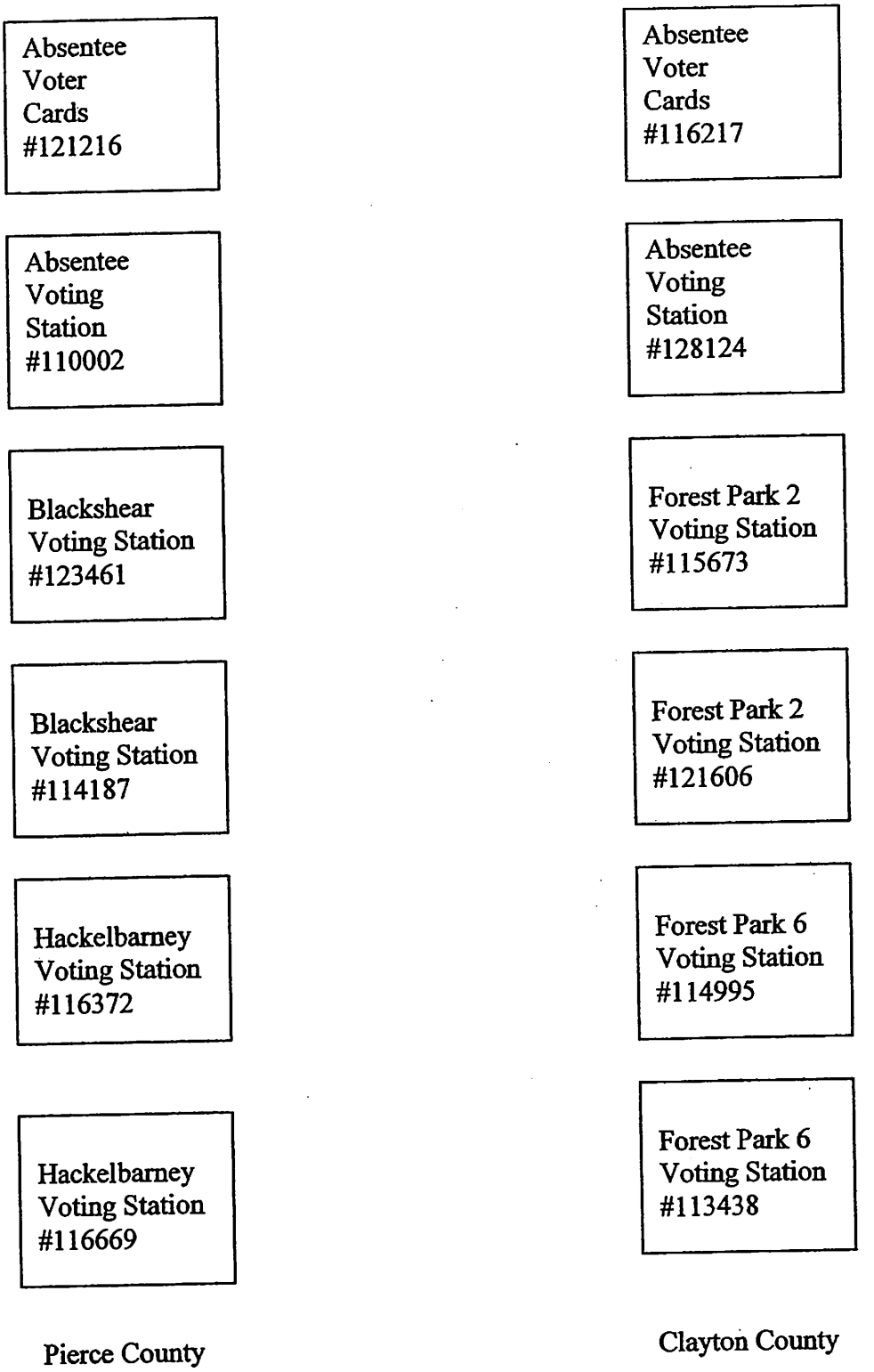
County: Clayton
Precinct/Split: Forest Park 2, Split A
Voting Station: _____
Script: 1

Voter: _____ **Date:** _____

US Senate:	**MAX CLELAND**
Governor:	**ROY E BARNES**
Lt. Governor:	**MARK TAYLOR**
Secretary of State:	**CATHY COX**
Attorney General:	**THURBERT BAKER**
Comm. Of Agriculture:	**TOMMY IRVIN**
Comm. Of Insurance:	**LOIS COHEN**
State School Super:	**BARBARA CHRISTMAS**
Comm. Of Labor	**MICHAEL THURMOND**
Public Service Comm. 1	**EARLEEN W SIZEMORE**
Public Service Comm. 2	**LAUREN MCDONALD, JR**
US Rep 13th District	**DAVID SCOTT**
State Senate 44th District:	**TERRELL A STARR**
State Rep. 50th District:	**GEORGANA SINKFIELD**
County Comm. Dist. 1	**CARL RHODENIZER**
Board of Education:	**ERICA DAVIS or SUE RYAN**

(CONTINUED)

Const. Ammend. 1	**YES**
Const. Ammend. 2	**YES**
Const. Ammend. 3	**YES**
Const. Ammend. 4	**YES**
Const. Ammend. 5	**YES**
Const. Ammend. 6	**YES**
Statewide Ref. A	**YES**
Statewide Ref. B	**YES**
Statewide Ref. C	**YES**
Statewide Ref. D	**YES**
Statewide Ref. E	**YES**



Usability Test Configuration
Diagram A

Appendix B

Certification Test Plan
Of the
AccuVote TSX Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX voting station, firmware version 4.5.2, will operate seamlessly in the Georgia Voting System. The precinct layout for these tests will be the same as the precinct layout presented in Appendix A, above.

Phase I: Interoperability:

The purpose of these tests is to verify that the AccuVote TSX voting station will operate seamlessly in the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX voting stations.
2. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX voting station will upload successfully into GEMS 1.18.22G.
3. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX voting station.
4. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations, AccuVote TSX voting stations, and AccuVote OS optical scan ballot scanners will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All AccuVote TSX voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX voting stations with firmware version 4.5.2 ,

one AccuVote OS ballot scanners with firmware version 1.94w, one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Phase IV: Security Tests

- Conduct vulnerability assessment of the AccuVote TSX voting station to determine open ports and known vulnerabilities.
- Develop recommendations for the storage and handling of TSX voting stations.

Hardware Definition

GEMS Computer

ExpressPoll 4000
5065012A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Voting Stations
204315
208152
223494
258838

Key Card Tool
Dell Notebook Computer

Absentee Ballot Scanner
40805

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix C

Certification Test Plan
Of the
AccuVote TSX Model D Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX, Model D, voting station using firmware version TSX 4.5.2, will operate seamlessly in the Georgia Voting System.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the AccuVote TSX Model D voting station with existing components of the Georgia Voting System.

5. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX Model D voting stations.
6. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX Model D voting station will upload successfully into GEMS 1.18.22G.
7. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX Model D voting station.
8. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations and AccuVote TSX Model D voting stations will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX – Model D voting station. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX Model D voting stations with firmware version TSX 4.5.2, and one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX – Model D voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Hardware Definition

GEMS Computer

ExpressPoll 4000
SOGS009A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Model D Voting Stations
262247
263480
263513
263515
276094
276137

Key Card Tool
Dell Notebook Computer

Software Definition

AVTS-R6	4.5.2
AVTS-TSX	4.5.2
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix D

Validation Test Plan
of the
Dell Power Edge Server
for use in the
Georgia Voting System

March 2008

Overall Objective: The purpose of these tests is to verify that the Dell Power Edge Server with Windows 2000, service pack 4 with all security and time zone updates as of 3/11/2008 will not affect the overall flow of program control or the manner in which ballots are recorded and the votes are processed in the Georgia voting system.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the Dell Power Edge Server with Windows 2000, service pack 4 with existing components of the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into the AccuVote TS-R6, the AccuVote TSX voting stations, and the AccuVote OS ballot scanner.
2. Verify that a mix of memory cards produced by closing the polls on AccuVote OS ballot scanners, AccuVote TS-R6 voting stations, and AccuVote TSX voting stations will upload correctly into GEMS 1.18.22G.
3. Verify modem transmissions between the AccuVote TS-R6, the AccuVote TSX, and the AccuVote OS and GEMS 1.18.22G.
4. Verify that GEMS 1.18.22G prepares all backup materials and all reports correctly using third-party software products.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The GEORGIA CERTIFICATION database will be use as the election setup for this test. This election setup consists of one federal office, two state offices, one county office, and two referendum questions.

The voting system tested will consist of one AccuVote TS – R6 voting station with firmware version 4.5.2, one AccuVote TSX – Model D voting station with firmware version 4.5.2, and one AccuVote OS ballot scanner with firmware 1.94w. ExpressPoll 4000s with firmware version 2.1.2 and card writer firmware version 1.1.4.0. will be used to produce voter cards.

The GEMS server employed will consist of a Dell Power Edge server with Windows 2000, service pack 4 running GEMS 1.18.22G.

Hardware Definition

GEMS Computer (1)
Dell Power Edge server
with Windows 2000, service pack 4
with all security and time zone updates
as of 3/11/2008

ExpressPoll 4000

AccuVote TS-R6 Voting Stations

AccuVote TSX Model D Voting Stations

AccuVote OS ballot scanners

Software Definition

Windows 2000	Service pack 4
AVTS-R6	4.5.2
AVTS-TSX	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
ExpressPoll 4000	2.1.2 with card writer 1.1.4.0

Test Participants – March 26, 2008

Brit Williams	Kennesaw State University
Michael Barnes	Kennesaw State University
Devin Pearson	Kennesaw State University

Kennesaw State University
College of Science and Mathematics
Center for Election Systems

March 28, 2008

Mr. Michael McCarthy, Director
Georgia Elections Division
Suite 1104, West Tower
2 Martin Luther King, Jr. Drive S. E.
Atlanta, Georgia 30334

Subject: Certification tests of the Dell Power Edge Server

The staff of the Kennesaw State Center for Election Systems conducted certification tests on during March 2008. These tests are described in the attached report titled *Certification Test of the Diebold Election Systems Voting System* dated March 28, 2008.

As a result of these tests the Dell Power Edge Server with service pack 4 were found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State.

Based on these findings, I recommend that the Dell Power Edge Server with service pack 4 be certified for use in elections in the State of Georgia.

If you have any questions or need additional information please contact me at 770-423-6900 or via e-mail at bwilliam@kennesaw.edu.

Very truly yours,

Britain J. Williams

Britain J. Williams, Ph. D.
Professor Emeritus

#2.14

Interim Certification Test of the

Integrated Solutions Area Imaging Bar Code Scanner: MK1690-38-12-ISI

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia 30144

May 6, 2010

Certification Test Plan
For the
Integrated Solutions Area Imaging Bar Code Scanner

Introduction

The purpose of this certification test is to evaluate the Integrated Solutions Area Imaging Bar Code Scanner (Scanner) model MK 1690-38-12-ISI for use in the State of Georgia in a pilot test during the May 2010 Special Election in Bartow County, Georgia. This certification is an interim certification that will expire on December June 30, 2010. The pilot test is to be conducted in the Pine Log precinct. The Test Plan for this certification is contained in the Appendix.

Conclusion

The Scanner and its intended use are in conformance with Official Code of the State of Georgia statutes related to voting machines and election administration and the applicable Rules of the State Election Board and Rules of the Rules of the Secretary of State of Georgia. The product conforms to commonly accepted standards for information technology products and documentation.

The Scanner successfully passed all tests in the Test Plan.

Product Description

Model Number: MK1690-38-12-ISI
Description: Area Imaging Bar Code Scanner with native decryption algorithm and ExpressPoll compatibility.
Includes:

- Honeywell Focus MS1690-38 Area Imager
- USB Cable
- Flex Stand
- MS1690 User's Guide
- Integrated Solutions software configurations to scan, decode, decrypt and parse Georgia Drivers License and state identification cards currently in use; and to provide a direct Plug-and-Play interface compatible with ExpressPoll®-5000 and ExpressPoll®-4000 units.

The Integrated Solutions Area Imaging Bar Code Scanner (Scanner) MS 1690-38, is manufactured for Honeywell then customized by Integrated Solutions International with a native decryption algorithm that makes the scanner capable of scanning and decrypting the bar codes used on contemporary and legacy Georgia Drivers Licenses.

The Scanner uses a low speed USB connection to interface with the Diebold/Premier ExpressPoll 4000 and 5000 electronic pollbooks. The Scanner comes with a 5' cable, with USB and RJ45 connectors and a gooseneck stand for the Scanner. The Scanner is capable of decoding 1D and 2D bar code symbologies.

The Scanner is intended for use with existing and future versions of the state-certified ExpressPoll electronic pollbook.

Overview of the Certification Test

The Scanner has been tested with the following configurations:

- ExpressPoll 4000, running ExpressPoll software version 2.1.2
- ExpressPoll 5000, running ExpressPoll software version 2.1.2
- The current voters list for the state of Georgia, including existing Drivers License numbers and voter registration numbers.
- Contemporary and Legacy Georgia Drivers Licenses

A total of six scanners were received for the test. Each scanner was tested for its ability to accurately and consistently recognize the following barcodes:

- Bar code 128. This is an industry standard bar code that is unencrypted. It is contemplated that this bar code format will be used in future applications of storing the voter registration number on the state-issued voter ID card. This code contains only numeric data
- Contemporary, 2D (PDF 417) unencrypted Georgia Drivers License bar code (issued starting Fall 2009)
- Legacy, 2D (PDF 417) encrypted Georgia Drivers License bar code

All six scanners successfully scanned the test bar codes and performed successful lookups using the connected ExpressPoll unit.

The ExpressPoll units recognized the connected scanners and were able to gracefully recover from failed or invalid search attempts.

Documentation

- Scanner operations and maintenance manual
- ExpressPoll Manual, v 2.1.3 (2009, KSU Center for Election Systems)

APPENDIX

Certification Test Plan
of the
Integrated Solutions Area Imaging Bar Code Scanner

Overall Objective

The purpose of the test was to verify that the MK1690-38-12-ISI scanner will operate with the currently configured and certified ExpressPoll 4000 and ExpressPoll 5000 electronic pollbooks.

Phase I: Interoperability

The purpose of these tests is to verify the interoperability of the Scanner with the ExpressPoll electronic pollbooks

1. Verify the Scanner interfaces with both models of ExpressPoll electronic pollbooks.

2. Verify the Scanner will scan various bar codes (including all known versions of the Georgia Drivers License bar code) and import the scanned Drivers License number and/or bar code value into ExpressPoll's record search function.

3. Verify that error conditions fail gracefully and do not compromise system functionality or stability

Phase II: Usability Testing

1. Simulate election-day use of the Scanner at a precinct.

2. Verify the accuracy of the Scanner and limitations on its ability (orientation, malformed target bar codes, distance from target, etc.).

3. Verified the Scanner works properly in hand-held and cradled configuration.

Hardware Definition

Integrated Solutions MK 1690-38 Scanner

- 7410030148
- 7410041434
- 7410041467
- 7410030478
- 7410020573
- 7410041534

ExpressPoll 4000

- SOGS008A
- SOGS010A
- SOGS011B

ExpressPoll 5000

- SOGV013A
- SOGV017A
- SOGV018A

Software Definition

ExpressPoll 2.1.2
Security Key 4.5+

Data Files

Voter registration list from 2009 municipal election in Atkinson County, Georgia. This file was modified to include Drivers License numbers from the state Voter Registration System.

Fwd: Barcode scanners

Wednesday, April 14, 2010 3:41:01 PM

From: mking@kennesaw.edu
To: wtailor@sos.ga.gov
Cc: mbarne28@kennesaw.edu

Wes - Here are our thoughts:

1. Barcode scanner functions and stores without damage or deterioration in temperatures between 45 and 140 degrees F and humidity less than 85%. This will conform to the voting system storage requirements.

2. Vendor make available for separate purchase, storage cases capable of storing two barcode scanners and two stands and accommodating a security seal (wire or plastic). The scanner comes in a cardboard box. This will not hold up over its lifetime (10 years+).

3. The Vendor provide a hash file of all embedded software resident to the scanner. This hash code can be used to validate the software if needed.

4. Clearly articulated RMA procedure, including both warranty and post-warranty periods.

5. Declaration of supply chain of all component suppliers.

6. Instruction manual for maintenance of unit (replacing cords, cleaning scanner glass, etc.)

7. Attestation of the software content of the unit. Some independent verification that what the vendor claims is on the scanner is in fact what is on the scanner, with no extraneous software.

8. Declaration of the expected service life of the scanner.

9. Barcode has extendable life, by permitting reprogramming of decryption algorithm to accommodate future changes in media formats.

10. Barcode scanner must be compatible with ExpressPoll 2.1.2 and be capable of accepting modifications to accommodate future versions of the ExpressPoll software.

11. Capable of reading encrypted was well an non-encrypted barcodes.

12. Provide the state with some number of units for testing (6?)

There are a couple of things that we need to discuss tomorrow, including a pilot project (maybe in Bartow) and how the DLs will be put into the ExpressPoll data file. This is an Epic issue.

- Merle
----- Forwarded Message -----
From: "Wesley Tailor" <wtailor@sos.ga.gov>
To: "mking@kennesaw.edu" <mking@kennesaw.edu>
Sent: Wednesday, April 14, 2010 11:36:15 AM GMT -05:00 US/Canada Eastern
Subject: Barcode scanners

I am working on a request for quotes for the barcode scanners. Can y'all look through these and let me know if see anything that is wrong or needs adjustment? You'll see that some are italicized and underlined; these are the ones about which I am unsure. If you have any insight, that would be very helpful.

Required Specifications:

Delivered with all necessary components, including USB cabling

Loaded with necessary software, including any and all parsing algorithms, prior to final delivery

Plug-and-play

Must be able to be implemented without any additional technologies, software, information systems or hardware needing to be installed after delivery

USB barcode scanner - this has the advantage that it does not need any code or program for transferring input data to the application program; when you scan the barcode its data is sent to the computer as if it had been typed on the keyboard
Compatible with and able to automatically transmit transaction information onto ExpressPoll®-5000 and ExpressPoll®-4000 units

Functions independently of ExpressPoll®-5000 and ExpressPoll®-4000 units with no alteration of ExpressPoll software or operating systems

Able to read all variations of Georgia driver's license and state identification card currently in use, including encrypted bar codes and differing types of documents with differing placement of barcode

Sturdy, reliable construction

Easy to use, with very limited training requirements

Ability to send the number from a driver's license or state identification card to ExpressPoll®-5000 and ExpressPoll®-4000 units for look-up *(can we have ability to send name information as well for voters with no dl# associated with registration?)*

Allows for omni-directional scanning

Uses multi-line rastering scan pattern, or equivalent technology, thereby eliminating the need for exact aiming and positioning

Functions in hands-free (fixed location) capacity

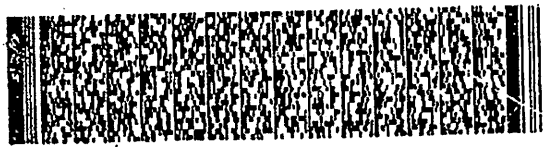
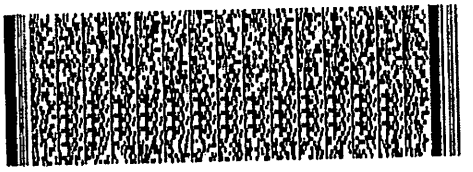
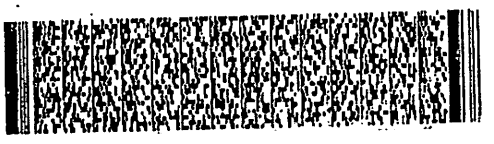
Provides notification and/or warning tone for inaccurate barcode reading

Size:	no larger than 8 inches x 5 inches x 4 inches
Weight:	no heavier than 1 pound
Image:	acceptable range is at least *1280 x 512 pixel array*
Working range:	acceptable range is 0 inches (Near), 17 inches (Far)
Skew Angle,	*Acceptable Range: ±40°*
Pitch Angle,	*Acceptable Range: ±40°*
Horizontal Velocity:	*2.5 in / Sec*
Durability:	drop and shock resistant; must be operational after *50* drops from 5 feet on concrete; 85,000 Hours or more
Vibration,	*Withstands 5G peak from 22 to 300 Hz*
ESD Protection,	*Functional after 100 15KV discharges*
Temperature range:	must operate within minimum range of 0° to 40° Centigrade
Humidity range:	must operate, non-condensing, within minimum range of 0 to 95%
Ambient Light:	must operate within minimum range of total darkness to 100,000 LUX
Certification:	EMC Class B, IEC60825-1, LED Safety: Class 1
Interface:	USB
Warranty:	at least 3 years replacement warranty

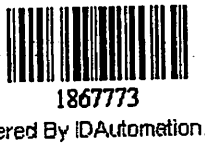
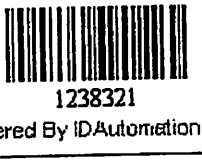
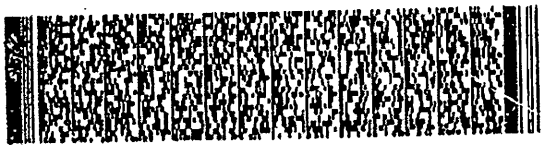
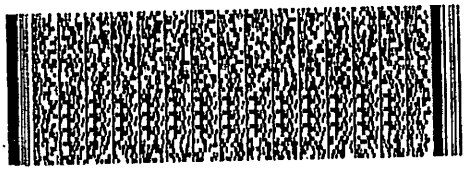
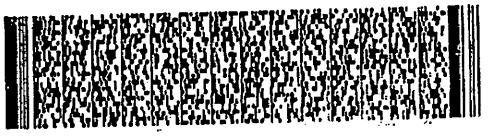
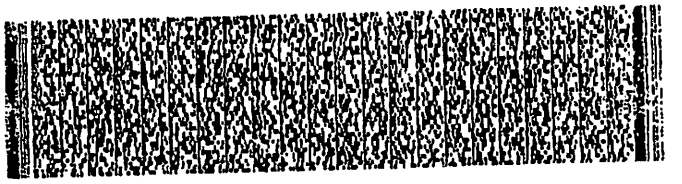
Thanks much,

Wesley B. Tailor
Assistant Secretary of State, Elections Division
Georgia Secretary of State Brian P. Kemp
2 Martin Luther King, Jr. Drive S.E.
West Tower, Suite 1104
Atlanta, Georgia 30334
404-656-2871 (main)
404-657-0699 (direct)
678-717-6871 (fax)

Bar Code Scanner Acceptance Test Samples v 1.0, 2010.

	Barcode	Voter	Voter Reg #	Vote Center
1.		Paul Fink	1867773	078021
2.		Larry Reynolds	1238321	078021
3.		Judith Preissle	859955	078021
4.		James Tompkins	859193	078021
5.		Walter Richard Nixon	858189	078021
6.		Albert C. Swearingen	126521	088009
7.		Stephen Ray Coomes	2198935	078021

Bar Code Scanner Acceptance Test Samples v 1.0, 2010.

	Barcode	Voter	Voter Reg #	Vote Center
1.		Paul Fink	1867773	078021
2.		Larry Reynolds	1238321	078021
3.		Judith Preissle	859955	078021
4.		James Tompkins	859193	078021
5.		Walter Richard Nixon	858189	078021
6.		Albert C. Swearingen	126521	088009
7.		Stephen Ray Coomes	2198935	078021

6/21

Call with L1/ISI

1) Honeywell is working on documentation for RMA

2) Shipping & Delivery

Target Date for completion of Memm = July 9.

~~Shipped~~

Air freight

July 16 - Arrival

All or none

	Barcode	Voter	Voter Reg #	Vote Center
1.	 1867773 Powered By IDAutomation.com	Paul Fink	1867773	078021
2.	 1238321 Powered By IDAutomation.com	Larry Reynolds	1238321	078021
3.	 1332139 Powered By IDAutomation.com	Julie Wilson	1332139	078021
4.	 859746 Powered By IDAutomation.com	Janie Youngblood	859746	078021
5.	 649950 Powered By IDAutomation.com	Rachelene Buckner	649950	080005
6.	 3275472 Powered By IDAutomation.com	Robert Kirby	3275472	080005

May 5, 2010

To: Hon. Brian Kemp
Secretary of State of Georgia

From: Merle S. King
Executive Director, Center for Election Systems

Re: Provisional Certification Report, Integrated Solutions Area Imaging Bar Code Scanner

Product Description

Model Number: MK1690-38-12-ISI
Description: Area Imaging Bar Code Scanner with native decryption algorithm and ExpressPoll compatibility
Includes:

- Honeywell Focus MS1690-38 Area Imager
- USB Cable
- Flex Stand
- MS1690 User's Guide
- Integrated Solutions software configurations to scan, decode, decrypt and parse Georgia Drivers License and state identification cards currently in use; and to provide a direct Plug-and-Play interface compatible with ExpressPoll®-5000 and ExpressPoll®-4000 units.

The Integrated Solutions Area Imaging Bar Code Scanner (Scanner) MS 1690-38, is manufactured for Honeywell then customized by Integrated Solutions International with a native decryption algorithm that makes the scanner capable of scanning and decrypting the bar codes used on contemporary and legacy Georgia Drivers Licenses.

The Scanner uses a low speed USB connection to interface with the Diebold/Premier ExpressPoll 4000 and 5000 electronic pollbooks. The Scanner comes with a 5' cable, with USB and RJ45 connectors and a gooseneck stand for the Scanner. The Scanner is capable of decoding 1D and 2D bar code symbologies.

The Scanner is intended for use with existing and future versions of the state-certified ExpressPoll electronic pollbook.

Certification Tests

The Scanner has been tested with the following configurations:

- ExpressPoll 4000, running ExpressPoll software version 2.1.2
- ExpressPoll 5000, running ExpressPoll software version 2.1.2
- The current voters list for the state of Georgia, including existing Drivers License numbers and voter registration numbers.
- Contemporary and Legacy Georgia Drivers Licenses

A total of six scanners were received for the test. Each scanner was tested for its ability to accurately and consistently recognize the following barcodes:

- Bar code 128. This is an industry standard bar code that is unencrypted. It is contemplated that this bar code format will be used in future applications of storing the voter registration number on the state-issued voter ID card. This code contains only numeric data
- Contemporary, 2D (PDF 417) unencrypted Georgia Drivers License bar code (issued starting Fall 2009)
- Legacy, 2D (PDF 417) encrypted Georgia Drivers License bar code

All six scanners successfully scanned the test bar codes and performed successful lookups using the connected ExpressPoll unit.

The ExpressPoll units recognized the connected scanners and were able to gracefully recover from failed or invalid search attempts.

Constraints

Because of the short lead time for a scheduled pilot project (Bartow County, Pine Log Precinct, May 11, 2010), some portions of the state certification test were abbreviated. After completion of the pilot project, the following items must be addressed:

- Thorough review of the pilot project data, including any anomalies that occur during the 12 hours of operation in the precinct
- Larger scale test of the scanner in multiple election scenarios, including municipal elections
- Review of the supply chain, spare parts availability, maintenance constraints, training materials and other manufacturer related issues
- Storage case solutions
- Further testing with voter ID card prototypes

Conclusion

The Scanner and its intended use are in conformance with Official Code of the State of Georgia statutes related to voting machines and election administration and the applicable Rules of the State Election Board and Rules of the Rules of the Secretary of State of Georgia. The product conforms to commonly accepted standards for information technology products and documentation.

Re: Bar Code Scanners? Thursday, June 10, 2010 1:00:54 AM

From: jcampbell@windstream.net

To: mking@kennesaw.edu

Merle,
I am going out of town tomorrow so I forwarded your email to Donna Bomar. She is already aware of the need to return asap but I want to make sure that she does not wait until I get back on Monday.

Workers loved them. Since they only voted about 300 (in Ringgold) they were an interesting diversion in an otherwise boring day. For the most part they worked well. Some licenses were too dirty or worn for them to scan. Of course most were not in the system. I don't think any voters objected and at all of our precincts, the workers gathered license numbers from everyone who used a license as their photo I.D. We are now in the process of updating the "GO" system so hopefully the bar code scanners will be approved and we will be ahead of the curve. Everyone agreed that they would eliminate the bottleneck at the express polls when the percentage of license numbers in the system increases. This could eliminate the need to purchase additional express polls and would eliminate the need for the third express poll person in some of our busier precincts in the big elections effecting an immediate savings on labor.

I asked our poll workers to make notes throughout the day and will have Donna forward those along as well.

Thanks for the opportunity to be a part in improving elections in GA.

John C.

Merle S. King wrote:

> Charlotte and John - How did the bar code scanner pilot go last nite? Well, I hope.
>
> I will need the scanners and a report from you ASAP. We need to finished the certification testing and those are the only scanners we have ;)
>
> Thanks!
>
> - Merle
>
> --
> Merle S. King
> Executive Director
> Center for Election Systems
> 1000 Chastain Road, MD#5700
> Kennesaw State University
> Kennesaw, GA 30144
> Voice: 770-423-6900
> Fax: 770-423-6905

HALL COUNTY
BOARD OF ELECTIONS & VOTER REGISTRATION
P O BOX 1435
GAINESVILLE GA 30503
(770) 531-6945
FAX: (770) 531-3931

June 8, 2010

RE: Scanning Pilot Project

Wes Tailor, Director
Elections Division
Suite 1104 West Tower
2 Martin Luther King Jr. Drive
Atlanta, GA 30334-1505

Dear Mr. Tailor:

We had a very privileged and rewarding opportunity to participate in the Scanning Pilot Project provided by KSU Center for Elections and the Secretary of State's Office for the Special Runoff Election on June 8, 2010. In this project, the Friendship I Voting Precinct with 4,551 voters; 54% driver's license number data and 454 voters appearing at the polling location, approximately 40% of the IDs were successfully scanned.

There are some interesting facts that I would like to share of this experience:

(1) Some of the older licenses did not scan;
(2) If totally dependent on the scanner, other forms of acceptable IDs should be included in the scanning process;
(3) Some of the driver's licenses would not scan in its stationary position; we had to press the button to scan the ID;
(4) Most new licenses did scan successfully;
(5) Voters are processed much quicker with a successful scan;
(6) Barcodes on the driver's licenses that were defected, scratched, worn or even rubbed off did not scan successfully;
(7) The voters like the idea of the scanner; there were no complaints.

Thank you for allowing Hall County to participate in this project.

Should you have any questions, or need additional information, please contact me.

Sincerely,

Charlotte Sosebee
Interim Director of Elections

cc: Ann Hicks, Elections Administration Manager
Michael Barnes, KSU Center for Elections
Vonda Edwards, Chief Clerk to Elections

BARTOW

BOARD OF ELECTIONS AND REGISTRATION

Pilot Test Report
Of the
Integrated Solutions Area Imaging Bar Code Scanner: MK1690-38-12-ISI

Prepared For:

Elections Division
Office of the Secretary of State
State of Georgia

&

Center for Election Systems
Kennesaw State University

Prepared By:

Joseph Kirk
Bartow County Elections Supervisor

May 14, 2010

Pilot Test Report
Of the
Integrated Solutions Area Imaging Bar Code Scanner

Introduction

The purpose of the pilot test was to assess the use of the Integrated Solutions Area Imaging Bar Code Scanner model MK 1690-38-12-ISI (Bar Code Scanner) with the Express Poll 4000 as well as the Express Poll 5000 in a live election environment. This test was performed during Bartow County's May 11, 2010 Special Election in the Pine Log Polling Place.

Conclusion

The two Bar Code Scanners performed as designed and were extremely easy for the poll workers to use. It is my professional opinion that after the Bar Code Scanners are implemented and a systematic effort is made to collect and verify the driver's license numbers of a large percentage of the State of Georgia's registered voters, the Bar Code Scanners will dramatically improve the average time it takes to check in a voter at a polling place.

Equipment

The equipment utilized during the test was:

1. Two (2) Integrated Solutions Area Imaging Bar Code Scanners model MK 1690-38-12-ISI (Bar Code Scanner) on the included Flex Stands
2. One (1) Express Poll 4000
3. One (1) Express Poll 5000

The two Express Polls were networked together using a standard crossover cable as is normal when two Express Polls are used in a polling place. Each of the Express Polls had one of the Bar Code Scanners attached through an available USB port. There was no noticeable difference in either the operation or performance of either Bar Code Scanner, although each was attached to a different model of Express Poll.

Training

The Poll Manager of the Pine Log Polling Place was trained on the operation of the Bar Code Scanners prior to Election Day. The training session included how and when to attach the Bar Code Scanner to the Express Poll, how to operate the Bar Code Scanner to search for an elector, and known issues with the operation of the Bar Code Scanner and mitigating steps to avoid these issues.

The Poll Workers who utilized the Bar Code Scanners received training on how to operate the Bar Code Scanner to search for an elector, and the procedural steps of operating the Express Poll when the Bar Code Scanner is attached prior to the polls opening on Election Day. They were not trained on how to set up the Bar Code Scanners, or on the known issues with the Bar Code Scanners.

Operation

The Poll Workers set up the Bar Code Scanners on their Flex Stands and connected them to the Express Polls perfectly, with no training on how to accomplish the task. After the poll place opened, they operated the scanners perfectly (again with very little training) and used the procedural steps to avoid any known issues. The only time one of the Express Polls rebooted because of a "Serious Error" (one of the two known issues) was during the afternoon when the poll workers asked why they had to press the "Clear" button between each voter and the Election Supervisor, Joseph Kirk, demonstrated the reason why to them on the Express Poll 5000.

The Bar Code Scanners were used on the both the contemporary as well as legacy 2D bar codes utilized by the Georgia Department of Driver Services. They worked well on both types.

A total of fifty-nine (59) electors were checked in using the two Express Polls. Of those fifty-nine (59), fifty-seven (57) produced a Georgia Drivers License while the other two (2) produced Identification Cards issued by the State of Georgia. At least one of the Drivers Licenses had been issued after the Georgia Department of Driver Services began issuing a new format of Drivers License earlier this year. Of the Drivers Licenses that were produced, twenty-four (24) of them were matched to an elector's record contained on the Express Poll's database when they were scanned, and twenty-eight (28) of them were not matched to an elector's record. The other five (5) could not be removed from the elector's wallet. Neither of the State Issued Identification Cards were successfully matched to an electors' record, although one of the electors does have a driver's license number on file in the Voter Registration System. A listing of each voter who was checked in using the Bar Code Scanners, the type of identification that the voter provided, and whether or not the Express Poll was successful in matching the number provided by the Bar Code Scanner to the voter's record in the Express Poll is included as Appendix A.

Election Day Issues

At 12:50 PM the poll worker using the Express Poll 4000 attempted to scan Donna Scoggins' Driver's License and the Express Poll displayed the standard message explaining that the Driver's License number was not located. When the Poll Worker touched "OK" on the message box, the Express Poll promptly rebooted. No indication was given by the Express Poll why it rebooted.

Observations

1. For the Bar Code Scanners to have a positive impact on the operation of the polling places in the State of Georgia, we will need to ensure that a large percentage of the registered voters in the State of Georgia have their driver's license (or state ID card) number associated with their voter record in the statewide voter registration system. Furthermore, we will need to verify the correct driver's license (or state ID card) number is associated with each elector.
2. It is imperative that the voters are instructed to remove their driver's license from their wallets prior to approaching the Express Poll Station. Signs could be used to accomplish this task.
3. It was definitely easier for the poll workers to use the Bar Code Scanners while they were in the flex stands, rather than holding the Bar Code Scanner in one hand and the elector's ID in the other.
4. The older the ID is, the harder it is for the Bar Code Scanner to read it. In many cases this is due to the fact the bar code on the back of the elector's drivers license has smeared. However, the larger the bar code was the harder it was to get the Bar Code Scanner to read it (this held true both while the scanner was mounted in the flex stand as well as when it was held in a poll worker's hand).
5. Any training on the Bar Code Scanners should include a step to verify that the Bar Code Scanner located the correct elector's record.

Appendix A

#	First Name	Last Name	Type of ID	Matched?	Notes
1	GAIL	MOSS	GA DL		COULD NOT REMOVE LICENSE
2	JODY	ELROD	GA DL	NO	
3	RANDALL	COBB	GA DL	YES	
4	MARVIN	NALLY	GA DL	NO	
5	DOROTHY	NALLY	GA ID CARD	NO	
6	JAMES	MULLINAX	GA DL	YES	
7	KENNETH	CANNON	GA DL	NO	
8	J.R.	ELROD	GA DL	YES	
9	MICHAEL	BARR	GA DL	YES	
10	JANICE	RIDER	GA DL	YES	
11	W.L.	RIDER	GA DL	NO	
12	EVELYN	CAGLE	GA DL		COULD NOT REMOVE LICENSE
13	JAMES	GRIFFITH	GA DL		COULD NOT REMOVE LICENSE
14	JOHN	PITNER, JR	GA DL	NO	
15	SABRINA	ELROD	GA DL	NO	
16	MITCHELL	SCOGGINS	GA DL	NO	
17	JONATHAN	ELROD	GA DL	YES	
18	PATSY	ALLEN	GA DL	NO	
19	ROGER	LOGHRY	GA DL	NO	
20	FAYE	NALLY	GA DL		COULD NOT REMOVE LICENSE
21	AMANDA	SANFORD	GA DL		COULD NOT REMOVE LICENSE
22	LULA	LIPSCOMB	GA DL	YES	
23	ROBERT	LIPSCOMB	GA DL	YES	
24	GARY	STEWART	GA DL	NO	
25	WILLIAM	MARTIN	GA DL	NO	
26	DONNA	SCOGGINS	GA DL	NO	
27	BARBARA	WALKER	GA DL	YES	
28	ROBERT	TANNER	GA DL	NO	BAR CODE WORN ON DL
29	DAVID	BENNETT	GA DL	YES	
30	ANDREW	ELROD	GA DL	YES	
31	JOYCE	ATCHLEY	GA ID CARD	NO	
32	KENNETH	CANNON JR	GA DL	YES	
33	GORDON	CANNON	GA DL	YES	
34	RAYMOND	HENSON JR	GA DL	YES	
35	PATRICIA	LEMONS	GA DL	NO	
36	ROGER	MOSS	GA DL	NO	
37	FREDDIE	MORRIS	GA DL	NO	
38	DERRICK	EVANS	GA DL	NO	
39	EDDY	ANDERSON	GA DL	YES	
40	DAVID	VAUGHAN	GA DL	NO	
41	CARIE	TIDWELL	GA DL	YES	
42	THOMAS	TIDWELL	GA DL	YES	
43	KENNETH	TAYLOR	GA DL	NO	
44	SANDRA	NALLY	GA DL	YES	
45	ROBERT	SIMS	GA DL	NO	

46	ELEANOR	SIMS	GA DL	NO	
47	TIMOTHY	MARTIN	GA DL	NO	
48	GAIL	COBB	GA DL	YES	
49	THOMAS	ANGLIN	GA DL	YES	
50	MARK	SCOGGINS	GA DL	NO	
51	JOHN W.	SMITH	GA DL	YES	
52	BARBARA	SMITH	GA DL	YES	
53	RUTH	THORNTON	GA DL	NO	
54	TONY	ATCHLEY	GA DL	NO	
55	JAMES	MARTIN	GA DL	NO	
56	PAMELA	POTTER	GA DL	NO	
57	JAMES	BALLARD	GA DL	YES	
58	JAMES	SMITH	GA DL	NO	
59	KIMBERLY	BRAMLETT	GA DL	YES	

#2.6 #2.13

Certification Test of the

TSx Direct Record Electronic Voting System, Ballot Station 4.5.2! and WinCE 410.3.5

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia 30144

April 1, 2015

Certification Test Plan
For the
TSx DRE running Ballot Station 4.5.2! and WinCE 410.3.5

Introduction

During the Logic and Accuracy testing of the November 2014 General Election ballot, it was noted that some TSx units failed to complete the printing of the summary report. The units would discontinue printing when a specific race in the election was encountered. The anomaly did not impact the long report version of the pre- and post-election tapes, nor did it impact vote capture or vote tabulation.

The anomaly was traced to a buffer interrupt issue within the installed version of the Windows operating system on the DRE: WinCE 410.3.4. Tests at the Center for Election Systems and at Election Systems & Software (ES&S) confirmed the presence of the error in the interrupt handling routines of WinCE 410.3.4. This anomaly was addressed in a subsequent release of WinCE: WinCE 410.3.5.

When the operating system was updated to WinCE 410.3.5, the anomaly no longer manifested itself. No modifications to the TSx application, Ballot Station 4.5.2! or to the TSx hardware or firmware were required. The TSx units were tested separately and as part of the overall voting system.

Subsequent tests, including a pilot test in Rabun County during the March 17, 2015 election, indicate that the interrupt handling routines are executing properly and that the application software, operating system, hardware, and functionality of the DRE are consistent with Georgia statutes, rules, and regulations regarding voting system components.

Conclusion

The TSx DRE, with Ballot Station 4.5.2! and WinCE 410.3.5 installed, is in conformance with Official Code of the State of Georgia statutes related to voting machines and election administration and the applicable Rules of the State Election Board and Rules of the Secretary of State of Georgia. The source code, updated version of the operating system and related documentation, is consistent with industry standards and is held in escrow at the Center for Election Systems, Kennesaw State University.

The TSx successfully passed all tests in the Test Plan, including the March 17, 2015 election pilot test in Rabun County, Georgia.

Product Description

TSx Direct Record Electronic (DRE) Voting System Unit

- D Tablet
- Ballot Station 4.5.2!
- WinCE 410.3.5
- PCMCIA Memory Card

The TSx DREs used in the test were manufactured by Diebold, Inc. and Premier Election Solutions between 2006 and 2008. All units used were purchased from Premier Election Solutions or ES&S. Memory cards were acquired at purchase and are the standard PCMCIA cards used throughout the state of Georgia. The install program, provided by ES&S, contained an installer and the certified version of Ballot Station 4.5.2!, associated SSL certificate, and WinCE 410.3.5. The install program was validated by comparing hash signatures.

The preparation of election databases and subsequent tabulation of the memory cards was done on a certified and acceptance tested installation of GEMS 1.18.22G!

Overview of the Certification Test

The DRE was tested with the following configurations:

- ExpressPoll 4000, running ExpressPoll software version 2.1.2
- ExpressPoll 5000, running ExpressPoll software version 2.1.2
- The November 2014 voters list for the state of Georgia, including existing Drivers license numbers and voter registration numbers
- Premier Election Solutions TSx units (D tablet), running Ballot Station 4.5.2! and WinCE 410.3.5
- Vision Server, Windows 2000 SP 4, running GEMS 1.18.22G!

Seven (7) TSx DRE units were prepared for the test with validated versions of the Ballot Station 4.5.2! and WinCE 410.3.4 installed. All software was validated through hash signature comparisons. The units were acceptance tested to ensure they conformed to the state certified version. All units passed the state of Georgia DRE acceptance test. Memory cards were prepared with the November 2014 General Election database, used in Gwinnett County.

All units manifested the error condition when attempting to print the summary report.

The DREs were then upgraded to WinCE 410.3.5. All units were acceptance tested and passed. The Certification Tests were repeated. No units manifested errors – all reports were properly initiated and completed.

The units were then downgraded to WinCE 410.3.4 and all tests repeated. All units manifested the error condition.

All units were then upgraded to WinCE 410.3.5 and all tests repeated. No errors were manifested.

The Center staff reviewed testing documentation and results provided by ES&S. All KSU testing methods and test results were compared with those provided by ES&S. The testing at ES&S confirmed the results and conclusions of those tests performed by the Center at KSU.

ES&S Documentation

- Communication Port Interrupt Analysis
- Test Cases: Regression Testing
- Test Cases: Test Run
- System Test Plan

APPENDIX A

Certification Test Plan
of the
TSx DRE with Ballot Station 4.5.2! and WinCE 410.3.5

Overall Objective

The purpose of the test was to verify that 1) an updated version of the DRE's operating system (OS) would correct a printing anomaly; 2) the updated version of the OS had no negative impact on the functionality of the DRE; and 3) the updated DRE worked properly with the rest of the certified voting system.

Phase I: Functionality

The purpose of these tests is to verify that the updated version of the OS permitted the DRE to perform all required DRE functions: vote capture, tabulation, and report printing.

1. Verify that all DREs used in the test pass Georgia's DRE acceptance test.
2. Verify that all DREs used in the test will consistently manifest the printing anomaly when running Ballot Station 4.5.2! and WinCE 410.3.4.
3. Update the DRE OS to WinCE 410.3.5.
4. Verify that the updated DREs pass the Georgia DRE acceptance test.
5. Load November 2014 General Election ballots onto clean memory cards from GEMS 1.18.22G! server.
6. Install memory cards and load elections on DREs.
7. Check summary reports and long reports
8. Vote a set of Logic and Accuracy (L&A) pattern ballots (every position on the ballot, including blank ballots are voted) using standard user interface.
9. Vote L&A ballot set using VIBs (vision impaired ballot) kit.
10. Vote L&A ballot set in magnified screen setting.
11. End the election and verify correct DRE reports
12. Upload memory cards to server and tabulate.
13. Compare vote totals on DREs and Server-generated reports.
14. Restore DREs to 410.3.4 OS.
15. Repeat steps 1 through 13.

Phase II: Interoperability

1. Test DREs with voter access cards created on a DRE.

2. Test DREs with voter access cards created by an ExpressPoll running EZRoster 2.1.2.

3. Test DREs with GEMS servers

4. Test DREs with VIBs kit.

Phase III: Pilot

Fifteen (15) TSx DREs were upgraded to WinCE 410.3.5 and used in the March 17, 2015 election in Rabun County. All units were acceptance tested and all units performed correctly during Logic and Accuracy testing, advanced voting, and Election Day.

Hardware Definition

TSx DREs

- 262912
- 271708
- 280273
- 286367
- 289097
- 289618
- 295211

ExpressPoll 5000

- SOGV013A

Vision Server

- 2138650

Georgia Voter Access Cards

All hardware and software use in this test were Acceptance Tested.

Software Definition

ExpressPoll 2.1.2
Security Key 4.5+
Ballot Station 4.5.2! with WinCE 410.3.4
Ballot Station 4.5.2! with WinCE 410.3.5
GEMS 1.18.22G!

Data Files

The Georgia Acceptance Test Database
State of Georgia Voter Registration List implemented on ExpressPoll
November 2014 General Election database for Gwinnett County

#2.2, [redacted] #2.4 #2.5 [redacted] #2.10

NASED

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22	GEMS 1-18-22	AccuVote OS Central Count, Firmware version 2.0.12 (2002) VCProgrammer 4.1.11 (2002)	N-1-06-12-12-005 (1990)	9/17/2004
Diebold	GEMS 1-17-23	GEMS 1-17-23	AccuVote OS Central Count, Firmware version 2.0.12 VCProgrammer 4.1.11	N-1-06-12-12-006 (1990)	9/17/2004
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2	N-1-06-12-12-007 (1990)	1/26/2005
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote TS Precinct Counter Rev 6 Version 1.0.2 Windows CE 3.0 Firmware Version 4.5.2 Express Poll 4000 1.1.5	N-1-06-12-12-009 (1990)	7/7/2005

EXHIBIT 10

Blumberg No. 5208

NASED

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22 & GEMS 1-18-22G	GEMS 1-18-22 & GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2 AccuVote-TSx Precinct Counter Bootloader BLR7-1.2.1 running WCER7-410.2.1 Firmware version 4.6.4 AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 running Windows CE 3.0 Firmware version 4.6.4 AccuVote-OS Precinct Count 1.96.6 Key Card Tool 4.6.1 Express Poll 2000	N-1-06-12-22-010 (1990)	9/21/2005

#27

Product Review

EasyVote v3.4

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia 30144

September 3, 2013

Review of
EasyVote v3.4

Introduction

The purpose of this product review is to evaluate the functionality of the product and to provide adequate information to determine whether the functions performed by EasyVote v3.4 should be considered part of the certified voting system of the State of Georgia.

Conclusion

EasyVote v3.4 performed adequately the first two areas of testing: scanning a Georgia driver's license and completing forms with OCR data, and matching the scanned data to an existing voter registration record. The subsequent tests on system robustness and accuracy of documentation produced mixed results.

The robustness and usability of EasyVote v3.4 does not generally comply with industry best practices and the system contains errors in both the documentation and software. The system lacks adequate definition of end-user physical procedures required for the effective use of the system. Successful use of EasyVote v3.4 is dependent upon data services provided by the Elections Division of the Office of the Secretary of State as well as by the vendor. End-user satisfaction is good, but effectiveness of EasyVote v3.4 may not be easily scalable to larger counties. The lack of a training environment within the application requires end-users to learn the system on live data – a process that introduces some risk into the adoption of the system.

EasyVote v3.4 does not interface the voting system. The voter has no direct interaction with EasyVote v3.4. Counties that adopt EasyVote v3.4 must ensure adequate physical controls exist to ensure that voters receive the correct ballot.

Product Description and Hardware Definition

Software Version: 3.4
Description: EasyVote voter lookup with absentee ballot application printing.
Requires:

- Windows 7 or later based laptop or desktop computer
- Driver's license scanner
- Printer
- .NET Framework 4.0
- Voter file from SOS

Hardware used in product review (provided by vendor):

- Dell Inspiron One desktop computer w/wireless keyboard and mouse
    - S/N CN-0392R8-74767-12C-7LK4
- Scan Shell 800R card scanner
    - S/N 1042003000175

- Dymo LabelWriter 450
  - S/N 1750283-2081720

Test Plan

1. Test driver's license scanner for accurate and complete OCR output
2. Verify driver's license data properly matched to voter file data by EasyVote
3. Test general functionality and use of buttons and menu options throughout system
4. Compare documentation (manuals and website) to product provided by the vendor

Issues encountered

Issues encountered while performing operations as documented in the EasyVote user manual:

1. Inconsistent version numbers referenced throughout manual and website, which could cause user confusion and hinder support when version numbers are required.
   a. Version listed as "3.4" on cover of manual and within EasyVote software
   b. Version listed as "3.1" in website screenshot in manual
   c. Version listed as "3.1" and "3.2" on website download screen
   d. Version listed as "1.0.0.0" in screenshots of EasyVote main window in manual
2. Imprecise and ambiguous statements used throughout user manual.
   a. "Not a show stopper"
   b. "Plenty of red but no real problems"
   c. "You can of course ignore all of the alerts and print the forms as needed"
3. Several major errors on PDF application for voter registration including
   a. "STATE OF GEORGIA APPLICATION FOR VOTER **REGISTRATI**"
   b. "Must provide last 4 digits of your Social **Seciruty** Number"
   c. "O.C.G.A. **%** 21-2-256"
   d. "I am not serving a **sertence** for having..."
   e. "...declared to be mentally **invompetent**."
   f. "...please provide your **e-amil** address"
4. Typos and truncations on provisional voter's certificate including
   a. "...that I am **elibible** to vote..."
5. Undocumented error states in EasyVote software
   a. Red flashing around driver's license after scanning
6. Unclear reason for "Save Changes" action in provisional ballot processing, which may contribute to user confusion
7. Clicking certain buttons within EasyVote causes the software to terminate with undocumented errors, including but not limited to:
   a. In EasyVote tab: Search Reg#
      i. "Object reference not set to an instance of an object"
   b. In EasyProvisional tab: "Print label"
      i. "Sequence contains no matching element"
   c. In EasyAbsentee tab: "Edit App"
      i. "Object reference not set to an instance of an object"
8. Substantial number of typographical errors in user manual

9. User manual prescribes use of ExpressPoll driver's license scanners not accounted for by ExpressPoll testing nor SOS documentation of intended use of the scanners
    a. P. 28 of the user manual: "The barcode can be read by the scanner attached to the Express Poll machine"

User Survey

Nine Georgia counties were surveyed (Appendix A) because of their familiarity with the EasyVote system. Surveyed counties were generally positive about the use of the EasyVote system; however, no county surveyed used all features offered. Several larger counties discontinued the use of EasyVote after it was deemed inefficient for their time needs, or because of a lack of a training environment, and one county stated that incorrect ballots were given to voters because needed manual procedures had not been in place in the early use of EasyVote. While the issuance of incorrect ballots was not the fault of the EasyVote system, the event underscores the need for a review and assessment of in-office procedures prior to adoption.

Dependencies

Continued effective deployment of EasyVote v3.4 is dependent upon services performed by the IT department of the Georgia Office of the Secretary of State and by the vendor in the preparation and uploading of voter registration files for use with the system. Factors that impact the continued preparation of voter registration files should be assessed.

APPENDIX A

County Surveys

COUNTY 1

Center for Election Systems
August 2, 2013

EasyVote Telephone Survey

The purpose of this survey is to collect feedback from Georgia counties that have used the EasyVote product, and to use the feedback as input to the Product Review process.

1. **Historical**
   a. How long have you been using EasyVote? How many elections?
      We implemented EasyVote in June, 2010, in time for In-Person Early Voting for the July Primary. We've used it in every election since (10)
   b. Do you use a standard absentee application or was a custom application created for your county?
      We use the standard state application and EasyVote populates the fields.
   c. How many absentee voters are run through the EasyVote system in an election?
      17,196 voters were processed using EasyVote for the November 6, 2012.
2. **Installation**
   a. Was your office responsible for providing the hardware required for the system?
      We used our laptops, but we bought the barcode scanners and the GADL scanners from EasyVote.
   b. Are you running the EasyVote software on a computer with other county software?
      Yes
   c. How many installations of the EasyVote system do you maintain during an election?
      Depends on the size of the election; we used five "in person" licenses for the November 6, 2012 General. We also had two "absentee mail-out" licenses for mailing applications.

3. **Issues**
   a. Have you had any issues retrieving voter files coming from the state?
      We used our own ftp daily download from the state and it worked well.
   b. Have you had any issues with voter information accuracy when presented by the EasyVote system?
      It's important for the user to verify that the DL scanner has picked up the correct voter. There were cases when an incorrect voter was selected. I had poll workers initial the form showing they verified the name. We also had the voter verify before signing. One day our scanner was really having issues, so workers used the search for the voters by keying in the name...probably more accurate.
   c. Have you had any resistance or complaints from voters about scanning a voter's driver's license?
      None. Everyone loves not having to fill out the application!
   d. Have you had any issues scanning driver's licenses? Any other known issues?
      As I mentioned in #3b, users must be careful to verify the proper voter has been selected.
   e. Have you required any service or support from the vendor? Have you had any issues regarding their support?

Yes, we have needed support and, so far-so good.

4. **Lessons Learned**
   a. What advice would you give to a county considering implementing the EasyVote system?
   A system is still only as good as the human using it. It is extremely important that each user verify each step to make sure they are processing the correct voter. It makes the in-person voting process very smooth and the voters love it.
   b. What lessons have you learned – what would you have done differently?
   Check, and then double-check each application to make sure you have the proper voter.

   We did not use the mail-out function of EasyVote-too many steps and double work. However, this software is great for printing or emailing applications to voters.

COUNTY 2

Center for Election Systems
August 2, 2013

EasyVote Telephone Survey

The purpose of this survey is to collect feedback from Georgia counties that have used the EasyVote product, and to use the feedback as input to the Product Review process.

1. **Historical**
   a. How long have you been using EasyVote? How many elections?
   b. Do you use a standard absentee application or was a custom application created for your county?
   c. How many absentee voters are run through the EasyVote system in an election?
2. **Installation**
   a. Was your office responsible for providing the hardware required for the system? Yes
   b. Are you running the EasyVote software on a computer with other county software? Yes, it runs of existing county computers.
   c. How many installations of the EasyVote system do you maintain during an election? 2, only during advance voting.

3. **Issues**
   a. Have you had any issues retrieving voter files coming from the state? Daily download for rocketfile, no issues, same file used for both systems.
   b. Have you had any issues with voter information accuracy when presented by the EasyVote system?
   c. Have you had any resistance or complaints from voters about scanning a voter's driver's license?
   d. Have you had any issues scanning driver's licenses? Any other known issues?
   e. Have you required any service or support from the vendor? Have you had any issues regarding their support? No issues getting support when needed.
4. **Lessons Learned**
   a. What advice would you give to a county considering implementing the EasyVote system?
   b. What lessons have you learned – what would you have done differently?
5. **General**
   a. Only uses EasyAbsentee
   b. 5 early voting locations

c. No time benefit for filling out forms
d. EasyVote was a slow process
e. Too many printers, Printer had to be near computer
f. Only used for mail-out ballots. Keeps good record, but may use it less as election net gains wider use.

COUNTY 3

Center for Election Systems
August 2, 2013

EasyVote Telephone Survey

The purpose of this survey is to collect feedback from Georgia counties that have used the EasyVote product, and to use the feedback as input to the Product Review process.

1. **Historical**
   a. How long have you been using EasyVote? Since October 2012
   How many elections? Only 1
   b. Do you use a standard absentee application or was a custom application created for your county? Standard Application
   c. How many absentee voters are run through the EasyVote system in an election? Charlton County had over 36% of its voters vote early for the November election and run through EasyVote (approx. 2100), but did not use EasyVote for absentee voters because it wasn't purchased soon enough.
2. **Installation**
   a. Was your office responsible for providing the hardware required for the system? It was included in the purchase price
   b. Are you running the EasyVote software on a computer with other county software? Yes
   c. How many installations of the EasyVote system do you maintain during an election? Only 1
3. **Issues**
   a. Have you had any issues retrieving voter files coming from the state? No
   b. Have you had any issues with voter information accuracy when presented by the EasyVote system? No
   c. Have you had any resistance or complaints from voters about scanning a voter's driver's license? No, as a matter of fact, they love it
   d. Have you had any issues scanning driver's licenses? No Any other known issues? None
   e. Have you required any service or support from the vendor? Yes. Have you had any issues regarding their support? No, they are very prompt to respond and always find a solution to the problem.
4. **Lessons Learned**
   a. What advice would you give to a county considering implementing the EasyVote system? It makes Advance and Absentee voting so much easier and makes the process flow faster
   b. What lessons have you learned – what would you have done differently? "The only thing I would have done differently was purchased it soon enough to begin absentee voting as well as advance voting. Can't wait until November, 2013 to use it fully."

COUNTY 4

Center for Election Systems
August 6, 2013

EasyVote Telephone Survey

How long have you been using EasyVote? How many elections?
2 elections.

Do you use a standard absentee application or was a custom application created for your county?
Standard.

How many absentee voters are run through the EasyVote system in an election?
5000 during presidential.

Was your office responsible for providing the hardware required for the system?
Purchased laptop and other equipment directly from EasyVote vendor.

Are you running the EasyVote software on a computer with other county software?
Laptop only used for EasyVote, but it is available if necessary.

How many installations of the EasyVote system do you maintain during an election?
1

Have you had any issues retrieving voter files coming from the state?
Yes, initially had issues getting the file. Had to skip an election. SOS didn't respond to a few tickets for updated voter file.

Have you had any issues with voter information accuracy when presented by the EasyVote system?
No issues except when driver's license is messed up.

Have you had any resistance or complaints from voters about scanning a voter's driver's license?
None.

Have you had any issues scanning driver's licenses? Any other known issues?

Have you required any service or support from the vendor? Have you had any issues regarding their support?
Getting support during extended voting hours was an issue. Updates performed during extended voting.

What advice would you give to a county considering implementing the EasyVote system? What lessons have you learned?
Recommend establishing a daily download and double check in VR system before allowing voter to vote.

COUNTY 5

Center for Election Systems
August 2, 2013

EasyVote Telephone Survey

The purpose of this survey is to collect feedback from Georgia counties that have used the EasyVote product, and to use the feedback as input to the Product Review process.

1. **Historical**
    a. How long have you been using EasyVote? How many elections? 8MONTHS-1 ELECTION
    b. Do you use a standard absentee application or was a custom application created for your county? IT IS A STANDARD APPLICATION THAT IS USED STATEWIDE
    c. How many absentee voters are run through the EasyVote system in an election? ALL THAT REQUEST A BALLOT WE PROCESSED ABOUT 350 FOR THE MARCH ELECTION.
2. **Installation**
    a. Was your office responsible for providing the hardware required for the system? YES. IT WAS INSTALLED ON OUR EXISTING COMPUTERS
    b. Are you running the EasyVote software on a computer with other county software? YES
    c. How many installations of the EasyVote system do you maintain during an election? 16
3. **Issues**
    a. Have you had any issues retrieving voter files coming from the state? NO. I WILL STATE THAT IT IS IMPERATIVE THAT YOU GET A DAILY FILE FROM THE STATE INSTEAD OF A MONTHLY FILE.
    b. Have you had any issues with voter information accuracy when presented by the EasyVote system? NO
    c. Have you had any resistance or complaints from voters about scanning a voter's driver's license? NO
    d. Have you had any issues scanning driver's licenses? Any other known issues? WITH THE NEW GEORGIA DRIVER'S LICENSE, THERE IS A RAISED SEAL THAT IS OVER THE NAME. IT WILL READ, BUT SOMETIMES IT WILL MISSPELL THE NAME.
    e. Have you required any service or support from the vendor? Have you had any issues regarding their support? YES. JUST GENERAL QUESTIONS. THE SUPPORT IS GREAT. THEY ARE PROMPT IN RETURNING CALLS AND COMING OUT JUST TO CHECK ON US.
4. **Lessons Learned**
    a. What advice would you give to a county considering implementing the EasyVote system? DO IT! THIS IS THE VERY BEST THING THAT WE HAVE EVER DONE FOR OUR COUNTY. EASY VOTE AND EASY ABSENTEE MADE OUR ELECTION PROCESS MUCH BETTER! MAKE SURE THAT YOUR IT DEPARTMENT CAN SUPPORT THE SYSTEM.

    b. What lessons have you learned – what would you have done differently? LET THE PROGRAM WORK FOR YOU. THERE ARE SO MANY HELPFUL REPORTS THAT WILL BENEFIT EVERY ASPECT OF THE VOTING AND ABSENTEE PROCESS.

COUNTY 6

Center for Election Systems
August 6, 2013

EasyVote Telephone Survey

How long have you been using EasyVote? How many elections?
Since 2010. 11 elections.

Do you use a standard absentee application or was a custom application created for your county?
Standard.

How many absentee voters are run through the EasyVote system in an election?
6000 at most during the general. 2000 on average.

Was your office responsible for providing the hardware required for the system?
Yes. Printer and laptop based on their specs.

Are you running the EasyVote software on a computer with other county software?
Used for other purposes rarely.

How many installations of the EasyVote system do you maintain during an election?
1

Have you had any issues retrieving voter files coming from the state?
No issues. The state knew the file needed, and the file is now used for other purposes than EasyVote.

Have you had any issues with voter information accuracy when presented by the EasyVote system?
No irregular issues. Only if license is in bad shape.

Have you had any resistance or complaints from voters about scanning a voter's driver's license?
None.

Have you had any issues scanning driver's licenses? Any other known issues?
No issues.

Have you required any service or support from the vendor? Have you had any issues regarding their support?
Yes. Very good support. Contacts Chuck directly. Minor log on issues at first. Changes were made based on recommendations during first year within a day or two.

What advice would you give to a county considering implementing the EasyVote system? What lessons have you learned?
Only used for advance voting. Important that you marry the (EasyVote) system with VR system. Immediately input changes made in EasyVote to VR.

COUNTY 7

Center for Election Systems
August 5, 2013

EasyVote Telephone Survey

Never used EasyVote in an election.

Weren't able to test because of no training environment. Training must be done in live environment. No place to train people.

Concern: perception is that when printing the app, you are holding the voter up, rather than the voter filling out the app and holding themselves up. The voter may perceive that it takes longer because they are waiting for an application to be printed.

Voters tend not to properly check pre-filled applications.

COUNTY 8

Center for Election Systems
August 5, 2013

EasyVote Telephone Survey

How long have you been using EasyVote? How many elections?
3 years, at least 9 elections

Do you use a standard absentee application or was a custom application created for your county? Standard

How many absentee voters are run through the EasyVote system in an election?
About 3-4000 each election

Was your office responsible for providing the hardware required for the system?
Yes.

Are you running the EasyVote software on a computer with other county software?
Yes.

How many installations of the EasyVote system do you maintain during an election?
2

Have you had any issues retrieving voter files coming from the state?
No issues.

Have you had any issues with voter information accuracy when presented by the EasyVote system?
About 95% accuracy. No major issues.

Have you had any resistance or complaints from voters about scanning a voter's driver's license? No issues, voters like the quickness. Speeds up entire process.

Have you had any issues scanning driver's licenses? Any other known issues?
No known issues.

Have you required any service or support from the vendor? Have you had any issues regarding their support?
Quick support.

What advice would you give to a county considering implementing the EasyVote system? What lessons have you learned?
They love it. Suggestion is everyone has this system.

COUNTY 9

Center for Election Systems
June 7, 2013

EasyVote Telephone Survey

How long have you been using EasyVote? How many elections?
"2010, Every election since"

Do you use a standard absentee application or was a custom application created for your county?
"Standard, similar to SOS provided one."

How many absentee voters are run through the EasyVote system in an election? Volume?
"No volume issues. Actually sped up the absentee app process. 5500 to 6000 during largest election."

Were you responsible for providing the hardware required for the system?
"Only the laptop"

What hardware was necessary? Are you running the software on an existing computer with other county software?
"Laptop, county provided. Inkjet printer to print in blue. Comes with license scanner and barcode scanner. Flat scanner pulls voter info from front of license. Barcode scanner for pulling record from the state VR system. Info can be typed manually."

How many instances of the EasyVote system do you run?
"One license, but additional licenses can be purchased for $100 during advance voting. 3 instances during largest election on separate laptops. Only one laptop had scanner."

Have you had any issues retrieving voter files coming from the state?
"No issues"

Have you had any issues with voter information accuracy when passed to the EasyVote system?
"No issues"

Have you had any resistance of complaints about scanning a voter's driver's license?
"No reported issues."

Have you had any issues scanning driver's licenses? Any known issues?
"A few, on newer drivers licenses with hologram over name. If it doesn't scan once, they generally type info manually."

Have you required and service or support from the vendor? Have you had any issues regarding their support?
"IronPort firewall, county IT issue."

#2.6 #2.14

Certification Test of the

Premier Election Solutions, Inc. TS Voting System

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia, 30144

Revised
April 11, 2008

Contents

1. Introduction

Certification Tests of the Georgia Voting System were conducted at Kennesaw State University during the month of April 2008. The purpose of these tests was to verify that the ExpressPoll 5000 will function seamlessly in the Georgia voting system. This component passed these tests. A recommendation was sent to the Secretary of State that this component be certified for use in Georgia voting system. The Test Plans for these tests are contained in Appendix E.

Certification Chronology

Certification tests of the Georgia Voting System including security upgrades were conducted in December 2004. (See Appendix A)

Certification tests to include the ExpressPoll 4000 in this system were conducted in August and September, 2005 .

Certification tests to include the AccuVote TSX – Model C Voting Station in this system were conducted in March 2006. (See Appendix B)

Certification tests to include the AccuVote TSX – Model D Voting Station in this system were conducted in July 2006. (See Appendix C)

Tests to validate that the Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 will function correctly in this system were conducted in March 2008. (See Appendix D)

Certification tests to include the ExpressPoll 5000 in this system were conducted in March 2008. (See Appendix E)

These tests were conducted by the staff of the Kennesaw State University Center for Election Systems under the direction of Dr. Brit Williams.

2. Summary of Findings

The Premier Election System TS Voting System as tested in 2004 was found to be in compliance with the applicable provisions of the Help America Vote Act of 2002, the Georgia Election Code, the Rules of the Georgia Election Board, and the Rules of the Secretary of State. This system consists of the following components:

Dell Power Edge with GEMS	1.18.22G
AccuVote R6 voting station with	AVTS 4.5.2
AccuVote OS ballot scanner with	AVOS 1.94w
Voter Card Encoder with	Firmware 1.32
Key Card Tool with	Firmware 1.01

The following features are enhancements that were tested in December 2004 for inclusion in the Georgia voting system.

Encryption of the data files transmitted via modem: When the polls close on election night the poll manager has the ability to transmit unofficial results to the county elections office. The previous version of the voting system did not encrypt this file prior to transmission. The tested version of the voting system encrypts this file prior to transmission.

Randomization of all internal ballot image files: The previous version of the voting system contained one ballot image file that was not randomized. The tested version of the voting system randomizes all internal ballot image files.

Dynamic password on Poll Manager Card: In previous version of the voting system the password on the Poll Manager Card was a static four digit number. The tested version of the system has a six digit password and allows this password to be changed as often as desired.

Dynamic password on Voter Cards: In the previous version of the voting system the password contained in the hand-shaking routine between the voter card and the voting station was static. The tested version of the system allows this password to be changed as often as desired.

The ExpressPoll 4000 with firmware 2.1.2 with card writer 1.1.4.0 was tested in September 2005 for inclusion in the Georgia voting system.

ExpressPoll 4000: ExpressPolls function as an encoder that is connected to the precinct's electors list. By reading and displaying the precinct's electors list, The ExpressPoll creates a voter access card which will access the voter's assigned ballot style by associating the voter's ballot combination, as outlined in the voter registration record, with the ballot styles maintained on the voting units within the precinct.

The AccuVote TSX, Models C and D with firmware 4.5.2 were tested in July 2006 for inclusion in the Georgia voting system.

AccuVote TSX – Model C Voting Station: The TSX – Model C is a revised version of the AccuVote TS R6 voting station. The TSX is functionally identical to the TS R6. Enhancements include an integrated carrying/storage case, lighter weight, and a light-weight, battery powered voting tablet that can be removed from the case and placed in a handicapped voters lap or carried to curb-side. The certification Test Plan for the TSX – Model C is contained in Appendix B.

AccuVote TSX – Model D Voting Station: The TSX – Model D is a slightly modified version of the TSX Model C Voting Station. The Model D is both functionally and electronically identical to the Model C. Thus, the Model D does not require any additional training for election officials or voters who are familiar with the Model C. The Model D was developed in response to the unavailability of some of the components of the Model C. The certification Test Plan for the TSX – Model D is contained in Appendix C.

The Dell Power Edge Server, service pack 4, with all security and time zone updates as of 3/11/2008 was tested in March 2008 for inclusion in the Georgia Voting System.

The original Dell servers used in the Georgia Voting System were acquired in 2002. These servers are nearing the end of their expected life. The Dell Power Edge tested will be used as a replacement for the original Dell computers. The certification test plan for the Dell Power Edge Server is contained in Appendix D.

The ExpressPoll 5000 with firmware 2.1.2 with card writer 1.1.4.0 was tested in April 2008 for inclusion in the Georgia voting system.

The ExpressPoll 5000 is a revised, newer model of the ExpressPoll 4000. Its function is identical to the function of the ExpressPoll 4000. The ExpressPoll 4000 is no longer available. The certification test plan for the ExpressPoll 5000 is contained in Appendix E.

3. System Description

The system tested in December 2004 was the **AccuVote TS Voting System**, presented by Premier Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas, 75069-8250. This system is composed of the **AccuVote TS R6 Voting Station**, the **AccuVote TSX Voting** Station, the **AccuVote OS Ballot Scanner,** the **Voting Card Encoder**, the **Express Poll 4000**, and a commercial computer running the **Global Election Management System (GEMS)**. A complete list of the system tested is contained in Appendix A.

3.1 System Hardware

At the conclusion of tests performed in March 2008, the hardware of the Georgia voting system consists of:

- **Dell Power Edge computers** provided by Premier under the State contract support the election management system (GEMS).

Dell Power Edge Servers with service pack 4 support the election management system.

AccuVote TS R6 Voting Stations provide a voter interface.

AccuVote TSX Models C and D Voting Stations provide a voter interface.

AccuVote OS Ballot Scanners are used to process absentee and provisional/challenged ballots.

Voter Card Encoders are used to program the voter cards.

Smart Cards are used for voter cards and supervisor cards.

ExpressPoll 4000s and ExpressPoll 5000s are used to read voter's records from the precinct voter registration database and create the corresponding voter card.

3.2 System Software/Firmware

At the conclusion of tests performed in March 2008, the software/firmware of the Georgia voting system consists of:

The operating system used by the personal computers that support the Global Election Management System and the Poll Book systems is **Windows CE with power pack 4.** Windows CE is also the operating system that controls the functions of the Voting Stations.

The **Global Election Management System (GEMS), Version 1.18.22G,** is a Premier proprietary system which runs on a the Dell servers and performs the following pre-election functions: setup the election data base, create a new election, enter contests and issues, define ballot styles, and produce the PCMCIA cards that are used to program the voting stations in the precincts and the absentee ballot scanners. After the polls close, this system reads the PCMCIA cards from the precincts, tallies the votes, and prints the various reports and audit data.

BS, Version 4.5.2 is a Premier proprietary system that controls the TS-R6 and TSX voting stations.

OS, Version 194w is a Premier proprietary system that controls the OS Ballot Scanner.

Encoder Firmware 1.32 is a Premier proprietary system that controls the voter card encoder.

Key Card Tool 1.01 is a Premier Proprietary system that enables the election official to change the passwords on the Voter Cards and the Poll Manager's Card.

ExpressPoll Firmware 1.2.0 with card writer 1.1.4.0 is a Premier Proprietary system that enables an election official to read a voter record from the voter registration database and create a Voter Card for the ballot style that corresponds to the voter's registration information.

3.3 System and Test Documentation

AccuVote-TS R6 System Hardware Specification, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

AccuVote-TS Hardware Guide, Document Revision 1.0, Premier Election Solutions, Inc., April 30, 2001

GEMS 1.18 User Guide, GEMS, Revision 4.0, Premier Election Solutions, Inc., November 1, 2002

AccuVote OS AccuFeed User's Guide, Revision 1.0, Premier Election Solutions, Inc., July 18, 2002

VCProgrammer 4.1 User's Guide, Revision 2.0, Premier Election Solutions, Inc., September 24, 2002

AccuVote OS Precinct Count 1.96 User's Guide, Revision 1.0, Premier Election Solutions, Inc., August 27, 2002

AccuVote-TS Ballot Station 4.5 User's Guide, Revision 2.0, Premier Election Solutions, Inc., June 17, 2004

GEMS 1.18 Product Overview Guide, Revision 2.0, Premier Election Solutions, Inc., February 13, 2004

GEMS 1.18 Reference Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

GEMS 1.18 Election Administrator's Guide, Revision 6.0, Premier Election Solutions, Inc., June 15, 2004

Voter Card Encoder 1.3 User's Guide, Revision 1.0, Premier Election Solutions, Inc., February 10, 2004

Key Card Tool 1.0 User's Guide, Revision 2.0, Premier Election Solutions, Inc., April 20, 2004

Source Code, GEMS Version 1-18-22G, Premier Election Solutions, Inc., July 2004

Premier Election Solutions, Inc., Inc. Software Functional Test Report GEMS 1-18-22, Ciber Independent Test Authority, September 29, 2004

Change Release Report of the AccuVote TS R6 DRE Voting Machine, Wyle Laboratories, August 3, 2004

AccuVote TSX Hardware Guide, Premier Election Solutions, Inc., Revision 8.0, February 2004

AccuVote TSX Pollworker's Guide, Premier Election Solutions, Inc., Revision 5.0, March 2005

GEMS 1-18 Election Administrator's Guide, Premier Election Solutions, Inc., Revision 10.0, May 2005

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GEMS 1.18 Reference Guide, Revision 8.0, Premier Election Solutions, Inc., April 2005

GEMS 1.18 User Guide, GEMS, Revision 12.0, Premier Election Solutions, Inc., April 2005

ExpressPoll Administrator's Guide for Version 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll Emjulator and Resource Guide for Versions 1.2 and 2.1, Revision 3.0, Premiere Election Solutions, 2005

ExpressPoll User's Guide for Versions 2.0 and 2.1, Revision 3.0, Premier Election Solutions, 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix A: Software Specification, Premier Election Solutions, Inc., 2005

ExpressPoll CardWriter 1.0 Technical Data Package Appendix B: Program Data Structure and Flow, Premier Election Solutions, Inc., 2005

Software Functional Test Report Premier Election Solutions, Inc. GEMS 1-18, Addendum 12 for GEMS 1-18-22G, Ciber Independent Test Authority, June 2006

Hardware Qualification Testing of the Premier Election Solutions, Inc. AccuVote TSX Model D DRE Voting Machine, Wyle Report 52501-07 on the AccuVote TSX Model D Tablet, Wyle Laboratories, Inc., April 2006

GEMS 1.18 System Administrator's Guide, Revision 7.0, Premier Election Solutions, Inc., January 2006

Georgia Election Code, Annotated, 2007 Edition

3.4 Overview of System Operation

Election Definition: The following functions are performed by the Global Election Management System (GEMS).

Create the election database.

Enter races and candidates, issues and options that are to appear in the election

Select the races and issues that are to appear on each ballot style.

Enter headings and instructions as they are to appear on the ballots.

Format the ballots.

Establish passwords for the voter cards and poll manager's cards.

Hardware Programming: Once the election definition is complete, the PCMCIA cards can be prepared to control the AccuVote TS voting stations and the AccuVote OS optical scan ballot scanners. A PCMCIA card must be prepared for each voting station and each ballot scanner.

Precinct Setup: The voting stations and ballot scanners are prepared for the election by inserting the PCMCIA cards and powering up the device. The device performs a self test and is then ready for pre-election testing.

Election Day (Precinct) Activities: As the polls are opened and each device is powered up, the device performs a self test and presents a menu with the various options allowed at the polling place. If the 'open polls' option is selected, the registers are set to zero and a 'zero totals' tape is printed.

The ExpressPoll is used by a poll worker to isolate a voter's name on an electronically displayed elector's list within the precinct and then create a voter access card while at the same time marking the precinct's electors list. The combined operation is designed to provide an accurate listing of voter participation at the precinct while ensuring that each participating elector receives the proper ballot style which is based on the voter's ballot combination outlined in the state's voter registration system.

When the polls are closed, the vote totals from each device are recorded to the PCMCIA cards. These cards are then transported to a central counting location for entry into the GEMS system for tallying and reporting. If desired, unofficial results from the precincts can be transmitted to the central location via modem.

Vote Tallying/Report Printing: The PCMCIA cards from each precinct are returned to the central facility where they are loaded into the GEMS. During this step, any known errors can be manually corrected and absentee votes can be entered.

At any time during the tally of the votes or at the completion of vote tallying, election result can be printed by precinct or overall. These reports can also be exported to other systems or posted on the Internet.

The system administrator can use the GEMS to print the various audit logs.

4. Compliance With Applicable Statues and Standards

4.1 Election Assistance Commission Voting System Standards

Hardware/Firmware: The Premier Election Solutions, Inc. TS Voting System hardware and firmware was examined by Wyle Laboratories, Huntsville, Alabama and found to be in compliance with the hardware specifications contained in the EAC Voting System Standards. Wyle is an Independent Test Agency approved by the National Association of State Election Directors (NASED).

Software: The GEMS election management software was examined by Ciber, Inc., Huntsville, Alabama and found to be in compliance with the software specifications contained in the EAC Voting System Standards. Ciber, Inc. is an Independent Test Agency approved by the National Association of State Election Directors.

NASED Qualification: The components that comprise the Georgia voting system are qualified under NASED voting system Qualification Numbers N-1-06-12-12-003 through N-1-06-12-12-010.

4.2 Help America Vote Act of 2002

The Premier Election Solutions, Inc. TS Voting System is classified as an electronic voting system and, as such, falls under the following Sections of the **Help America Vote Act of 2002**

TITLE III--UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS; SEC. 302. PROVISIONAL VOTING AND VOTING INFORMATION REQUIREMENTS.

(a) Provisional Voting Requirements.--If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot ...

The Premier Election Solutions, Inc. TS Voting System has the facility to allow a voter to vote a provisional ballot. This ballot is stored in a separate location and is not included in the tally until the voter's credentials have been established by the county registrar.

The paper ballot used for absentee voting can also be used to satisfy this requirement.

(2) Audit capacity (B) Manual audit capacity.—
(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

The Premier Election Solutions, Inc. TS Voting System can satisfy this requirement.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The AccuVote TS R6 and TSX Voting Stations present a summary screen at the end of the ballot that gives the voter the opportunity to change any selection.

(3) Accessibility for individuals with disabilities.—The voting system shall--(A) be accessible for individuals with disabilities, including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

The voter using the AccuVote TS R6 and TSX voting stations can choose to view the ballot in large print or in high contrast or both. In addition, The AccuVote TS R6 and TSX voting stations can be equipped with a keypad and earphones for vision impaired voters.

4.3 Georgia Election Code, Annotated, 2007 Edition

The Premier Election Solutions, Inc. TS Voting System is classified as direct recording electronic voting systems. The Georgia Election Code, Section 21-3-379 regulates systems of this type.

21-2-379.1 Requirements for use of electronic recording voting systems

No direct electronic recording voting system shall be adopted or used unless it shall, at the time, satisfy the following requirements:

(1) *It shall provide facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(2) *It shall permit each elector, in one operation, to vote for all candidates of one party of body for presidential electors;*

The Premier Election System TS Voting System satisfies this requirement.

(3) *Except as provided in paragraph (2) of this Code section for*

presidential electors, it shall permit each elector, at other than primaries, to vote a ticket selected from nominees of any and all parties or bodies, from independent nominations, and from persons not in nomination;

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(4) *It shall permit each elector to vote, at any election, for any person and for any office for whom and for which he or she is lawfully entitled to vote, whether or not the name of such person or persons appears as a candidate for election, to vote for as many persons for an office as he or she is entitled to vote for; and to vote for or against any question upon which he or she is entitled to vote;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests included multiple candidates for a single office and write-in candidates.

(5) *It shall preclude the counting of votes for any candidate or upon any question for whom or upon which an elector is not entitled to vote; shall preclude the counting of votes for more persons for any office than he or she is entitled to vote for; and shall preclude the counting of votes for any candidate for the same office or upon any question more than once;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. Tests indicated that the voter was only able to see and vote on the assigned ballot style. The system does not allow over-votes. Once the allowed number of candidates has been selected, the voter cannot select another candidate without first releasing one of the previously selected candidates. Tests were conducted to ensure that a voter could not write in the same name multiple times in a multi-candidate contest.

(6) *It shall permit voting in absolute secrecy so that no person can see or know for whom any other elector has voted or is voting save an elector whom he or she has assisted or is assisting in voting, as prescribed by law.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(7) *It shall be constructed of material of good quality in a neat and workmanship like manner;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The quality of the materials and workmanship was reviewed by the hardware/firmware ITA, Wyle Laboratories.

(8) *It shall, when properly operated, record correctly and accurately every vote cast;*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement. The hardware ITA, Wyle Laboratories, and the software ITA, Ciber, Inc., extensively tested this requirement. The State certification tests included logic and accuracy tests, but with a smaller number of ballots than the tests conducted by the ITAs.

(9) *It shall be so constructed that an elector may readily learn the method of operating it;*

In order to vote on the AccuVote TS R6 or TSX voting station, the voter must press a pressure sensitive spot containing the name of the candidate. When the spot is pressed, a lighted square containing a large X appears beside the candidate's name. The persons participating in these tests did not have undue difficulty voting on the AccuVote TS R6 and TSX Voting Stations.

(10) *It shall be safely transported.*

The portion of the system that is installed in the precinct, the AccuVote TS R6 and TSX voting stations and the Express Poll 4000, are small and easily transported. See Section 3.2, System Hardware/Firmware.

21-2-379.4 Ballot appearance; write in votes on DRE systems

(a) The ballots for direct recording electronic (DRE) voting systems shall be of such size and arrangement as will suit the construction of the DRE screen and shall be in plain, clear type that is easily readable by persons with normal vision. If the equipment has the capacity for color display, the names of all candidates in a particular race shall be displayed in the same color, font, and size and the political party or body affiliation of candidates may be displayed in a color different from that used to display the names of the candidates, but all political party or body affiliations shall be printed in the same size and font. All ballot questions and constitutional amendments shall be displayed in the same color.

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(b) *The arrangement of offices, names of candidates, and questions upon the ballots shall conform as nearly as practicable to this chapter for the arrangement of such offices, names of candidates, and questions on paper ballots.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) *Electors shall be permitted to cast write-in votes on DRE voting systems as provided in Code Section 21-2-133. The design of the ballot shall permit the election superintendent and poll workers when obtaining the vote count from such systems to determine readily whether an elector has cast any write-in vote not authorized by law.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

21-2-379.5 Ballot information

(b) *The ballot for each candidate or group of candidates nominated by a political party or body shall display the name or designation of the political party or body.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

(c) *The incumbency of a candidate seeking election for the public office he or she then holds shall be indicated on the ballot.*

The Premier Election Solutions, Inc. TS Voting System satisfies this requirement.

Appendix A

Certification Test Plan
Of the
Georgia DRE Voting System
September 2004

Hardware Definition

GEMS Computer

Voter Card Encoders
- 101532
- 115663
- 119134
- 119136

Voting Stations
- 110002
- 113438
- 114187
- 114995
- 115673
- 116217
- 116372
- 116669
- 119520
- 121216
- 121606
- 123461
- 128124

Key Card Tool
- Dell Notebook Computer

Absentee Ballot Scanner
- 86634

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G

Encoder	1.3.2
Key Card Tool	1.0.1

Phase I: Initial Setup:

1. Install the new system on Center devices and identify the differences between the current and the new system.
2. Identify the portions of the system that will require changes to the current training for election officials and poll workers.
3. Develop the ballot styles that will be used in the following Phases II and III. The ballot style for Phase II should be long enough that the summary page does not show on a single screen.
4. Develop voting scripts and voter instructions for use in Phase II.
5. Identify the devices that will be available for use during Certification Testing and set up the test environment.
6. Schedule a meeting to brief the KSU and SOS staff on the above items. This briefing should contain sufficient detail to enable this staff to make decisions about the implementation of the new system.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each county will have one early-voting terminal and each precinct will have two voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, thirteen AccuVote TS voting stations with firmware version 4.5.2 , two AccuVote OS ballot scanners with firmware version 1.94w, four voter card encoders with firmware version 1.3.2. (Diagram A, below)

Phase III: Stress Testing

1. High volume tests. Conduct tests to determine the ability of the TS units to accommodate a high volume of ballots. The number of ballots cast in this test will exceed the number of ballots that may be cast in an early voting setup.

2. Precinct worker errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by poll workers.
3. Voter errors. Identify and test the system's ability to recovery from various types of errors that are typically committed by voters.
4. Acts of Nature/Vandalism. Identify and test the system's ability to recovery from various acts of nature or vandalism.

Phase IV: Security Tests

- Conduct vulnerability assessment of the Premier DRE to determine open ports and known vulnerabilities.
- Perform vulnerability assessment of the standard installation of GEMS Election Management Systems (EMS) to determine open ports and known vulnerabilities.
- Develop implementation recommendations for GEMS EMS, focusing on physical and procedural security.
- Hash and document GEMS standard installation for use in implementation validation and verification.
- Create hashing scripts to validate county implementations of GEMS against certified CES implementation of GEMS software.

Ballot Script
Georgia Certification Test

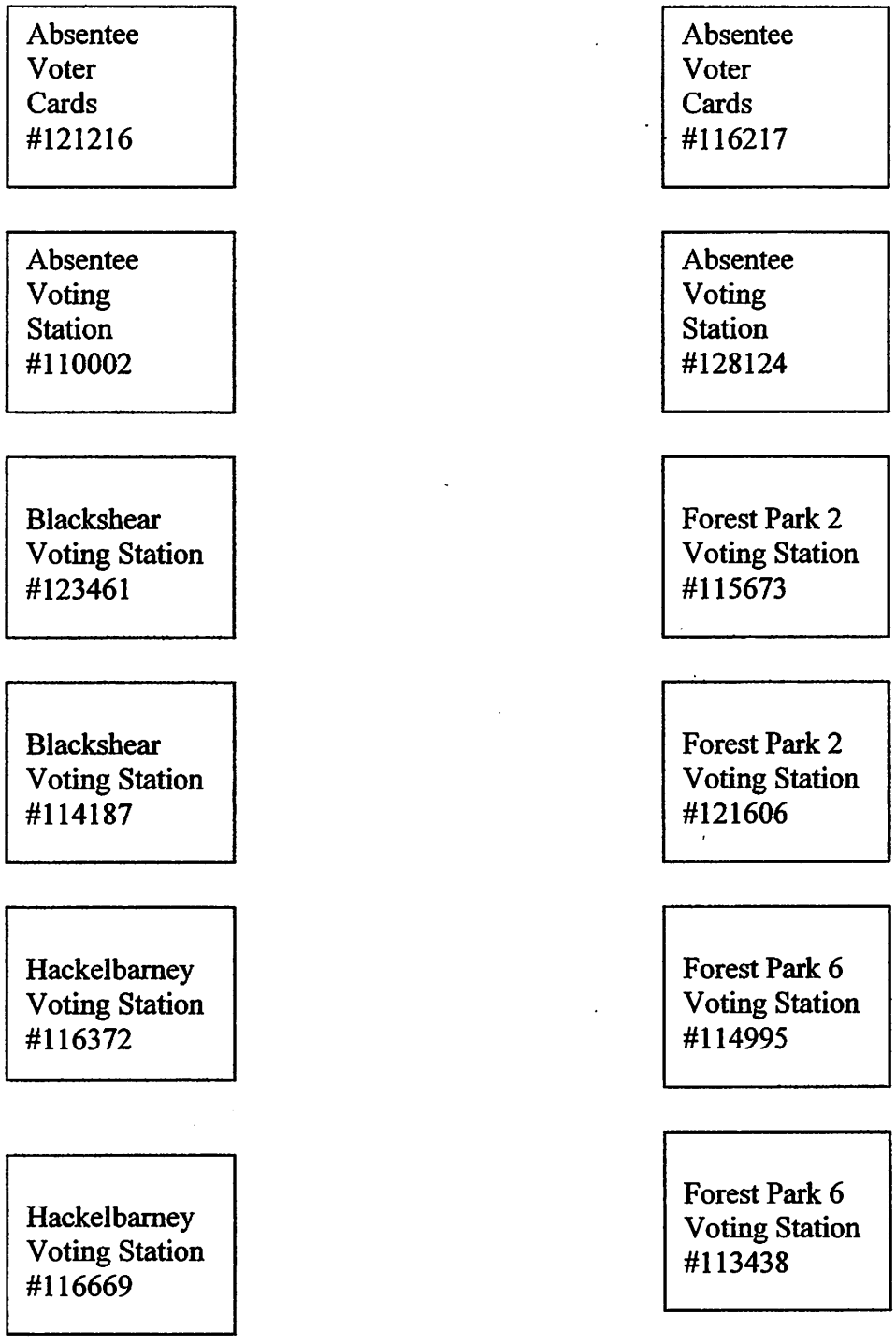
County: Clayton
Precinct/Split: Forest Park 2, Split A
Voting Station: _____
Script: 1

Voter: _____ **Date:** _____

US Senate:	**MAX CLELAND**
Governor:	**ROY E BARNES**
Lt. Governor:	**MARK TAYLOR**
Secretary of State:	**CATHY COX**
Attorney General:	**THURBERT BAKER**
Comm. Of Agriculture:	**TOMMY IRVIN**
Comm. Of Insurance:	**LOIS COHEN**
State School Super:	**BARBARA CHRISTMAS**
Comm. Of Labor	**MICHAEL THURMOND**
Public Service Comm. 1	**EARLEEN W SIZEMORE**
Public Service Comm. 2	**LAUREN MCDONALD, JR**
US Rep 13th District	**DAVID SCOTT**
State Senate 44th District:	**TERRELL A STARR**
State Rep. 50th District:	**GEORGANA SINKFIELD**
County Comm. Dist. 1	**CARL RHODENIZER**
Board of Education:	**ERICA DAVIS or SUE RYAN**

(CONTINUED)

Const. Ammend. 1	**YES**
Const. Ammend. 2	**YES**
Const. Ammend. 3	**YES**
Const. Ammend. 4	**YES**
Const. Ammend. 5	**YES**
Const. Ammend. 6	**YES**
Statewide Ref. A	**YES**
Statewide Ref. B	**YES**
Statewide Ref. C	**YES**
Statewide Ref. D	**YES**
Statewide Ref. E	**YES**



Usability Test Configuration
Diagram A

Appendix B

Certification Test Plan
Of the
AccuVote TSX Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX voting station, firmware version 4.5.2, will operate seamlessly in the Georgia Voting System. The precinct layout for these tests will be the same as the precinct layout presented in Appendix A, above.

Phase I: Interoperability:

The purpose of these tests is to verify that the AccuVote TSX voting station will operate seamlessly in the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX voting stations.
2. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX voting station will upload successfully into GEMS 1.18.22G.
3. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX voting station.
4. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations, AccuVote TSX voting stations, and AccuVote OS optical scan ballot scanners will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome. All AccuVote TSX voting stations will record a number of votes that exceeds the number of votes normally cast on a voting station in a State election.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX voting stations. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX voting stations with firmware version 4.5.2 ,

one AccuVote OS ballot scanners with firmware version 1.94w, one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Phase IV: Security Tests

- Conduct vulnerability assessment of the AccuVote TSX voting station to determine open ports and known vulnerabilities.
- Develop recommendations for the storage and handling of TSX voting stations.

Hardware Definition

GEMS Computer

ExpressPoll 4000
5065012A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Voting Stations
204315
208152
223494
258838

Key Card Tool
Dell Notebook Computer

Absentee Ballot Scanner
40805

Software Definition

AVTS-R6	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix C

Certification Test Plan
Of the
AccuVote TSX Model D Voting Station
Georgia DRE Voting System
September 2004

Overall Objective: The purpose of these tests is to verify that the AccuVote TSX, Model D, voting station using firmware version TSX 4.5.2, will operate seamlessly in the Georgia Voting System.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the AccuVote TSX Model D voting station with existing components of the Georgia Voting System.

5. Verify that memory cards produced by GEMS 1.18.22G will load successfully into either the TS-R6 or the TSX Model D voting stations.
6. Verify that memory cards created by closing the polls on either a TS-R6 or a TSX Model D voting station will upload successfully into GEMS 1.18.22G.
7. Verify that voter cards produced by PollBook 4000, version 1.2.0, will operate successfully in either the TS-R6 or the TSX Model D voting station.
8. Verify that a mix of memory cards produced by closing the polls on AccuVote TS-R6 voting stations and AccuVote TSX Model D voting stations will upload correctly into GEMS 1.18.22G.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The configuration for this test will consist of two precincts from each of two counties, for a total of four precincts, as follows:

Clayton County: Forest Park 2 and Forest Park 6 Precincts.

Pierce County: Blackshear and Hackelbarney Precincts

Each precinct will have one TSX – Model D voting station. The overall system employed will consist of a computer operating under GEMS 1.18.22G, a lap-top computer with Key Card Tool 1.0.1, four AccuVote TSX Model D voting stations with firmware version TSX 4.5.2, and one Express Poll 4000 with firmware version 1.2.0

Phase III: Stress Testing

The purpose of this test it to verify that the AccuVote TSX – Model D voting station can accommodate the number of ballots cast during early voting. The number of ballots voted in this test will exceed 50,000 on a single voting station.

Hardware Definition

GEMS Computer

ExpressPoll 4000
SOGS009A

AccuVote TS-R6 Voting Stations
159543

AccuVote TSX Model D Voting Stations
262247
263480
263513
263515
276094
276137

Key Card Tool
Dell Notebook Computer

Software Definition

AVTS-R6	4.5.2
AVTS-TSX	4.5.2
GEMS	1.18.22G
Encoder	1.3.2
Key Card Tool	1.0.1
PollBook 4000	1.2.0

Appendix D

Validation Test Plan
of the
Dell Power Edge Server
for use in the
Georgia Voting System

March 2008

Overall Objective: The purpose of these tests is to verify that the Dell Power Edge Server with Windows 2000, service pack 4 with all security and time zone updates as of 3/11/2008 will not affect the overall flow of program control or the manner in which ballots are recorded and the votes are processed in the Georgia voting system.

Phase I: Interoperability:

The purpose of these tests is to verify the interoperability of the Dell Power Edge Server with Windows 2000, service pack 4 with existing components of the Georgia Voting System.

1. Verify that memory cards produced by GEMS 1.18.22G will load successfully into the Accuvote TS-R6, the AccuVote TSX voting stations, and the AccuVote OS ballot scanner.
2. Verify that a mix of memory cards produced by closing the polls on AccuVote OS ballot scanners, AccuVote TS-R6 voting stations, and AccuVote TSX voting stations will upload correctly into GEMS 1.18.22G.
3. Verify modem transmissions between the AccuVote TS-R6, the AccuVote TSX, and the AccuVote OS and GEMS 1.18.22G.
4. Verify that GEMS 1.18.22G prepares all backup materials and all reports correctly using third-party software products.

Phase II: Usability Testing

This test will test the end-to-end operation of the system by setting up and executing an election that is typical of an election in the State. Voting scripts will be prepared with a known outcome.

Setup: The GEORGIA CERTIFICATION database will be use as the election setup for this test. This election setup consists of one federal office, two state offices, one county office, and two referendum questions.

The voting system tested will consist of one AccuVote TS – R6 voting station with firmware version 4.5.2, one AccuVote TSX – Model D voting station with firmware version 4.5.2, and one AccuVote OS ballot scanner with firmware 1.94w. ExpressPoll 4000s and ExpressPoll 5000s with firmware version 2.1.2 and card writer firmware version 1.1.4.0. will be used to produce voter cards.

The GEMS server employed will consist of a Dell Power Edge server with Windows 2000, service pack 4 running GEMS 1.18.22G.

Hardware Definition

GEMS Computer (1)
Dell Power Edge server
with Windows 2000, service pack 4
with all security and time zone updates
as of 3/11/2008

ExpressPoll 4000
Express Poll 5000

AccuVote TS-R6 Voting Stations

AccuVote TSX Model D Voting Stations

AccuVote OS ballot scanners

Software Definition

Windows 2000	Service pack 4
AVTS-R6	4.5.2
AVTS-TSX	4.5.2
AVOS	1.94w
GEMS	1.18.22G
Encoder	1.3.2
ExpressPoll 4000	2.1.2 with card writer 1.1.4.0
ExpressPoll 5000	2.1.2 with card writer 1.1.4.0

Test Participants – March 26, 2008

Brit Williams	Kennesaw State University
Michael Barnes	Kennesaw State University
Devin Pearson	Kennesaw State University

Appendix E

Certification Test of the ExpressPoll 5000 and Interoperability Test of the ExpressPoll 4000 and ExpressPoll 5000

March 2008

Purpose of Test

The ExpressPoll 4000 has been previously certified for use in the Georgia voting system. The ExpressPoll 5000 is an enhanced version of the ExpressPoll 4000. The purpose of this test is to verify that the ExpressPoll 5000 will function correctly both independently and in combination with the ExpressPoll 4000.

Test Requirements

Database

One Hundred fifty-nine GEMS databases were built using data associated with the February 2008 Presidential Preference Primary. These databases were combined with voter registration data for all registered voters in Georgia as of January 7, 2008. The combined data will be used to power ExpressPolls during testing.

Hardware

ExpressPoll 4000
ExpressPoll 5000
AVTS R – 6 voting station
AVTS TSX voting station
Four-port Hub
Direct Cables
Crossover Cables

Software/Firmware

ExpressPoll 4000	2.1.2 with card writer 1.1.4.0
ExpressPoll 5000	2.1.2 with card writer 1.1.4.0
AVTS R – 6	firmware 4.5.2
AVTS TSX	firmware 4.5.2

Test Configurations

- Two EP 5000 via crossover cable
- One EP 4000 and one EP 5000 via crossover cable
- Two EP 5000 via Hub
- Three EP 5000 via Hub
- Three EP 4000 via Hub
- One EP 4000 and two EP 5000 via Hub
- Two EP 4000 and one EP 5000 via Hub
- Two EP 4000 and three EP 5000 via Hub

Configuration Test Outline

- Prepare the configuration to be tested.
- Load the database into the ExpressPolls
- Select the precinct
- Prepare voter cards
- Verify correctness of voter cards
- Verify ExpressPoll synchronization

Test Participants – March 25, 2008

Brit Williams	Kennesaw State University
Michael Barnes	Kennesaw State University
Mike McCarthy	Secretary of State
Joseph Kirk	Bartow County
Maxine Daniels	DeKalb County
Derrick Gilstrap	Fulton County
Brenda Williams	Fulton County
Janice Williams	Gwinnett County
Claudia Lashen	Gwinnett County
Regina Clark	Gwinnett County

#2.6 #2.13

Certification Test of the

TSx Direct Record Electronic Voting System, Ballot Station 4.5.2! and WinCE 410.3.5

Prepared for:

Elections Division
Office of the Secretary of State
State of Georgia

Prepared by:

Center for Election Systems
Kennesaw State University
Kennesaw, Georgia 30144

April 1, 2015

Certification Test Plan
For the
TSx DRE running Ballot Station 4.5.2! and WinCE 410.3.5

Introduction

During the Logic and Accuracy testing of the November 2014 General Election ballot, it was noted that some TSx units failed to complete the printing of the summary report. The units would discontinue printing when a specific race in the election was encountered. The anomaly did not impact the long report version of the pre- and post-election tapes, nor did it impact vote capture or vote tabulation.

The anomaly was traced to a buffer interrupt issue within the installed version of the Windows operating system on the DRE: WinCE 410.3.4. Tests at the Center for Election Systems and at Election Systems & Software (ES&S) confirmed the presence of the error in the interrupt handling routines of WinCE 410.3.4. This anomaly was addressed in a subsequent release of WinCE: WinCE 410.3.5.

When the operating system was updated to WinCE 410.3.5, the anomaly no longer manifested itself. No modifications to the TSx application, Ballot Station 4.5.2! or to the TSx hardware or firmware were required. The TSx units were tested separately and as part of the overall voting system.

Subsequent tests, including a pilot test in Rabun County during the March 17, 2015 election, indicate that the interrupt handling routines are executing properly and that the application software, operating system, hardware, and functionality of the DRE are consistent with Georgia statutes, rules, and regulations regarding voting system components.

Conclusion

The TSx DRE, with Ballot Station 4.5.2! and WinCE 410.3.5 installed, is in conformance with Official Code of the State of Georgia statutes related to voting machines and election administration and the applicable Rules of the State Election Board and Rules of the Secretary of State of Georgia. The source code, updated version of the operating system and related documentation, is consistent with industry standards and is held in escrow at the Center for Election Systems, Kennesaw State University.

The TSx successfully passed all tests in the Test Plan, including the March 17, 2015 election pilot test in Rabun County, Georgia.

Product Description

TSx Direct Record Electronic (DRE) Voting System Unit

- D Tablet
- Ballot Station 4.5.2!
- WinCE 410.3.5
- PCMCIA Memory Card

The TSx DREs used in the test were manufactured by Diebold, Inc. and Premier Election Solutions between 2006 and 2008. All units used were purchased from Premier Election Solutions or ES&S. Memory cards were acquired at purchase and are the standard PCMCIA cards used throughout the state of Georgia. The install program, provided by ES&S, contained an installer and the certified version of Ballot Station 4.5.2!, associated SSL certificate, and WinCE 410.3.5. The install program was validated by comparing hash signatures.

The preparation of election databases and subsequent tabulation of the memory cards was done on a certified and acceptance tested installation of GEMS 1.18.22G!

Overview of the Certification Test

The DRE was tested with the following configurations:

- ExpressPoll 4000, running ExpressPoll software version 2.1.2
- ExpressPoll 5000, running ExpressPoll software version 2.1.2
- The November 2014 voters list for the state of Georgia, including existing Drivers license numbers and voter registration numbers
- Premier Election Solutions TSx units (D tablet), running Ballot Station 4.5.2! and WinCE 410.3.5
- Vision Server, Windows 2000 SP 4, running GEMS 1.18.22G!

Seven (7) TSx DRE units were prepared for the test with validated versions of the Ballot Station 4.5.2! and WinCE 410.3.4 installed. All software was validated through hash signature comparisons. The units were acceptance tested to ensure they conformed to the state certified version. All units passed the state of Georgia DRE acceptance test. Memory cards were prepared with the November 2014 General Election database, used in Gwinnett County.

All units manifested the error condition when attempting to print the summary report.

The DREs were then upgraded to WinCE 410.3.5. All units were acceptance tested and passed. The Certification Tests were repeated. No units manifested errors – all reports were properly initiated and completed.

The units were then downgraded to WinCE 410.3.4 and all tests repeated. All units manifested the error condition.

All units were then upgraded to WinCE 410.3.5 and all tests repeated. No errors were manifested.

The Center staff reviewed testing documentation and results provided by ES&S. All KSU testing methods and test results were compared with those provided by ES&S. The testing at ES&S confirmed the results and conclusions of those tests performed by the Center at KSU.

ES&S Documentation

- Communication Port Interrupt Analysis
- Test Cases: Regression Testing
- Test Cases: Test Run
- System Test Plan

APPENDIX A

Certification Test Plan
of the
TSx DRE with Ballot Station 4.5.2! and WinCE 410.3.5

Overall Objective

The purpose of the test was to verify that 1) an updated version of the DRE's operating system (OS) would correct a printing anomaly; 2) the updated version of the OS had no negative impact on the functionality of the DRE; and 3) the updated DRE worked properly with the rest of the certified voting system.

Phase I: Functionality

The purpose of these tests is to verify that the updated version of the OS permitted the DRE to perform all required DRE functions: vote capture, tabulation, and report printing.

1. Verify that all DREs used in the test pass Georgia's DRE acceptance test.
2. Verify that all DREs used in the test will consistently manifest the printing anomaly when running Ballot Station 4.5.2! and WinCE 410.3.4.
3. Update the DRE OS to WinCE 410.3.5.
4. Verify that the updated DREs pass the Georgia DRE acceptance test.
5. Load November 2014 General Election ballots onto clean memory cards from GEMS 1.18.22G! server.
6. Install memory cards and load elections on DREs.
7. Check summary reports and long reports
8. Vote a set of Logic and Accuracy (L&A) pattern ballots (every position on the ballot, including blank ballots are voted) using standard user interface.
9. Vote L&A ballot set using VIBs (vision impaired ballot) kit.
10. Vote L&A ballot set in magnified screen setting.
11. End the election and verify correct DRE reports
12. Upload memory cards to server and tabulate.
13. Compare vote totals on DREs and Server-generated reports.
14. Restore DREs to 410.3.4 OS.
15. Repeat steps 1 through 13.

Phase II: Interoperability

1. Test DREs with voter access cards created on a DRE.

2. Test DREs with voter access cards created by an ExpressPoll running EZRoster 2.1.2.

3. Test DREs with GEMS servers

4. Test DREs with VIBs kit.

Phase III: Pilot

Fifteen (15) TSx DREs were upgraded to WinCE 410.3.5 and used in the March 17, 2015 election in Rabun County. All units were acceptance tested and all units performed correctly during Logic and Accuracy testing, advanced voting, and Election Day.

Hardware Definition

TSx DREs

- 262912
- 271708
- 280273
- 286367
- 289097
- 289618
- 295211

ExpressPoll 5000

- SOGV013A

Vision Server

- 2138650

Georgia Voter Access Cards

All hardware and software use in this test were Acceptance Tested.

Software Definition

ExpressPoll 2.1.2
Security Key 4.5+
Ballot Station 4.5.2! with WinCE 410.3.4
Ballot Station 4.5.2! with WinCE 410.3.5
GEMS 1.18.22G!

Data Files

The Georgia Acceptance Test Database
State of Georgia Voter Registration List implemented on ExpressPoll
November 2014 General Election database for Gwinnett County

OFFICE OF SECRETARY OF STATE

I, Karen C. Handel, Secretary of State of the State of Georgia, do hereby certify that

the attached one (1) page constitutes a true and correct copy of the certification of the AccuVote TS R6 Voting System, consisting of GEMS Version 1.1822G, AVTS firmware version 4.5.2, AVOS firmware version 1.94W, Encoder software1.3.2, and Key Card Tools 1.0.1, manufactured by Diebold Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas 75069, for use by the electors of the State of Georgia in all primaries and elections as provided in Georgia Election Code 21-2; all as same appear on file in this office.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 27th day of November, in the year of our Lord Two Thousand and Seven and of the Independence of the United States of America the Two Hundred and Thirty-Second.

Karen C Handel

Karen C. Handel, Secretary of State

#2.2, [redacted] #2.4 #2.5 [redacted] #2.10

EXHIBIT 4

Dunning No. 5208

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22	GEMS 1-18-22	AccuVote OS Central Count, Firmware version 2.0.12 (2002) VCProgrammer 4.1.11 (2002)	N-1-06-12-12-005 (1990)	9/17/2004
Diebold	GEMS 1-17-23	GEMS 1-17-23	AccuVote OS Central Count, Firmware version 2.0.12 VCProgrammer 4.1.11	N-1-06-12-12-006 (1990)	9/17/2004
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2	N-1-06-12-12-007 (1990)	1/26/2005
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote TS Precinct Counter Rev 6 Version 1.0.2 Windows CE 3.0 Firmware Version 4.5.2 Express Poll 4000 1.1.5	N-1-06-12-12-009 (1990)	7/7/2005

NASED

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22 & GEMS 1-18-22G	GEMS 1-18-22 & GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2 AccuVote-TSx Precinct Counter Bootloader BLR7-1.2.1 running WCER7-410.2.1 Firmware version 4.6.4 AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 running Windows CE 3.0 Firmware version 4.6.4 AccuVote-OS Precinct Count 1.96.6 Key Card Tool 4.6.1 Express Poll 2000	N-1-06-12-22-010 (1990)	9/21/2005

#2.1
#2.3
#2.4

The Office of Secretary of State

Brian P. Kemp
SECRETARY OF STATE

CERTIFICATION FOR ACCUVOTE UNIT

The AccuVote TSX Voting Unit running AVTS firmware version 4.5.2! with Operating System version 410.3.5 (hereinafter "AccuVote Unit"), owned by Elections Systems & Software (ES&S), 11208 John Galt Boulevard, Omaha, Nebraska 68137, has been examined, tested, and determined to meet the requirements for Certification by this office.

Beginning May 14, 2015, the AccuVote Unit can be used by the electors of this state as provided in the Georgia Election Code for primaries and elections.

This Certification of the AccuVote Unit can be repealed at the discretion of the Secretary of State's office at any time and may be reviewed, reexamined, or retested to ensure that it continues to meet the requirements of this state and this office as a reliable component of the Georgia Electronic Voting System.

IN TESTIMONY WHEREOF, I have set my hand and affixed the seal of my office at the Capitol of the State of Georgia in the City of Atlanta, this day, May 14, 2015.

Brian P. Kemp
Secretary of State of Georgia

STATE OF GEORGIA
CONSTITUTION
WISDOM JUSTICE MODERATION
1776

EXHIBIT
3

214 State Capitol •Atlanta, Georgia 30334 • (404) 656-2881 • (404) 656-0513 Fax
www.sos.ga.gov

THE STATE OF GEORGIA

OFFICE OF SECRETARY OF STATE

I, Brian P. Kemp, Secretary of State of the State of Georgia, do hereby certify that

an interim examination of the Integrated Solutions Area Imaging Bar Code Scanner, Model Number MK 1690-38-12-ISI, has been conducted and found to be in compliance with the applicable provisions of the Georgia Election Code and Rules of the Secretary of State, and as a result of this examination, it appears that this type of bar code scanner can be safely used by the electors of this State; therefore, I hereby approve the use of this type of bar code scanner on an interim basis for use in all primaries and elections as provided in Chapter 2 of Title 21 of the Official Code of Georgia; provided however, I hereby reserve my final approval of this type of bar code scanner until all tests and examinations of said equipment are completed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 6th day of May, in the year of our Lord Two Thousand and Ten and of the Independence of the United States of America the Two Hundred and Thirty-Fourth.

B. P. K.

Brian P. Kemp, Secretary of State

THE STATE OF GEORGIA

OFFICE OF SECRETARY OF STATE

I, Karen C. Handel, Secretary of State of the State of Georgia, do hereby certify that

The AccuVote TS R6 and the AccuVote TSX Voting System, consisting of GEMS version 1.18.22G, AVTS firmware version 4.5.2, AVOS firmware version 1.94w, Encoder software version 1.32, Key Card Tool 1.01, ExpressPoll 4000 and ExpressPoll 5000 firmware version 2.1.2 with card writer 1.1.4.0, manufactured by Premier Election Solutions, Inc. formerly known as Diebold Election Systems, Inc., 1253 Allen Station Parkway, Allen, Texas 75002, has been thoroughly examined and tested and found to be in compliance with the applicable provisions of the Georgia Election Code, the Rules of the Secretary of State, and as a result of this inspection, it is my opinion that this kind of Direct Record Electronic voting system and its components can be safely used by the electors of this state in all primaries and elections as provided in Chapter 2 of Title 21 of the Official Code of Georgia; provided however, I hereby reserve my opinion to reexamine this Direct Record Electronic voting system and its components at anytime so as to ensure that it continues to be one that can be safely used by the voters of this state.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 8th day of May, in the year of our Lord Two Thousand and Eight and of the Independence of the United States of America the Two Hundred and Thirty-Second.

Karen C Handel

Karen C. Handel, Secretary of State

OFFICE OF SECRETARY OF STATE

I, Karen C. Handel, Secretary of State of the State of Georgia, do hereby certify that

the attached one (1) page constitutes a true and correct copy of the certification of the Dell Power Edge Server with service pack 4 for use in the Georgia voting system in all primaries and elections as provided in Georgia Election Code 21-2; all as same appear on file in this office.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 8th day of April, in the year of our Lord Two Thousand and Eight and of the Independence of the United States of America the Two Hundred and Thirty-Second.

Karen C Handel

Karen C. Handel, Secretary of State

OFFICE OF SECRETARY OF STATE

I, Karen C. Handel, Secretary of State of the State of Georgia, do hereby certify that

the attached one (1) page constitutes a true and correct copy of the certification of the AccuVote TS R6 Voting System, consisting of GEMS Version 1.1822G, AVTS firmware version 4.5.2, AVOS firmware version 1.94W, Encoder software1.3.2, and Key Card Tools 1.0.1, manufactured by Diebold Election Systems, Inc., 1611 Wilmeth Road, McKinney, Texas 75069, for use by the electors of the State of Georgia in all primaries and elections as provided in Georgia Election Code 21-2; all as same appear on file in this office.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 27th day of November, in the year of our Lord Two Thousand and Seven and of the Independence of the United States of America the Two Hundred and Thirty-Second.

Karen C Handel

Karen C. Handel, Secretary of State

THE STATE OF GEORGIA

OFFICE OF SECRETARY OF STATE

I, Karen C. Handel, Secretary of State of the State of Georgia, do hereby certify that

The AccuVote TS R6 and the AccuVote TSX Voting System, consisting of GEMS version 1.18.22G, AVTS firmware version 4.5.2, AVOS firmware version 1.94w, Encoder software version 1.32, Key Card Tool 1.01, ExpressPoll 4000 and ExpressPoll 5000 firmware version 2.1.2 with card writer 1.1.4.0, manufactured by Premier Election Solutions, Inc. formerly known as Diebold Election Systems, Inc., 1253 Allen Station Parkway, Allen, Texas 75002, has been thoroughly examined and tested and found to be in compliance with the applicable provisions of the Georgia Election Code, the Rules of the Secretary of State, and as a result of this inspection, it is my opinion that this kind of Direct Record Electronic voting system and its components can be safely used by the electors of this state in all primaries and elections as provided in Chapter 2 of Title 21 of the Official Code of Georgia; provided however, I hereby reserve my opinion to reexamine this Direct Record Electronic voting system and its components at anytime so as to ensure that it continues to be one that can be safely used by the voters of this state.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of my office, at the Capitol, in the City of Atlanta, this 8th day of May, in the year of our Lord Two Thousand and Eight and of the Independence of the United States of America the Two Hundred and Thirty-Second.

Karen C Handel

Karen C. Handel, Secretary of State

EXHIBIT 2

Blumberg No. 5208

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22	GEMS 1-18-22	AccuVote OS Central Count, Firmware version 2.0.12 (2002) VCProgrammer 4.1.11 (2002)	N-1-06-12-12-005 (1990)	9/17/2004
Diebold	GEMS 1-17-23	GEMS 1-17-23	AccuVote OS Central Count, Firmware version 2.0.12 VCProgrammer 4.1.11	N-1-06-12-12-006 (1990)	9/17/2004
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2	N-1-06-12-12-007 (1990)	1/26/2005
Diebold	GEMS 1-18-22G	GEMS 1-18-22G	AccuVote TS Precinct Counter Rev 6 Version 1.0.2 Windows CE 3.0 Firmware Version 4.5.2 Express Poll 4000 1.1.5	N-1-06-12-12-009 (1990)	7/7/2005

NASED Qualified Voting Systems

FINAL

Diebold	GEMS 1-18-22 & GEMS 1-18-22G	GEMS 1-18-22 & GEMS 1-18-22G	AccuVote-TS Precinct Counter Rev 6 version 1.0.2 Windows CE3.0 Firmware version 4.5.2 AccuVote-TSx Precinct Counter Bootloader BLR7-1.2.1 running WCER7-410.2.1 Firmware version 4.6.4 AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 running Windows CE 3.0 Firmware version 4.6.4 AccuVote-OS Precinct Count 1.96.6 Key Card Tool 4.6.1 Express Poll 2000	N-1-06-12-22-010 (1990)	9/21/2005

have an undergraduate degree in Biology and master's degrees in Business Administration and Business Information Systems (Georgia State University).

3.

The Center for Election Systems at Kennesaw State University operates a cooperative project between Kennesaw State University (which is a division of the University System of Georgia) and Office of the Secretary of State of Georgia to study, implement, and maintain electronic voting systems in the State of Georgia. Among its many functions, the Center is involved in overseeing the implementation and use of touchscreen voting systems at polling places throughout Georgia, preparing the ballots used at each precinct in Georgia, and implementing and maintaining the software and hardware used in elections involving touchscreen voting machines in Georgia. The Center takes extensive measures to maintain the integrity and security of that hardware and software and to make sure the vote is counted accurately, securely, and free from fraud.

4.

I was served, as Executive Director of the Center for Election Systems, with two separate subpoenas for the production of evidence related to this case. The first was served on June 1, 2017, containing a request for documents identified in an Exhibit A attached to the subpoena. The second subpoena was served on June

5, 2017, containing a request for documents identified in an Exhibit B attached to the subpoena.

5.

I have reviewed the records maintained by the Center for documents responsive to the two proffered exhibits.

6.

In response to the items sought under Exhibit A in the June 1, 2017, subpoena, the following documents were identified (or the absence of responsive documents was determined):

1. **Attached as Exhibit 1 are two (2) pages from the NASED website http://nased.org. The Center has no additional NASED communications or certification letters on file.**

2. **The most recent state certification in the Center's records is attached as Exhibit 2.**

3. **No documentation in the Center's possession indicating the current use of the encryption key beginning with "F265" have been located. The Center maintains records on encryption keys for voter access cards and supervisor cards, but they do not match the requested string.**

4. **No documents have been located that would indicate whether the current voting system encryption keys used in Georgia are used in other states.**

5. **The Center has no correspondence between CES and election officials concerning the alleged voter registration database intrusion.**

6. **The Center has no correspondence regarding or related to a May 10, 2017, citizens' request to reexamine the voting system.**

7.

In response to the items sought under Exhibit A in the June 1, 2017, subpoena, the following documents were identified (or the absence of responsive documents was determined):

1. **The Center has identified five (5) such records in its possession that are responsive, and copies of each are attached as Exhibit 3.**

2. **Documentation supporting Feb 2014 claim that voting system is federally certified is attached as Exhibit 4.**

3. **Documentation supporting Feb 2014 claim that voting system is state certified is attached as Exhibit 5.**

4. **Documentation supporting the claims attributed to Merle King in the October 31, 2012, Miller County Liberal Op-Ed are contained in the responses found in Exhibits 3-5.**

5. **Documentation supporting the claims attributed to Merle King in the September 9, 2016, Atlanta Journal Constitution article are contained in the responses found in Exhibits 3-5.**

6. **Copies of the two most recent reports prepared by the Center are attached as Exhibit 6.**

7. **The Easy Vote system is not part of the state's voting system, so the premise of the request is flawed. However, a copy of the review prepared by the Center is attached as Exhibit 7.**

8. **The Center has not identified any responsive records in its possession.**

9. **Ballot Station 4.5.2! is the designation for Ballot Station 4.5.2 with an updated SSL certificate for both the R6 and the TSx models. Prior to Ballot Station 4.5.2, software version used was 4.3.14, change made in in 2005. ExpressPoll 2.1.2 replaced ExpressPoll 1.2.53 in 2007. Security Key 4.5+ was updated in 2007. GEMS 1.18.22G! is the designation for 1.18.22G with an updated SSL certificate. Its predecessor was 1.18.15, replaced in 2005.**

10. **Attached as Exhibit 8 is a printout from the NASED website. No further responsive documents have been identified.**

11. **List of approved components of the Georgia Voting System:**

    - **Ballot Station 4.5.2! installed on R6 and TSx DREs, running Windows CE 3.0 and 410.3.5, respectively**
    - **GEMS 1.18.22G! installed on Dell 1900 and Vision servers, running Windows Server 2000, SP4**
    - **ExpressPoll 4000 and 5000 using EZRoster version 2.1.2, Security Key 4.5+ with CardWriter 1.1.4**
    - **Honeywell Barcode scanners model MK1690-38-12-ISI**
    - **AccuVote optical scanner running firmware 1.94W**
    - **Diebold handheld Encoder with software version 1.32 (not in current use, but retains certified status)**

    Communication of the list of certified components to county election officials is not done by the Center.

12. **The EAC did not certify Georgia's voting systems; therefore the premise of the request is flawed and no responsive documents exist.**

13. **One voting system modification has been done under the proffered rule to address a printer anomaly on TSx units, and a certification report is attached as Exhibit 9.**

14. **Modifications to the voting system configuration were made under the proffered rule to accommodate ExpressPoll 5000, Dell 1900 Power Edge**

Server, TSx tablet D, and Honeywell Bar Code Scanner MK1690, and certification reports are attached as Exhibits 10.

Further affiant sayeth not.

Merle S. King
Executive Director
Center for Election Systems

Sworn and subscribed
before me this 7th day
of June, 2017

NOTARY PUBLIC

RACHELL SIMMONS
NOTARY PUBLIC
Fulton County
State of Georgia
My Comm. Expires Oct. 1, 2019

My commission expires: 10-1-19