



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

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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, Cyber 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, Cyber 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 or 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

Absentee
Voter
Cards
#121216

Absentee
Voting
Station
#110002

Blackshear
Voting Station
#123461

Blackshear
Voting Station
#114187

Hackelbarney
Voting Station
#116372

Hackelbarney
Voting Station
#116669

Pierce County

Absentee
Voter
Cards
#116217

Absentee
Voting
Station
#128124

Forest Park 2
Voting Station
#115673

Forest Park 2
Voting Station
#121606

Forest Park 6
Voting Station
#114995

Forest Park 6
Voting Station
#113438

Clayton County

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 is 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 is 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