


Exhibit R



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07/11/2005 02:21 PM

To "Brit Williams" <[REDACTED]>, "Freeman, Steve"
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cc
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Subject GEMS 1-18-22G update

History:  This message has been forwarded.

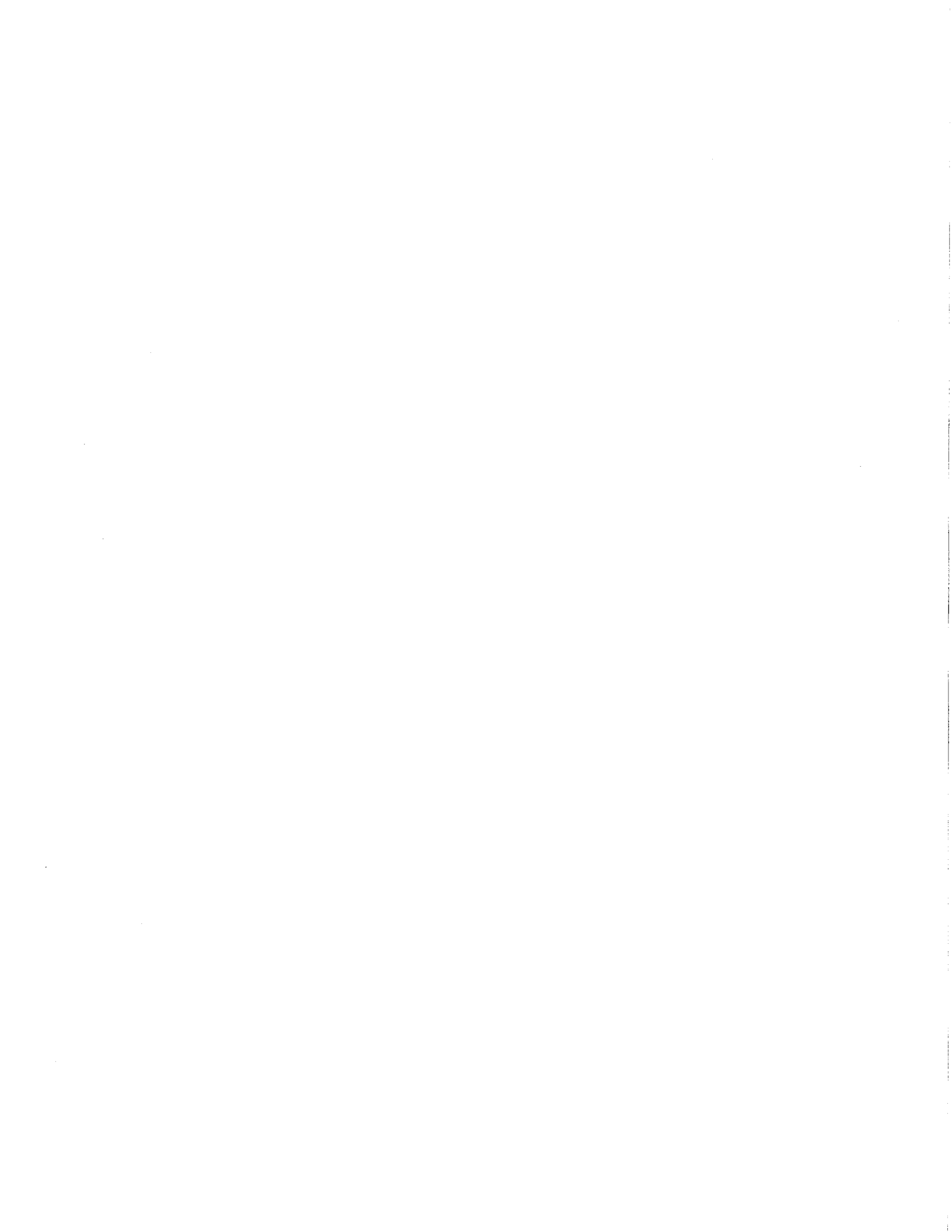
All,

Here is the report for GEMS 1-18-22G. This release only adds the Express Poll 4000 to the previously qualified system.

Thanks,



Shawn 2005-07-08 GEMS 1-18-22G Final Report A10.pdf



Software Functional Test Report

Diebold Election Systems

GEMS 1-18

Original Report Version 1.0 for GEMS 1-18-15 created 1/03/03

Addendum 1 for GEMS 1-18-15 created 3/18/03

Addendum 2 for GEMS 1-18-18 created 7/08/03

Addendum 3 for GEMS 1-18-19 created 2/03/04

Addendum 4 for GEMS 1-18-19 created 5/10/04

Addendum 5 for GEMS 1-18-22 created 7/21/04

Addendum 6 for GEMS 1-18-19 and 1-18-22 created 9/17/04

Addendum 7 for GEMS 1-18-19 and 1-18-22 created 10/05/04

Addendum 8 for GEMS 1-18-22G created 01/26/05

Addendum 9 for GEMS 1-18-22 created 04/15/05

Addendum 10 for GEMS 1-18-22G created 7/08/05

Vendor: Diebold Election Systems

Software: GEMS 1-18

Prepared By: CIBER, Inc.

Test Report
Diebold Election Systems GEMS 1-18-22G

Description.....1

Summary of Reports and Addendums.....3

1 DESCRIPTION

Diebold added the Express Poll 4000, an Electronic Roster and Voter Access Card Writer, to its set of precinct election management tools. CIBER was requested to perform a system level test of the Express Poll with the previously qualified GEMS 1-18-22G and the AccuVote TS-R6 running 4.5.2 firmware. Only the Voter Access Card Writer portion of the Express Poll 4000 was included as a part of this testing.

Software Review

CIBER performed a Source Code Review of the Voter Access Card Writer portions of the Express Poll 1.1.5. After changes were completed, a witness of the Build was performed. The creation date of the final version was 6/30/05.

Technical Data Package (TDP) Review

A TDP review was performed and the following documents were reviewed:

| Component | Document | Revision |
|---|---|----------|
| ExpressPoll 4000 | 2.01 TDP Introduction | Rev. 2.0 |
| | 2.02 System Overview | Rev. 2.0 |
| | 2.03 System Functionality Description | Rev. 2.0 |
| | 2.05 Software Design and Specification | Rev. 2.0 |
| | 2.06 System Security Specifications | Rev. 2.0 |
| | 2.07 System Test and Verification Specifications | Rev. 2.0 |
| | 2.08 System Operations Procedures | Rev. 2.0 |
| | 2.10 Personnel Deployment and Training Requirements | Rev. 2.0 |
| | 2.11 Configuration Management Plan | Rev. 2.0 |
| | 2.12 Quality Assurance Program | Rev. 2.0 |
| | 2.13 System Change Notes | Rev. 2.0 |
| | 2.14 Telecommunications | |
| | Appendix A: Software Specifications | Rev. 2.0 |
| | Appendix B: Program Structure and Flow | Rev. 2.0 |
| | Appendix C: Data Organization and Flow | Rev. 2.0 |
| | Appendix D: Software Build Process | Rev. 2.0 |
| | Appendix E: Installation Procedures | Rev. 2.0 |
| | Appendix F: Procurement Certification | Rev. 2.0 |
| | Appendix G: Performance Metrics | Rev. 2.0 |
| | Appendix H: System and Data Integrity | Rev. 2.0 |
| Appendix I: Hardware Component Specifications | Rev. 2.0 | |
| Appendix J: Configuration Management | Rev. 2.0 | |
| Appendix K: Quality Assurance Methodology | Rev. 2.0 | |
| Appendix L: Test Plans | Rev. 2.0 | |
| Appendix M: Administrative Test Plans | Rev. 2.0 | |
| Appendix N: Bugzilla | Rev. 2.0 | |
| Appendix O: Coding Style | Rev. 2.0 | |
| Appendix P: Documentation Standards | Rev. 2.0 | |

| | | |
|--|---|----------|
| | Appendix Q: Client Security Policy | Rev. 2.0 |
| | Appendix R: Training Programs | Rev. 2.0 |
| | Appendix S: Development Office Backup Guide | Rev. 2.0 |
| | Appendix T: System Acquisition | Rev. 2.0 |
| | Appendix U: Support Revision 2.0 | Rev. 2.0 |
| | Appendix V: Windows CE Security | Rev. 2.0 |
| | FVSS 2002 Vendor Testing and TDP Trace | Rev. 2.0 |
| | Election Administrator's Guide | Rev. 2.0 |
| | System Administrator's Guide | Rev. 2.0 |
| | User's Guide | Rev. 2.0 |

Functional Testing

CIBER has completed the functional testing of the Express Poll 4000 with GEMS 1-18-22G. Voter cards were created on the Express Poll and tested on the AccuVote TS-R6 running Firmware Version 4.5.2.

CIBER performed the following tests:

- ❑ Created a General Election database using GEMS 1-18-22G
- ❑ Submitted the database to Diebold for creation of a Voter Registration database
- ❑ Loaded Voter Registration database on the Express Poll and downloaded election to the AccuVote TS-R6
- ❑ Created voter cards on the Express Poll 4000 and voted the election on the AccuVote TS-R6
- ❑ Uploaded the results to GEMS
- ❑ Compared GEMS election result reports to the AccuVote TS-R6 reports
- ❑ Reviewed Audit Logs

The successful completion of these tests verified that the Express Poll 4000 functioned as designed with GEMS 1-18-22G and the AccuVoteTS-R6 running 4.5.2 firmware.

Summary of Reports and Addendums

The purpose of this summary is to provide a quick reference of the progression of testing that was performed from the original report through all the addendum reports. For specific details please see the appropriate report or addendum.

Original Report Created 01-03-03

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|---|---------------------|-------------------------|
| GEMS 1-18-15 (1990) | AccuVote-OS Precinct counter (Optical Scan) 1.94w (1990) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.13. | GEMS 1-18-15 (1990) | GEMS TDP 1-18-15 (1990) |

The original report consisted of full TDP and source code review to the 1990 standards, and a full functional system integration test to 1990 standards.

Addendum 1 Created 03-18-03

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|--|---------------------|-------------------------|
| GEMS 1-18-15 (1990) | AccuVote-OS Precinct counter (Optical Scan) 1.94w (1990) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.14 (1990). | GEMS 1-18-15 (1990) | GEMS TDP 1-18-15 (1990) |

Addendum 1 consisted of testing GEMS 1-18-15 with newer versions of the firmware on the AccuVote-TS (which were tested by the hardware ITA). A full functional system integration test to 1990 standards was performed.

Addendum 2 Created 07-08-03

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|---|---------------------|-------------------------|
| GEMS 1-18-18 (1990) | AccuVote-OS Precinct counter (Optical Scan) 1.94w (1990) AccuVote-OS Precinct counter (Optical Scan) 1.96.4 (1990) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.14 (1990) & version 4.3.15 (1990). | GEMS 1-18-18 (1990) | GEMS TDP 1-18-18 (1990) |

Addendum 2 reported testing of changes between GEMS 1-18-15 and 1-18-18. These changes included modifications and additions of reports, additional logging capabilities, fixes and additions of import and export utilities, fixes to Ballot viewer and the addition of support for audio. It also added new firmware versions to the test suite for the AccuVote-OS and AccuVote-TS. A full functional system integration test to 1990 standards was performed.

Addendum 3 Created 02-03-04

| Integration Test Suite | Hardware | Source Code | TDP |
|--|--|--------------------------|--------------------------------|
| GEMS 1-18-19 Changes from 1-18-18 tested to (2002) | AccuVote-OS Precinct counter (Optical Scan) 1.94w (1990) AccuVote-OS Precinct counter (Optical Scan) 1.96.4 (1990) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.15C*. | GEMS 1-18-19 (1990-2002) | GEMS TDP 1-18-19 (1990 - 2002) |

Addendum 3 reported testing of changes between GEMS 1-18-19 and 1-18-19. These changes consisted of additional security features, modified reports, and fixes to problems discovered as a part of Diebold’s internal test process. All source code and TDP changes were reviewed to the 2002 standards. A full functional system integration test to 2002 standards was performed.

*This version of the firmware was used during the full functional system integration test, but was withdrawn from qualification.

Addendum 4 Created 05-10-04

| Integration Test Suite | Hardware | Source Code | TDP |
|---|--|---|--|
| GEMS 1-18-19 Changes from 1-18-18 tested to (2002) | <p>AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) Bootloader 1.0.2 (06-07-02) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.15D (1990).</p> <p>AccuVote-TSx precinct counter (Touch Screen) Bootloader 4-16-04 running Windows CE 4.10 (02-05-04) operating system. Firmware Version 4.4.5 (2002)</p> <p>Voter Card Encoder (Spyrus) VCE 1.3.2 (2002)</p> | <p>GEMS 1-18-19 (1990-2002)</p> <p>Key Card Utility 1.01 (2002)</p> | <p>GEMS TDP 1-18-19 (1990 - 2002)</p> <p>Key Card Utility Users Guide (2002)</p> |

Addendum 4 reported testing GEMS 1-18-19 with the newer version of firmware for the AccuVote-TS R6 and the AccuVote-TSx, testing GEMS with the Voter Card Encoder and testing the Key Card Utility. All functional system integration testing was performed to the 2002 standards. All changes and additions to the source code and TDP were reviewed to the 2002 standards. The base version of GEMS 1-18-19 did not change from the previous qualification.

Addendum 5 Created 07-21-04

| Integration Test Suite | Hardware | Source Code | TDP |
|---|--|---|---|
| GEMS 1-18-22 Changes from 1-18-19 tested to (2002) | <p>AccuVote-OS Precinct counter (Optical Scan) 1.94w (1990)</p> <p>AccuVote-OS Precinct counter (Optical Scan) 1.96.4 (1990)</p> <p>AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.3.15D</p> <p>AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.5.1</p> <p>AccuVote-TSx precinct counter (Touch Screen) Bootloader 4-16-04 running Windows CE 4.10 (02-05-04) operating system. Firmware Version 4.4.5 (2002)</p> <p>Voter Card Encoder (Spyrus) VCE 1.3.2 (2002)</p> | <p>GEMS 1-18-22 (1990-2002)</p> <p>Key Card Utility 1.01 (2002)</p> | <p>GEMS 1.18 User Guide 1-18 Revision 11 (1990 - 2002)</p> <p>GEMS 1.18 Election Administrator Guide Revision 5.0 (1990 - 2002)</p> <p>GEMS 1.18 Reference Guide Revision 6.0 (1990 – 2002)</p> <p>Change Release Notes</p> |

Addendum 5 reported testing the changes from GEMS 1-18-19 to 1-18-22. All source code and TDP changes were reviewed to the 2002 standards. Functional testing consisted of testing GEMS 1-18-22 with the AccuVote-OS, testing GEMS with the newer version of firmware for the AccuVote-TS R6 and the AccuVote-TSx, testing GEMS with the Voter Card Encoder, and testing GEMS with the Key Card Utility.

Addendum 6 Created 09-16-04

| Integration Test Suite | Hardware | Source Code | TDP |
|--|---|----------------------------|---|
| GEMS 1-18-19 and GEMS 1-18-22 tested with new devices (2002) | AccuVote-OS Central Counter (Optical Scan) 2.0.12(2002) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.5.1 VCProgrammer 4.1.11 | VCProgrammer 4.1.11 (2002) | VCProgrammer 4.1 Technical Data Package (2002) AccuVote-OS Central Count 2.0 Technical Data Package (2002) |

Addendum 6 reported testing GEMS 1-18-19 and GEMS 1-18-22 with the VCProgrammer and the AccuVote-OS running firmware revision 2.0.12. All functional system integration testing was performed to the 2002 standards. The source code and TDP for the VCProgrammer and the AccuVote-OS were reviewed to the 2002 standards. The base versions of GEMS 1-18-19 and 1-18-22 (1990) did not change from the previous qualification.

Addendum 7 Created 10-05-04

| Integration Test Suite | Hardware | Source Code | TDP |
|--|--|----------------------------|---|
| GEMS 1-18-19 and GEMS 1-18-22 tested with new devices (2002) | AccuVote-OS Central Counter (Optical Scan) 2.0.12(2002) AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.5.2 | VCProgrammer 4.1.11 (2002) | VCProgrammer 4.1 Technical Data Package (2002) AccuVote-OS Central Count 2.0 Technical Data Package (2002) |

Addendum 8 Created 01-26-05

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|---|---------------|-----|
| GEMS 1-18-22G | AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.5.2 | GEMS 1-18-22G | |

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Addendum 9 Created 04-15-05

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|---|--------------|-----|
| GEMS 1-18-22 | AccuVote-TSx precinct counter (Touch Screen) Bootloader BLR7-1.2.1 running WCER7-410.2.1 Firmware Version 4.6.1 (2002) | GEMS 1-18-22 | |

Addendum 10 Created 07-07-05

| Integration Test Suite | Hardware | Source Code | TDP |
|------------------------|--|--------------------|-----------------------------------|
| GEMS 1-18-22G | AccuVote-TS Precinct Counter Rev 6 Version 1.0.2 (Touch Screen) running Windows CE3.0, 8/08/02 operating system. Firmware version 4.5.2 Express Poll 4000 | Express Poll 1.1.5 | Express Poll 4000 TDP Version 2.0 |

Addendum 10 consisted of a full TDP and source code review of the Express Poll 4000 to the 2002 standards, and a functional system integration test with GEMS 1-18-22G and the AccuVote TS-R6 (4.5.2 firmware).

Summary

The following is a list of all the latest components that have been tested and recommended for qualification for the most current version of the system suite:

GEMS 1-18-19

GEMS 1-18-22

GEMS 1-18-22G

AccuVote-OS Precinct Counter (Optical Scan) 1.94w (1990)

AccuVote-OS Precinct Counter (Optical Scan) 1.96.4 (1990)

AccuVote-OS Central Count (Optical Scan) 2.0.12 (2002)

AccuVote-TS R6 Precinct Counter Firmware version 4.3.15D (1990)

AccuVote-TS R6 Precinct Counter Firmware version 4.5.2 (2002)

AccuVote-TSx Precinct Counter Firmware Version 4.5.2 (2002)

AccuVote-TSx Precinct Counter Firmware Version 4.6.1 (2002)

Voter Card Encoder (Spyrus) VCE 1.3.2 (2002)

Key Card Utility 1.01 (2002)

VCProgrammer 4.1.11(2002)

Express Poll 4000 Software Version 1.1.5

GEMS 1.18 User Guide 1-18 Revision 11 (1990 - 2002)

GEMS 1.18 Election Administrator Guide Revision 5.0 (1990 - 2002)

GEMS 1.18 Reference Guide Revision 6.0 (1990 – 2002)

Express Poll 4000 TDP Version 2.0

