COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF STATE

RE-EXAMINATION RESULTS OF THE ADVANCED VOTING SOLUTIONS WINvote DIRECT RECORDING ELECTRONIC VOTING SYSTEM WITH WINware ELECTION MANAGEMENT SOFTWARE, VERSION 2.0.3

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Pedro A. Cortés

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Secretary of the Commonwealth
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A REPORT BY THE SECRETARY OF THE COMMONWEALTH OF PENNSYLVANIA

I. INTRODUCTION

Article XI-A of the Pennsylvania Election Code, 25 P.S. § 3031.1 et seq., authorizes the use of electronic voting systems. Section 1105-A of the Election Code, 25 P.S. § 3031.5, requires all electronic voting systems to be examined and approved by the Secretary of the Commonwealth ("Secretary") before use in any election in Pennsylvania.

Pennsylvania statutes and procedures in the Department of State ("Department") provide for re-examination of voting systems under certain circumstances. Following the November 2006 General Election the Department received information that Advanced had deployed uncertified hardware and an uncertified version of software in the three counties using its system. Additionally, concerns were raised about the repair of circuit boards within the machines that occurred before the election. The Department scheduled a re-examination of the WINvote Direct Recording Electronic voting system with WINware, Version 2.0.3, for December 27, 2006. The re-exam was completed on January 3, 2007. The Department has received confirmation from Ciber Labs, a federally recognized independent testing authority (ITA) that the System's hardware and software have successfully completed qualification testing in compliance with the Federal Election Commission 2002 Voting System Standards.

The Secretary retained M. Glenn Newkirk, President, InfoSENTRY Services, Inc., as a consultant to conduct an electronic voting system re-examination on December 27, 2006. Harry A. VanSickle, Commissioner of the Bureau of Commissions, Elections and Legislation; Larry Boyle, Deputy Chief Counsel; Dave Burgess, Chief Information Officer; Jessica Myers, Chief, Division of HAVA; and Suzanne Seitz, HAVA Assistant; represented the Secretary. Kimberlee Shoup-Yeahl and Tim Scott represented Advanced.

II. THE WINvote ELECTRONIC VOTING SYSTEM WITH WINware ELECTION MANAGEMENT SOFTWARE

The Department received notice that the three counties used Version 2.0.3 of WINware during the General Election of 2006 instead of the certified Version 2.0.2. This re-exam looked specifically at the changes made between these versions.

The following paragraphs in this section briefly describe the functions of the System as summarized by the vendor.

The system is comprised of four main components:

- **WINvote** voting device (Election administration interface, poll worker interface and voter interface).
- **WINware** (Election management software).
- **WINprep** software (Election setup and ballot layout).
- **WINresults** software (Election results tallying and reporting).

The **WINvote** is a touch-screen voting terminal with a 15" color screen, and built-in battery backup power, modem, and printer. The unit is contained in a polystyrene plastic voting booth and transportation case. The unit is fully accessible to all voters, prevents over-voting and warns of under-voting.

WINware is the election management software for the System. This version has become WINware, Version 2.0.3 after moving completely through ITA testing.

WINprep is a software application designed to enable the county election official to perform all aspects of the election programming process. WINprep requires six steps to complete election programming from ballot layout through upload and central tally.

WINresults is a comprehensive tabulation, accumulation and reporting system. The method of manual transfer requires a poll worker to transport the WINvote ballot station to the county board of elections or, if election procedures permit, the Universal Serial Bus ("USB") drive may be removed from the ballot station and transported via vehicle to the county board of elections. During that process, however, other data including hardware, diagnostic test logs, ballot images, ballot cast logs, operational audit logs and user activity from the polling location are collected and stored in single USB type memory devices for future archive and audit use.

III. RE-EXAMINATION PROCEDURES AND RESULTS

Before requesting a re-examination, the Department, the Examiner and Advanced participated in several phone calls to determine what had happened leading up to the November 2006 election and what, if anything, the new version of software changed. The Department decided to have a re-examination to determine if the current version of WINware had any material characteristics that would have rendered it non-compliant with Pennsylvania requirements. Following a review of the Technical Data Package, the re-examination was set for December 27, 2006. Before the re-examination, there was an in-depth discussion of what led to Version 2.0.3's installation and use in the General Election. The Department and the Examiner noted during this conversation (and as in previous discussions) that Advanced conducted this installation without a re-examination or demonstration prior to using this version.

At the re-examination conducted on December 27, 2006, and January 3, 2007, the consultant tested the System for the statutory requirements specified in section 1107-A of the Election Code, 25 P.S. § 3031.7. This re-examination focused on particular issues or concerns raised by changing versions. The vendor demonstrated the changes made to WINware. These changes dealt with password modification. The vendor changed the system from static passwords (used in the previous version) to dynamic passwords (used in version 2.0.3). The consultant and Department representatives asked questions of the vendor and requested demonstrations of various features before conducting the Pennsylvania Standardized Test ("Test"). The first Test was a set of 12 Municipal Primary ballots (6 Democratic and 6 Republican). The second Test was a set of 12 General Election ballots. During the second test, the test team realized that Advanced had loaded an incorrect version of the test election file on the voting system. The second half of the re-examination was suspended until January 3, 2007. The General Election test was completed, and there were no anomalies.

The System accurately tabulated the results of the Test; however, based on the results of the re-examination, including the answers to questions provided by the vendor and the advice provided by the Department's consultant, the following concerns were raised by the Department.

1. Advanced's installation of version 2.0.3 of their voting system in Northampton, Lackawanna, and Wayne counties did not follow documented procedures for standard software configuration management or Pennsylvania's election certification requirements.
2. Advanced made a proactive attempt to remedy a problem identified by its equipment manufacturer, but did not provide sufficient notice to the counties or the Department before carrying out their hardware repairs. The repair of soldering work to circuit boards in several machines in each of the counties was a protective measure to prevent malfunction on Election Day; however, the Counties and the Department were not adequately informed prior to these repairs about why they were necessary and which machines required repair.
3. During ballot casting in the General Election re-examination, the Department discovered that Advanced had not set-up the ballot to allow selection of straight Independent candidates. This accompanied with the test system being prepared with an incorrect database on December 27, 2006, led to concerns about the vendor's preparation for the re-examination.

IV. CONDITIONS/RECOMMENDATIONS

Conditions for Certification

The following conditions must be adhered to for certification:

1. **Advanced shall provide the Department with a documented, formal process of notification and sign-off for all hardware and software configuration changes introduced unto any voting system it sells or supports in the Commonwealth.**

2. **Advanced shall provide the Department and each county a list of all devices in which it replaced circuit boards or undertook corrective soldering on circuit boards. Advanced should provide the Department or counties with technical support, should they choose to inspect these particular machines.**

3. **Modems shall not be used to transmit official or unofficial election results.**

4. **Advanced shall only provide desktop or tower computers for use with their System; Laptops shall not be used.**

5. **Wireless LANs are to be used only for warehouse activities and shall not be used in the polling place.**

6. **The System's user manuals shall instruct election officials as to how to properly utilize USB drives in the post-election environment, including the importation of election results from the USB into WINresults, and how to identify smart cards for specific use during the conduct of elections.**

Recommendations

The Secretary suggests the following recommendations for future versions of the System:

1. **Advanced should consider the mistakes made during the re-examination as a demonstration that better preparation is necessary prior to examinations.**
2. **Advanced will notify the Department and Counties of any changes made to the System by the vendor. These changes will be documented and detailed to the Department and the County before any change is made.**

V. CONCLUSIONS

Although the reasons listed in Section III of this report were items of concern for the Department and the consultant, Advanced demonstrated through written correspondence and during the Department of State's reexamination that each item had been remedied to the satisfaction of the Department. **It still remains imperative that all counties and Advanced adhere to the conditions set forth in Section IV.** Therefore, as a result of the re-examination held on December 27, 2006, (completed on January 3, 2007), written correspondence from Advanced, and consultation between the Department's staff and the Department's consultant, including a review of the consultant's report, the Secretary of the Commonwealth hereby approves the WINvote electronic voting system with WINware election management software, version 2.0.3, for use in elections in the Commonwealth of Pennsylvania. Each WINvote unit can reasonably be expected to accommodate at least 300 voters per election.

In addition, pursuant to the Directive on Electronic Voting Systems issued by the Secretary of the Commonwealth on July 22, 2005 and to section 1105-A(d) of the Pennsylvania Election Code, 25 P.S. § 3031.5(d), this certification is valid only for the voting system examined on December 27, 2006 and January 3, 2007. If the vendor makes *any* changes to the system subsequent to December 27, 2006 and January 3, 2007, it must *immediately* notify both the Pennsylvania Department of State and the relevant federal ITAs or their successors. Failure to do so may result in the decertification of this voting System in the Commonwealth of Pennsylvania.

All jurisdictions implementing this System for use must comply with the conditions and requirements found in this report and any directives issued by the Secretary of the Commonwealth regarding the use of this System, in accordance with section 1105-A(a-b) of the Pennsylvania Election Code, 25 P.S. § 3031.5(a-b).