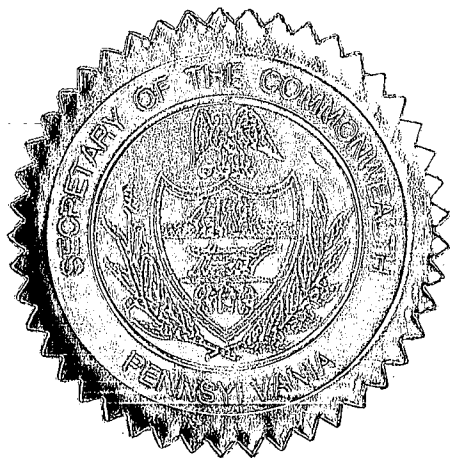


**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF STATE**

**AMENDED CERTIFICATION OF ELECTION SYSTEMS & SOFTWARE,  
INC., UNITY SOFTWARE, VERSION 3.0.1.0, WITH DATA ACQUISITION  
MANAGER, VERSION 6.0.0.0**



**Issued by:**

*Pedro A. Cortés*

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**Pedro A. Cortés**  
**Secretary of the Commonwealth**  
**June 25, 2007**

**AMENDED CERTIFICATION OF ELECTION SYSTEMS & SOFTWARE,  
INC., UNITY SOFTWARE, VERSION 3.0.1.0, WITH DATA ACQUISITION  
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**AN AMENDED 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 before use in any election in Pennsylvania.

Upon the request of Elections Systems and Software, Inc. (ES & S), the Department of State's Bureau of Commissions, Elections and Legislation (Department) scheduled a demonstration for March 7, 2007 of the Unity Software (Unity), version 3.0.1.0; specifically focusing on the previously uncertified Data Acquisition Manager (DAM), version 6.0.0.0. The Department accepted the request from ES & S to inspect this software component. DAM is a software component of Unity which transmits, in a secure and stable process, vote totals from satellite locations to a central facility for county-wide tabulation. Allegheny County would like to use this capability in upcoming elections to enable faster tabulation of unofficial results. For this reason, ES & S requested an examination.

The Secretary of the Commonwealth retained Dr. Michael Shamos as a consultant to witness the electronic voting system demonstration on March 7, 2007. Harry A. VanSickle, Commissioner of the Bureau of Commissions, Elections & Legislation; Larry Boyle, Deputy Chief Counsel; Chet Harhut, Deputy Commissioner of the Bureau of Commissions, Elections & Legislation; and Julio Peña, Chief of the Division of Help America Vote Act (HAVA) represented the Secretary of the Commonwealth. Also in attendance were representatives from ES & S.

**II. NECESSITY TO REVIEW, AMEND AND REITERATE THE ES & S  
CERTIFICATION**

An amendment to the certification given on April 7, 2006, is necessary due to changes in the DAM software.

Before testing DAM, votes must be cast on the iVotronic voting system units. After voting the ballots, the DAM client and host were configured for communication over a phone line. This process is completed without the software having any connection to the voting system units.

Once this process is complete, the personalized electronic ballots (PEB) are inserted into a pack reader at the client. The PEBs can be read before any modem connection is established for transmission of results only after the connection is opened. Utilizing the Unity program, DAM software, running the modem manager, and creating a modem connection each require a separate password.

After the data is sent from the client to the host, reports are produced in Election Reporting Manager (ERM). Upon completion of this process during the examination, the vote totals generated in the report by the ERM were compared to those recorded in the iVotronic. The results reported by ERM were identical to the totals obtained on the iVotronic.

At this point, it is important to distinguish between unofficial and official results or totals. The Pennsylvania Election Code does not make a distinction between official and unofficial totals. Generally, the results reported on Election Night are considered "unofficial." "Official" results are those tabulated at the polling place, printed on the tapes, and signed by election officials. The DAM software would be used to gather unofficial results in Pennsylvania; especially in counties with a large number of polling places to report, such as Allegheny County.

The proposed method of use for DAM software in the Commonwealth does not, at any point, require a voting system unit to be connected to a modem or phone line. PEBs from polling places are physically transported to a handful of regional centers. At the regional centers, they are read with PEB readers. A modem connection is established between the PEB reader and the county server to upload unofficial results.

Before an election begins, the DAM client is configured. After the polls close, regional centers will use these modem connections to transmit data to the central office. DAM can load results simultaneously, so results from different regions can be loaded at the same time. Unity and DAM keep inventory files with a list of the voting system units used in each jurisdiction so the system will know when all PEBs are read. Furthermore, the data transmitted from the readers to the county is encrypted, making it very difficult for anyone without the necessary keys and passwords to access the system. Serial numbers of PEBs that have been read are transmitted along with results, to prevent an intruder from "spoofing" a PEB. The final security feature to ensure the accuracy of the unofficial vote totals is a comparison to the official results tapes produced by the voting system units. Any discrepancies between the unofficial results transmitted via DAM and the official results contained on the printed tapes are easily detected.

The DAM software can be used with the PEBs from iVotronic voting systems units and/or the M 100 or M 650 scanners certified for use in the Commonwealth.

On the recommendation of Dr. Shamos, the certification given on April 7, 2006, is extended to include Data Acquisition Manager, Version 6.0.0.0, to be used with Unity Software, version 3.0.1.0.

### III. CONDITIONS

There are four conditions which must be met for use of this software:

1. The only software allowed to run on the DAM client is Unity, Version 3.0.1.0.
2. The only software allowed to run on the DAM host is Unity, Version 3.0.1.0
3. Voting machines cannot be connected to a telephone line, a network, internet, or an active modem at any time.
4. The computer holding the DAM host and client software may not be connected to the internet at any time.

Before any county could use this software in an election, a proposed model must be reviewed and approved by the Department. This review will be conducted by the Department and its consultant. Approval will be granted on a case by case basis.

### IV. CONCLUSION

As a result of the examination conducted on March 7, 2007, and after consultation with the Department's staff and consultant, the Data Acquisition Manager, version 6.0.0.0, is approved and the certification given on April 7, 2006, is extended to cover the Data Acquisition Manager, versions 6.0.0.0, provided the conditions listed above are met and followed.

In addition, pursuant to the Directive on Electronic Voting Systems issued by the Secretary of the Commonwealth on August 8, 2006 and to Section 1105-A(d) of the Pennsylvania Election Code, 25 P.S. § 3031.5(d) this certification is valid only for the System discussed in this report. If the vendor makes *any* changes to the System subsequent to the date of its examination, it must *immediately* notify both the Pennsylvania Department of State and the relevant federal Independent Testing Authorities, 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 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 Election Code, 25 P.S. § 3031.5(a-b).