

Testimony Regarding Commercial-Off-The-Shelf Hardware/Software

Steve Pearson

Vice President, Certification, Election Systems & Software (ES&S)

September 2, 2009

On behalf of Election Systems & Software (“ES&S”), I appreciate the opportunity to talk with you today on this important topic. ES&S has a long history of delivering to jurisdictions voting systems that meet all established standards for security, accuracy, reliability and durability. Our systems have been rigorously tested and evaluated for many years by independent experts as part of national and state-level certification programs. ES&S fully recognizes the importance of the federal certification process and are fully committed to work with the EAC to better meet the needs of voters and election officials. Our company currently provides voting systems and support services to a client base in 39 states with more than 4,000 election offices.

We also recognize the importance (and the challenge) of providing these secure, accurate, and reliable voting systems that have sufficient design characteristics to support this broad and diverse customer base in the fast moving and ever-changing computer technology environment we are all in. For this reason, ES&S has made great efforts to ensure our election management system computer environment has the hardware independence that offer our clients the flexibility to use their current platforms as long as they meet or exceed our published and certified minimum specifications and in accordance with the Federal Election Commission’s 2002 Voting System Standard (“VSS”) and Election Assistance Commission’s 2005 Voluntary Voting System Guidelines (“VVSG”).

VSS Volume I, Section 9.3 and VVSG Volume II, Section 1.6, Voting Equipment Submitted by Vendor, both state the following language:

The system submitted for testing shall meet the following requirements:

- a. The hardware submitted for certification testing shall be equivalent, in form and function, to the actual production version of the hardware units or the COTS hardware specified for use in the TDP*

- b. The software submitted for certification testing shall be the exact software that will be used in production units*

These standards make a clear distinction of the differences between the management of software and COTS hardware. Software submitted for certification testing shall be the “exact” software that will be used in production while the hardware submitted for

certification testing shall be “equivalent, in form and function”, to the actual production version of the hardware units or COTS hardware specified for use in the TDP.

There are a number of key points we encourage the EAC to consider before making a final determination:

1. The EAC should recognize that jurisdictions desire to use the computing equipment they currently have. Counties and states are virtually all financially burdened. With the advent of HAVA, most jurisdictions across the country have made major investments in their IT infrastructure in the past two to three years. Adoption of an EAC requirement to only permit specific PC brands and models that were used in certification testing will likely obsolete their current equipment. It is our opinion states and counties will not adhere to this requirement and be left with no choice but to certify these systems for use in their states on PC equipment meeting the minimal specifications identified in the voting system manufacturer’s tested configuration. We are concerned this will have a negative effect between the EAC Testing and Certification Program and the state election directors.
2. The number of brands and models of PC’s is a very, very long list. To try to qualify all brands and models is overburdening to the certification process with little or no benefit. It is important the value of the task is commensurate to the effort in cost, time, and risk.
3. Should the EAC determine only specified PC brands and models used in the certification testing can be used in county deployments, how would each respective PC manufacturer be held accountable for ongoing hardware engineering change orders (ECO’s) to the certified models? Given the fluid nature of electronics manufacturing, hardware change orders are very frequent, primarily due to end-of-life components, step-changes in components by the sub-component suppliers, and suppliers going out of business. Would COTS hardware manufacturers be obligated to report such changes as they occur? Who would they report them to? What would the validation process be for such changes? Should the EAC adopt this approach, we believe it should be the responsibility of the EAC to perform such validation. It is our opinion this approach opens up another set of expensive and difficult-to-manage procedures for a low risk, low reward concern.

And at what point does it stop? If the EAC chooses a path that certifies only the specific makes and models, are they also going to specify each of the peripherals

(e.g. keyboards, monitors, mice, CD brands, routers, switches, USB hubs, power cords, power strips, mouse pads, etc.)?

4. For our election management software environments (“EMS”), ES&S utilizes Microsoft Windows and only Windows compliant COTS drivers to be run on only Windows approved platforms. The Microsoft Windows operating system is the insulator from the hardware. Windows is the insulator to making the hardware all operate the same way.

ES&S’ approach uses well behaved applications with no direct access to registers, I/O ports, etc., using only standard Windows features, standard Windows device drivers from approved providers, and common industry data formats such as PDF. By taking this approach we allow our county customers the maximum flexibility to choose to use their existing equipment or even acquire the newer PC technology, as long as it meets or exceeds our published minimum specifications for the EMS environment that was certified.

5. The length of time required to complete a certification is another key factor for the EAC to consider regarding this matter. The certification of ES&S’ Unity 3.2.0.0 required 28 months from time of application to the date of issuance of the Certificate of Conformance. What was considered ‘state-of-the-art’ PC technology at the start of a certification is most likely no longer considered state-of-the art or most efficient (both in cost and performance) nearly 2.5 years later.
6. We are also concerned of where an EAC policy that specifies makes and models of COTS PCs, servers, and peripheral equipment would lead us. Such a policy would force us to abandon the COTS PC solution and lead to the voting system providers producing proprietary designed and manufactured PCs, which would allow us to control the hardware, engineering changes (ECO’s), etc. But this is how you get the \$500 hammer. A custom ES&S PC would be a \$10,000 PC.

Thank you for the opportunity to offer our input and participate in this discussion.