

Electronic Ballot Counting Device Advisory Committee

Meeting Minutes of May 26, 2009 at 9:30 a.m.

71 South Fruit Street, Concord, NH, HAVA Conference Room

Attendance:

William Gardner, Secretary of State
Thomas Manning, Assistant Secretary of State
& Temporary Chair
Representative Richard Drisko
Stephen Edwards, Public Member
Wally Fries, Moderator, Danville
Adrienne Hutchison, Public Member
Representative Robert Perry
Anthony Stevens, Assistant Secretary of State
James Tetreault, Town Clerk, Winchester

Secretary of State Staff:

David Scanlan, Deputy Secretary of State;
Daniel Cloutier, Assistant Secretary of State

Guests:

Jack Carroll, Engineer
Kathy DeWolfe, Vermont Director of Elections
Robert Dezmelyk, Moderator, Newton
Pito Salas, Pito Salas and Associates
E. John Sebes, Co-Executive Director and Chief
Technology Officer, OSDV

Also Present: Representative Tim Horrigan

I. Call to Order

Temporary Chair Mr. Manning called the meeting to order at 9:31 a.m.

Mr. Manning informed the Committee that minutes would be addressed at the end of the meeting. Mr. Manning announced that James Tetreault, Winchester Town Clerk, has joined the committee as a local election official.

Mr. Stevens distributed information as promised by Pamela Smith of Verified Voting in the last meeting.

II. Meeting Business

• Open Source Digital Voting Foundation Presentation

Mr. Manning welcomed the guests present and asked Mr. Sebes to provide a brief history of the foundation and current information. Mr. Sebes explained the mission of the Open Source Digital Voting Foundation (OSDV) and referred to Greg Miller's presentation on behalf of OSDV at a previous meeting. Mr. Sebes updated the Committee on current developments and projects. He mentioned their voter registration system project with California under way since last year. He explained their ongoing development of a ballot design studio, based on specifications that have already been drafted at the national level. He explained that an election management system would be developed next year once the voter registration and ballot design studio are well on their way to release. He noted that an open source vote counting system has been created from scratch with specifications based on public feedback. He provided further detail on the current status of projects from the election preparation and election processing areas.

Mr. Sebes explained that open-source collaborative efforts have resulted in improved data reporting capability in other state applications in the country. He explained efforts to create public standards for open data formats, which make reporting far easier than current proprietary systems permit. He offered an example in his local area in which there were difficulties encountered with extracting statistics from a closed source propriety system.

Ms. Hutchison inquired about OSDV's approach toward collaboration. Mr. Sebes explained the staffing structure and assistance from free contributors. He said OSDV initiates outreach

throughout the country to spread the word and receive feedback from election officials, engineers, and the general public.

Mr. Edwards asked about the open source concept and its potential effect on competition in the voting system industry. Mr. Sebes explained the concept of developing an open source core and creating the potential for private contractors to build additional applications and “widgets” - not necessarily in open source. There are examples in other fields, e.g. proprietary modules that work with LINUX. Other business models were discussed.

Mr. Manning explained New Hampshire constraints and the need for local control for both hand counting and electronic approaches. Mr. Manning explained the New Hampshire clerks’ feedback that reflects a high level of customer satisfaction with the current provider, LHS Associates. Ms. DeWolfe concurred, describing Vermont election officials’ confidence and trust in LHS’s service. Mr. Sebes clarified that the OSDV foundation would build the software, identify a compatible hardware system for acquisition, and the states and local administrations could hire entities such as LHS Associates to provide machine maintenance, customer service and support, and, at the governments’ option, ballot configuration. Mr. Tetreault and Ms. DeWolfe offered specific examples of competent customer service from the current provider.

Mr. Edwards inquired about the OSDV Foundation’s funding and standards in place to ensure integrity regarding contributions. Mr. Sebes said that the Foundation receives funding from various individuals and the Board of Directors reviews donations and ensures that funds are reported transparently. There was discussion of funding sources and mechanisms to ensure that there are no appearance of impropriety should entities with conflicts of interest offer to provide contributions or software code.

Mr. Sebes explained the software development process is similar to most software startup companies. He said that opportunities are available for technical contributions and that the software is controlled to ensure that such software contributions can be tested and certified before deploying. Representative Perry asked about the difference between handling of software contributions to OSDV vs. textual contributions to Wikipedia. Mr. Sebes said that their software is different from the text definitions and revisions in Wikipedia, in that revisions to Wikipedia are accepted at face value and contributions to OSDV are subject to rigorous internal review.

Mr. Fries inquired about the system specification requirements and whether OSDV could share theirs with the state. Mr. Sebes said he would be willing to share their specification requirements and explained that the specifications include ballot design, election management, voter registration system and voting system components. Mr. Sebes stated that a considerable amount of specifications work is needed for an optical scan system. He explained that security models are available to ensure that systems cannot be modified once they are distributed in the field; this security model has been successful. He felt that the majority of the security requirements can be met.

Mr. Sebes provided further details on the core that has been done and what will be done next. Integrity measures were further detailed. Mr. Carroll asked about bugs and malicious code inserted into open source code. Mr. Sebes said that it is possible to add malicious software into the code if designers were involved on the inside. Mr. Sebes explained how independent testing mitigates this risk. Mr. Stevens asked about the challenge of verifying what software code is being used in deployed machines. Mr. Sebes said that this has been considered; test labs are able to single out and field-verify the software operating on voting machine hardware. He said that with sufficient vertical integration, these issues can be fully addressed.

Mr. Dezmelyk queried Mr. Sebes about vertical integration issues, including platforms and operating software. Mr. Sebes replied that a high degree of vertical integration is possible, and OSDV staff, including himself, have capability in this area, but there would be cost trade-offs.

Mr. Stevens explained the needs of the state and the return on investment of (time and money) resources needed. He explained that the state was potentially capable of developing specifications at a granular level and communicating them in a collaborative effort.

Ms. DeWolfe inquired about OSDV's development and certification time line. Mr. Sebes said he hopes to have systems operating in a few states by 2010 and certification in the 2010-2011 timeframe. Ms. DeWolfe asked if OSDV would submit for certification a ballot-on-demand system, or whether their efforts would be limited to an optical scanning system. Mr. Sebes said that the system they would develop and put through certification would include a ballot-on-demand module.

Mr. Carroll asked about independent testing with over-the-counter equipment. There was discussion of ballot-handling issues and state law. Mr. Fries inquired about whether a machine should be designed so that ballot counting shuts down if the machine detects a tampering effort. Mr. Sebes said that tamper evidence is part of security. Mr. Sebes explained that there are cost trade-offs; there needs to be a balance between data integrity, risk management, and tamper evidence.

Representative Perry explained the legislative purpose of the committee and addressed the final recommendation. He asked Mr. Sebes if he could comment on improving security for the current Accuvote system. Mr. Sebes said that he personally does not have enough knowledge of the current Accuvote system but is aware of studies that have addressed this Accuvote model. Mr. Sebes offered to supply the committee with his contacts for further information.

Mr. Manning declared a recess at 11:54 a.m. for lunch break. The meeting was reconvened at 12: 35 p.m. Present: Mr. Manning, Mr. Stevens, Representative Drisko, Representative Perry, Mr. Fries, Mr. Tetreault, Ms. Hutchison, Mr. Stevens, and Mr. Carroll.

Mr. Stevens clarified information from the morning session. There was discussion of the state approval and federal certification process for software and hardware. Representative Perry asked about the process for state approval and federal certification in the event that an open source chip were developed and inserted into the existing Accuvote machines. Mr. Stevens said this would need approval from the state Ballot Law Commission. There would likely be no federal certification forthcoming, although it was perhaps an outside possibility.

Mr. Stevens explained that a new chip might require new election management software. While a full-blown election management system might not be required, there would be at least a need to verify and report the raw data in an organized format. There would also, at a minimum, be a need for the machine to check for cross-endorsed candidates and appropriately count multiple votes for the same person when that person appears in two places in the same contest (a cross-endorsed situation) and only one vote for that candidate is appropriate. Mr. Carroll and Mr. Stevens discussed configurations and other technical specifications.

Mr. Carroll explained that current technology allows for a voting machine chip to be tested for verification. There was discussion of chip safety and how the hardware could be modified to test with the chip in place. Mr. Carroll suggested using a read-only non-erasable chip containing software signed with a digital signature.

Representative Perry asked Mr. Carroll his opinion of the current Accuvote machine in use in New Hampshire. Mr. Carroll said he cannot specifically comment on the Accuvote since he

does not know the machine. He explained the advantage and disadvantages of older machine technology vs. new machines. There is apparently no bootloader in the Accuvote. (It does not boot up on a commodity operating system.) He felt that owners of older machines confront difficulties in finding parts, and older systems are easier to understand. He noted that newer machines are more complex, which makes them more difficult to understand; hence, it may be harder to alter their software/hardware.

There was discussion of upgrading the current Accuvote machines during an interim transition period. The Committee discussed the opportunity and benefits of upgrading using a chip with open source software.

Mr. Tetreault expressed concern with upgrades and new technologies that could ultimately become a burden on local election officials, if new processes are required. He recommended that any equipment be easy to use, since election officials are volunteers and generally not technically savvy. He also expressed concern about any budgetary impact if towns are obligated to pay for expensive equipment. There was discussion of the upgrade design and installation.

Representative Perry inquired about the research and development of LHS Associates for the current machine. Mr. Stevens stated that Premier (Diebold) is doing one final revision to the Accuvote optical scanner, the 1.97 version. They were unlikely to complete further upgrades on the Accuvote model, since future upgrades would not fall under the 2005 Voluntary Voting System Guidelines. There was discussion of LHS service. Mr. Carroll noted that there is an integrity problem if an outside contractor creates a chip in an unknown format. Mr. Stevens noted the existence of standard election mark-up language. (In the January, 2009 EBCDAC meeting, Dr. Rivest had called attention to the OASIS interface language for elections, explaining that EAC/NIST had stopped short of placing election mark-up language in a VVSG revision.)

Mr. Manning declared a brief recess at 1:37 p.m. and was reconvened at 1:44 p.m.

III. Goals and Objectives Review

Mr. Manning requested the committee review goals and objectives.

Mr. Carroll commented on the terms in HB 285, the law establishing EBCDAC. He explained the term “fail safe” means that if a device fails, it will fail safely, for example by ceasing operations. He said the term “provably correct” means to prove by logical reasoning. Mr. Carroll observed that logical analysis is impracticable when other devices, such as USB ports, are added.

There was discussion of the primary duty in the mission statement and the following was agreed:

Mission Statement – Primary Duty

Primary Duty: Facilitate the design of an electronic ballot counting device, or the identification of a ballot counting device, that will be fail safe and provably correct and can be supported by an independent technical review to protect against undetected manipulations of election results.

- **Goal – Transparency**

Mr. Stevens asked for further clarification of “accounting of” and “accounting for.” The committee agreed to the following changes:

Goal – Transparency

The electronic ballot counting device should permit the general public to observe, understand, and have confidence in the entire electronic ballot counting process, including but not limited to, ballot configuration, counting, and accounting for all ballots cast in each device.

- ***Goal – Security***

The state should have the full option to configure ballots. Local jurisdictions should be enabled to configure their own ballots.

Goal – Security

The scope of this goal includes electronic and physical security. The state and local jurisdictions shall have the option to carry out the ballot configuration in the State of New Hampshire.

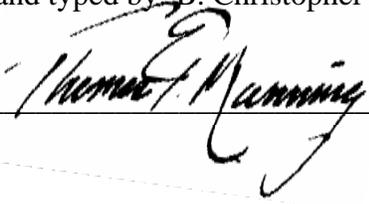
Mr. Manning requested that the draft goals and objectives be distributed to committee members for review and modification.

Mr. Manning asked that minutes be reviewed and changes emailed before the next meeting.

Mr. Manning noted the next meeting will be Monday, June 22, 2009 from 9:30 a.m. to 2:30 p.m.

The meeting was adjourned at 2:43 p.m.

Minutes taken and typed by: B. Christopher Maxwell

Received by:  _____, for C. Donald Stritch, Committee Chair