NYVV

Are LibertyVote DREs the Answer to New York's Voting Needs?

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One of the computerized or DRE (Direct Recording Electronic) voting systems being considered for New York is the LibertyVote machine sold by Liberty Election Systems.[1] This system is made by the Netherlands company NEDAP (NV Nederlandische Apparatenfabriek).[2] Voters indicate their choice by pushing buttons next to candidates' names printed on a large sheet of paper (the "ballot") that is laid over the button array. This ballot stays on the machine for the duration of the election. A full-face ballot can be accommodated. The LibertyVote machine appears to be identical to the NEDAP PowerVote machine used in Europe.[2]

The NEDAP website says the company "focuses on developing and supplying innovative and sustainable solutions in the fields of security and electronic control units as well as automation, management and information for organisations." Their product list includes retail security, library management, electronic controls, election systems, and cattle management.[2]

In its present purely electronic form, the LibertyVote system does not produce any paper trail. At the end of the election, the voting district is left only with final numbers. There is no way to audit the voting process, to recover lost or misplaced votes, or to do a recount.

The desire for verifiable voting led to the New York HAVA legislation[3] that requires a voter verified paper receipt that can be recounted. At this point, LibertyVote does not have this facility, but NEDAP is developing a printer that will be attached to the LibertyVote machine. This combination has not been shown in New York and has not been certified federally or by New York State. Nor, obviously, has its reliability or robustness been checked.

Liberty has asserted numerous times that their system uses firmware, not software, so its machines are not subject to hacking or interference. At best this is disingenuous, since firmware is "software that is embedded in a hardware device."[4] In this case, the firmware/software tells the system how to operate, and needs periodic updating because of changing requirements or bugs. The updating process would be done by sending the changes on a chip or compact disk or flash memory drive to the sites of all systems. These updates could conceivably be defective or tampered with at source, so all machines receiving the update would be compromised.

It is also necessary to program machines to count the votes for a particular election. This must be done separately for each machine that represents different election districts—often there are multiple election districts at a single polling place. This process could also conceivably be subverted.

A document requesting proposals for hardware security for the Republic of Ireland shows a block diagram of the PowerVote system and describes several types of software involved. For example, the "Integrated Election Software" IES "operates on a PC with Windows software installed." It is used to program the PowerVote machine so that its output matches the paper ballot on the face of the button panel.[5]

Liberty implies that the NEDAP PowerVote has had only smooth sailing in Europe. This is decidedly not the case in the Republic of Ireland (see attached). The government spent nearly $60 million on PowerVote equipment and it was intended that they be used for the June, 2004 local and European Parliament elections. An Independent Commission on Electronic Voting investigated this system and said it could not recommend its use because of security and accuracy concerns, whereupon it was not used for that election.[6]

Presently, the Irish government says it is "most unlikely" that these systems will be used for the 2007 general election. In fact, they may not be used for several years. The machines are now being stored at an annual expense of over $800,000.[6]

1. "Liberty Election Systems" (2005). http://www.libertyelectionsystems.com.
2 N.V. Nederlandische Apparatengfabriek, "NEDAP" (2005). http://www.nedap.com.
3 Office of Senator John J. Flanagan, "Senate Passes Package of HAVA Legislation" (2005). http://www.senatorflanagan.com/press_archive_story.asp?id=11330.
4 Wikipedia, "Firmware" (2005). http://en.wikipedia.org/wiki/Firmware.
5 Producer, "Commission on Electronic Voting (Ireland), Request for Proposals, Review of Hardware Security" (2005). http://www.cev.ie/htm/tenders/pdf/rfp_hardwaresecurity_feb2005.pdf.
6 Carl O'Brien, "Electronic voting unlikely to be used in next election," *The Irish Times*, page 3, 9/27/05.

The *Irish Times*, Dublin, Ireland, September 27, 2005

Electronic Voting Unlikely to be used in Next Election

By Carl O'Brien

The electronic voting system, which has cost in excess of EUR 50 million, is unlikely to be used in the next general election, according to the Minister for the Environment.

It may now be several years before any of the voting machines, which are being stored at an annual cost of EUR 685,000 a year, will be used on a national scale. The next local and European elections are scheduled for 2009.

A spokesman for the Minister said yesterday that Mr Roche "did not envisage" the electronic voting machines would be used in the next general election, which will take place no later than the summer of 2007.

A new round of assessment and testing of the controversial voting system is likely to take several months before it is fully completed.

Although electronic voting was used on a trial basis in the last general election, the system was put on hold when questions arose over the ownership and integrity of the electronic code underpinning the system. Almost EUR 400,000 has been spent on testing the system.

A spokesman for Mr Roche said there was no question of the electronic voting system being scrapped and added that the machines had an estimated lifespan of between 20 and 30 years.

"The Government position is that we're still testing the system because we want to reassure people about the integrity and security of the system. Minister Roche doesn't envisage that the system will be available for the next election because of time constraints," he said.

"The intention is that they will be used, unless we're told otherwise by the commission the independent Commission on Electronic Voting ."

Consultants appointed by the Government are testing the system and addressing security concerns. They are due to report back to the Minister within weeks.

Following these tests, the Commission on Electronic Voting will analyse whatever changes are recommended. It will report back to the Minister after a period of months, according to commission officials.

"We're particularly concerned about doing the job right. Time is secondary, in our book," a spokesman said.

The 75,000 mostly unused machines are being stored in warehouses and other facilities around the country.

The Minister's spokesman said Mr Roche was concerned about storage costs and was looking at a range of cost-cutting measures, including moving the machines to a central location. He has asked the Minister for Defence to examine whether this was possible.

Labour's environment spokesman Eamon Gilmore TD said the Government's approach to introducing electronic voting was wasteful and had undermined public confidence.

He also questioned the actions of the former minister for the environment, Martin Cullen, in pushing ahead with the decision to purchase the 75,000 electronic voting machines in the face of widespread doubts over the security of the system.

A spokesman for Mr Cullen, now Minister for Transport, said the decision to introduce electronic voting had been endorsed by the Government.

Subsequent decisions over the introduction and testing of the system were also agreed by the Government, he added.

Much of the criticism of the new voting system has focused on the lack of a paper trail, while some experts have said the proposed system is so compromised that it must be scrapped.

The Government had hoped to introduce electronic voting on a national level in the local and European elections last year, but the plans were thrown into disarray after the Commission on Electronic Voting said it could not recommend using the system. E-VOTING: A SYSTEM WITH A HISTORY OF CONTROVERSY

December 17th, 2000

Minister for the environment Noel Dempsey says electronic voting machines will be used for the first time in a selected number of constituencies at the next general election.

Once satisfied that they work, he says that they will be used nationally in the 2004 local elections.

May 17th, 2002

The electronic voting system is used for the first time in Dublin North, Dublin West and Meath during the general election.

The results of all counts are announced simultaneously, prompting anger that it did not give losing candidates time to prepare for their result. In particular, the public manner in which Nora Owen (right) learned that she lost her seat after 21 years is criticised.

June 17th, 2003

Electronic voting will be introduced in all constituencies for the European and local elections next year, the Government confirms. It says the estimated cost will be EUR 36 million.

December 18th, 2003

The Joint Oireachtas Committee of Environment and Local Government has voted to endorse the Government's electronic voting system a week after hearing serious reservations about the safety of the system.

It votes by nine to four in favour of the system after its Fianna Fail and PD members give unanimous support to the initiative.

February 4th, 2004

Minister for the environment Martin Cullen announces a EUR 4.5 million public information campaign around electronic voting in advance of using the system on a national basis in the local and European Parliament elections in June. He says the system will be safer, more accurate and faster.

February 13th, 2004

Fine Gael, Labour and the Green Party jointly propose a Dail motion to defer the introduction of electronic voting until an independent electoral commission has been set up to allay public concern over the new system.

February 17th, 2004

The Taoiseach announces the establishment of an independent panel to deal with electronic voting, as the Opposition parties sharply criticise the Government's handling of the issue.

May 1st, 2004

Plans to roll-out electronic voting in the June election are abandoned after the independent Commission on Electronic Voting says it cannot recommend using the system.

Opposition parties call for the resignation of Minister Cullen, who describes the Commission's report as a "bad day" for himself.

September 28th, 2004

The Comptroller and Auditor General criticises the Government's stewardship of the electronic voting project. He says the initiative should have been subject to more rigorous appraisal before it was bought, given the scale of expenditure required.

September 26th, 2005

Minister for the Environment Dick Roche (right) says it is "most unlikely" that electronic voting will be used for the general election, due in 2007.