

Verification of Voter's Choices

Comelec's decision to disable the voter verification feature of the PCOS was a big mistake. Voters never get to know if the PCOS correctly read their ballots, and we know that in many precincts, the PCOS has no way of assigning your votes to the correct candidate, because the PCOS is using the wrong CF-card. The right CF-cards just did not reach the precincts in time for elections on May 10, 2010.

Definition of Terms

The Voluntary Voting System Guidelines (VVSG)^[1] defines “voter verification”^[2] in a computerized election as “confirmation by the voter that all votes were recorded as the voter intended”. Although “voter verification” is accepted terminology, it is quite misleading, and the alternative terminology “verification of voter's choices” should be used instead.

In the case of the May 10, 2010 computerized Philippine elections (AES 2010), “verification of voter's choices” should happen as soon as the voter has manually fed his ballot to the PCOS computer. The PCOS gives the voter feedback consisting of the names and positions of candidates that the voter voted for on his ballot, according to whether the PCOS program considers the voter's marks as valid votes or not, and according to what names the PCOS assigns to the voter's valid marks. The voter and the PCOS program may not necessarily agree on the PCOS interpretation of the voter's marks on the ballot, and so the need for “voter verification” of his choices. The PCOS interpretation could, in fact, be wrong, as in the case of a ballot fed to a PCOS configured with the wrong CF-card, an unfortunate event that happened on May 3, 2010 in many cities and municipalities where final testing and sealing of the PCOS was being carried out^[3].

The feedback by the voting machine could be printed on paper, or displayed on the touch screen, or played back as audio through headsets/earphones for the blind.

Feedback that is printed on paper is called Voter Verified Paper Audit Trail (VVPAT)^[4]. After the voter has read the printed feedback, it is deposited into a secure ballot box, so that the voter cannot use it for vote selling^[5]. It can also be used later for post-election audit. VVPAT is absolutely essential in the case of push-button voting machines, called Direct Reading Electronics (DRE)^[6], since these do not use paper ballots. Of course VVPAT can also be used with PCOS voting machines.

Feedback that is displayed on an LCD screen or on a touch-screen is called Voter Verified Video Audit Trail (VVVAT)^[7]. In the case of paperless voting systems, as the voter makes his selections using the voting machine touch screen, the machine captures all his selections as screen-capture image files. The VVVAT consists of displaying these screen-capture image files to the voter. In the case of PCOS voting machines, as the voter feeds his paper ballot to the PCOS, the PCOS scans the ballot, creates a TIFF^[8] file image of the ballot, interprets the votes thereon by determining the candidates' names corresponding to the vote marks, and adds the names and positions of the candidates as “tags” in the TIFF file. The VVVAT consists of displaying these “tags”, namely the candidates' names and positions, to the voter using the PCOS touch-screen.

Other matters relating to verification of voter's choices, such as privacy of the voter and protection of his identity during the VVPAT/VVVAT process, procedures to follow if the voter disagrees with the feedback from the voting machine, allowable formats of the VVPAT/VVVAT feedback documents, etc., are described in the VVSG recommendations^[9] to the U.S. Election Assistance Commission (EAC)

Legal Basis for Verification of Voter's Choices

The AES Law, Republic Act 9369^[10], has a provision on verification of voter's choices, namely

“Sec. 7. Section 7 of Republic Act No. 8436 is hereby amended to read as follows: Sec. 6. Minimum System Capabilities. The automated election system must at least have the following functional capabilities: x x x (n) Provide the voter a system of verification to find out whether or not the machine has registered his choice; x x x”

Since this is a minimum system capability, Comelec is mandated to provide voting machines with at least this capability already functional and usable on election day.

I believe that the inspiration for this provision is that in a computerized election, the voter does not see or witness the counting of his votes in public, and so he does not know if his votes are included in the count. With “verification of voter's choices” put into place, the voter knows that the computer has “read” his votes correctly, and this is the first step for his votes to be properly included in the count.

Comelec Implementation of Verification of Voter's Choices

When Comelec selected Smartmatic's AES for use in the Philippine elections of 2010, the public was given the impression that the precinct count optical scan (PCOS) computer to be used at the polling precincts, namely the SAES-1800 PCOS computer, was capable of providing the “verification of voter's choices” functionality. A closer examination of the SAES-1800 technical specification sheet^[11] shows no mention of this capability.

From the start, Comelec's position^[12] is to disable the “verification of voter's choices” functionality of the SAES-1800 PCOS, if such a functionality exists. The reason mentioned by authorities is that if this functionality is provided, and in case of a disagreement, if the voter is allowed to get back his ballot to reshade, then voting time per voter will become unreasonable, and will require elections to take more than one day. To avoid this problem, Comelec just decided to disable any “voter verification” feature – another one of Comelec's “expediency over transparency” decisions. This is Comelec's decision, and it stuck to this decision until the very end, despite pleadings from election advocacy groups.

CenPEG Position on Verification of Voter's Choices

Also from the very beginning, the Center for People Empowerment in Governance (CenPEG) has been proposing with Comelec the inclusion of the “voter verification” feature in the SAES-1800.

In July, 2009, CenPEG wrote a letter to Comelec^[13] specifying desired minimum capabilities of the AES, including verifiability of voter's choices. It's been many weeks since elections have been held, and Comelec has not yet answered the CenPEG letter.

At the ANC program “Talkback” of Tina Palma^[14] on August 24, 2009, CenPEG political analyst Bobby Tuazon and CenPEG IT consultant Pablo Manalastas had a heated argument with Atty. Ferdinand Rafanan, lawyer of Comelec, and Mr. Ray Roxas-Chua, head of the Comelec Advisory Council, regarding voter verifiability. Atty Rafanan is claiming that the paper ballot that the voter filled out, itself, is the “voter verifiability” feature that is required by Section 7(n). How can the ballot, itself, which can be misread, and has actually been misread, by the PCOS, be the “voter verification” that the PCOS has read the ballot correctly? How can the ballot and the PCOS interpretation of the ballot be one and the same, when the experience of May 3, 2010 proves beyond reasonable doubt that the PCOS can, and does, make mistakes! At this early date, Comelec was already firm in its decision to turn off this feature on election day.

In various other fora, this issue was tackled, but Comelec is firm in its decision to disable voter verifiability.

CenPEG, in all of its dealings with Comelec, has been firm in its request to install the voter verifiability feature in the SAES-1800 PCOS computers.

Implications on Election Day

When using the PCOS for computerized voting, the “verification of voter's choices” feature is the only guarantee that the voter has that his votes will be “read” correctly by the PCOS. If this feature is disabled, the voter has no way of determining how the PCOS “read” his ballot, and he is not even sure if his ballot was read at all.

During the May 10, 2010 elections, after I fed my ballot to the PCOS computer in clustered precinct no. 271 (traditional precinct no. 0559A) in Barangay Mayamot, Antipolo City, the only feedback that I got from the PCOS is the message, “Congratulations, your ballot has been accepted”, or some similar message. After elections, I checked the Comelec public website, <http://electionresults.comelec.gov.ph/> on May 22, 2010, and I found out from the precinct no. 271 webpage res_reg5802271.html^[15], that my votes for party list and vice governor have not been counted, because there is no data on these candidate positions in the webpage. Was I disenfranchised, even while the PCOS machine congratulated me for successfully feeding my ballot to the PCOS computer? My vote, definitely, was not included in the count, because the public website says so! Can I sue Comelec for not counting my vote?

Best Industry Practice

The best solution, so far, that provides “voter verification” and a positive check that the vote is included in the count is the Scantegrity II System^[16]. In this system you mark your choices by applying a special ink on the oval of the candidate of your choice. The special ink reveals a random number assigned to the candidate (the random number for each candidate changes from ballot to ballot and the candidate does not know what numbers are assigned to him). Your ballot also has a random number assigned to it. You copy these random numbers, and check if they appear in the election website. If they do, then your vote for that candidate has been included in the count.

Analysis and Conclusion

Comelec's decision to disable the voter verification feature of the PCOS was a big mistake. Voters never get to know if the PCOS correctly read their ballots, and we know that in many precincts, the PCOS has no way of assigning your votes to the correct candidate, because the PCOS is using the wrong CF-card. The right CF-cards just did not reach the precincts in time for elections on May 10, 2010.

My case is proof that my vote was not counted. Please do not ask me to love Comelec for disenfranchising me.

End Notes

[1] The U.S. Voluntary Voting System Guidelines (VVSG) is a “set of highly detailed technical requirements x x x that apply to voting equipment, not to procedures in the polling place. If a *type* of voting system (i.e. a particular make and model) meets all of the VVSG requirements (as determined by conformance testing conducted by an accredited laboratory), then that type is eligible to be *certified* as being compliant with the VVSG. Thus the VVSG is addressed to vendors of voting equipment”. This role of the U.S. VVSG is given in <http://vote.nist.gov/VVSG-0807/Introduction-chapter3.htm#HAVAandVVSG2005>

- [2] The term “voter verification” is defined here, <http://vote.nist.gov/VVSG0807/appendixa.htm#glossvoterverification>
- [3] The Newsbreak.com article is entitled, “Human error caused PCOS machines malfunction –Smartmatic”, http://newsbreak.com.ph/index.php?option=com_content&task=view&id=7791&Itemid=88889062. In this news article, “Cesar Flores, Smartmatic president for Asia, told reporters in a press conference on Tuesday that it was an issue of putting the wrong configuration on the machines' compact flash (CF) card. The CF card contains the precinct-specific information, like the list of the candidates in a given locality, that gives an "identity" to the generic-made PCOS machine. 'It's a human error when the configuration was done. And it was already detected,' he said. Flores also explained why the machine misreading is exclusive to local positions and did not affect the national positions. The list of names of candidates in the local race has double spacing, unlike in the national race which has single spacing. 'What's going on is if you mark the first row, it will read correctly. But for some reason, the configuration is telling the machine that the candidate in the 2nd row (*on the double-spaced ballot*) is actually on the third row (*in the CF-card for the PCOS, but is not there, since the CF-card data is still single-spaced*). it's just a line in the configuration that is suppose to say 'double space,' he said”. The parenthesized explanations are mine - PM
- [4] VVPAT is explained in the Wikipedia article, http://en.wikipedia.org/wiki/Voter_Verified_Paper_Audit_Trail
- [5] This article on “Voter Verified e-Voting Explained” <http://www.jasonkitcat.com/resolution/explain.html>, states that, “the printout of the vote cast is stored in a secure place such as a ballot box. It is vital that the voter doesn't keep the paper (known as the voter-verified audit trail). This is so that they can't prove to someone they have voted a certain way and get paid for it”.
- [6] DRE voting machines are explained in the Wikipedia article, http://en.wikipedia.org/wiki/DRE_voting_machine
- [7] A comparison of VVVAT, VVPAT, and Optical Scan is given in the paper, http://www.usenix.org/event/evt08/tech/full_papers/goggin/goggin_html/, entitled “Comparing the Auditability of Optical Scan, Voter Verified Paper Audit Trail (VVPAT) and Video (VVVAT) Ballot Systems”, by Stephen Goggin, et al.
- [8] The Tagged Image File Format (TIFF) is explained in the Wikipedia article, http://en.wikipedia.org/wiki/Tagged_Image_File_Format
- [9] The VVSG recommendations to the EAC, prepared by the Technical Guidelines Development Committee (TGDC) is downloadable as the document, <http://vote.nist.gov/VVSG-0807/Final-TGDC-VVSG-08312007.pdf>
- [10] Republic Act 9369 is available for viewing online at <http://www.chanrobles.com/>
- [11] The SAES-1800 technical specifications sheet, is available from the Smartmatic website, <http://www.smartmatic.com/>, as the file, SAES1800_technicalsheets_v2.0.pdf (Spanish filename: brocha-ficha-technica-1800-ing-v2.0.ai)
- [12] This position of Comelec was stressed several times in various public fora, including Tina Palma's “Talkback” program on ANC, on August 24, 2010
- [13] The letter of CenPEG to Comelec requesting for inclusion of certain minimum system capabilities was sent in July 2010.
- [14] Tina Palma's “Talkback” program at ANC was on August 24, 2009.
- [15] The Comelec public website for election results contains the data for clustered precinct 271 of Antipolo City in the web page, http://electionresults.comelec.gov.ph/res_reg5802271.html. The same page has a different URL today, but is still available in the Comelec website.
- [16] The Scantegrity II System is described in <http://www.scantegrity.org/washington/>