

Audits: an in-depth review of Venezuela's automatic voting

Automatic voting is available in the Bolivarian Republic of Venezuela. From the selection of poll workers and members of electoral boards to the issue of bulletins, technology means minimize manual intervention.

Each component is audited to ensure setup in conformity with laws and results reflective of voters' will.

Established by law, audits form part of election schedules.

What is an audit of the voting system?

It is a thorough review and testing of every component in automatic voting, followed by certification.

Audit of the Venezuelan voting system has been a systematic effort since 2004, when automatic voting was introduced. Since then, and working side by side with political parties, new reviews have been made to produce audits stretching to any and all components of the automatic platform.

Audits pursue the following goals:

- Engender confidence among voters, political organizations and all the national and international community and assure them of a reliable automatic voting.
- Demonstrate voting transparency and security in all stages and procedures.
- Attest to the good working order of components, programs, processes and devices on the election day.
- Demonstrate vote inviolability and invulnerability.
- Ensure vote completeness.

Who are the parties involved?

1. Experts with the National Electoral Council (CNE)
2. Experts on behalf of political parties
3. External auditors

In 2013, the CNE resolved to include domestic observers in its audits, such as civil society representatives.

Domestic observers join foreign guests to witness such tasks.

When is the timing for an audit?

Each automatic voting component is checked in every election. In 2017, automatic voting was audited and certified before and after all of the three elections held that year.

How voters are apprised of audits?

Since 2013, the CNE live streams every audit on its CNETV channel, accessed from the website www.cne.gob.ve.

In this way, anybody in Venezuela or anywhere else can watch on the spot what is going on with audits and receive itemized information on how, what and why, based on the detailed explanations of experts and electoral officials.

How each audit is undertaken?

Pre-election audits

1. *Voting machine software*: the program source code is reviewed to ensure that the machine reflects the voter's will and prove that it cannot be altered in favor of a certain candidate. The program testing is useful to confirm that the voting machine properly records the voter's choice, and correctly counts and transmits the results.
2. *Voting machine files*: the setup of the biometric identification device and the workflow relative to the voting machine are reviewed to certify the security protocols.
3. *Voters' data. Stage I*: the quality of fingerprints is tested and matched with the fingerprints affixed to the voter register; the absence of duplicate fingerprints is ascertained. Similarly, the lack of relationship or of a certain order between the capture of the fingerprint and vote sequence is corroborated.

4. *Production (programming) of voting machines:* the voting program, files and voters' data to be entered in each voting machine are compared with those previously audited.

5. *Electoral technology infrastructure:* transmission means between voting machines and tally rooms are checked, namely: networks, technology devices, operating systems, and the management and monitoring system.

6. *Pre-dispatch audit (mock voting):* voting, transmission and count are shammed in controlled conditions to check the accuracy of both the intended vote as reflected in the receipt and data recorded on the tally sheets and the canvass system. Also known as "zero error," this audit is intended to confirm "zero inconsistency" between the intended vote and the vote captured in the voting machine.

7. *Summation software:* the program source code and data base are checked to confirm that they contain the votes transmitted from each poll station, in accordance with laws. Testing includes transmission and summation of tally sheets.

8. *Reset to zero of national summation centers:* the infrastructure, data base and applications of CNE summation national centers are cleaned up. This audit ensures that no data, records and logs have been loaded before the election.

9. *Telecommunications. Stage I:* secured travel of votes from voting machines to national summation centers is checked, as well as the effective ways and means for data transfer. A cross-check is made to confirm that the networks transmit only counted votes from qualified and validated sources.

10. *Citizen-initiated audit. Stage I:* a close of business audit of a sample of 54% of voting machines takes place on the very election day, with the participation of poll workers. Witnesses on behalf of political parties and ordinary citizens are welcome to the audit.

This audit is useful to verify the proper operation of the voting machine by corroborating no mismatch between, on the one hand, data contained in tally sheets and printed by the voting machine, and, on the other hand, vote receipts contained in the vault.

Post-election audits

11. *Telecommunications. Stage II:* this audit is undertaken the day after the election day to compare the setup of transmission systems with the setup examined before the election in order to confirm the use of the latter.

12. *Citizen-initiated audit. Stage II:* compliance with the procedure established during the citizen-initiated audit, stage I is matched against a sample of 1% of voting machines reviewed on the election day.

13. *Voters' data. Stage II:* also known as audit of duplicate fingerprints, it certifies that voters who cast their ballot actually enrolled in the voter register and that the same person did not vote more than once.

How do we know that the audited items will not be subsequently altered?

Login is among the major steps during audits of the voting system, aimed at ensuring that no examined components will be altered after the audit.

Login is created after review of the following components:

- ✓ Voting machine software
- ✓ Summation software
- ✓ Voters' data (Stage I)
- ✓ Transmission means (Stage I)

Upon review of the component and confirmation of its proper operation, auditors create a segmented password, which is the sum total of all the participants in the audit.

This step is of utmost technical importance. Once a specific component is audited, a change can be made only if all the stakeholders log in at the same time. Thus, all stakeholders can rest assured that no component is to be altered after the audit or at any other moment, except for the involvement of all of them.

How can voters confirm that a certain audit certified a component good working order?

Participants use a record (or written report) to vouch for the audit particulars. From the outset, an account of the expected testing is given and signed in agreement by each participant. The audit closing record registers the findings, including a confirmation of the component proper operation.

Audit records are posted on the CNE website, www.cne.gob.ve

What if auditors find any glitch or abnormality?

From 2004 to date, auditors have found no irregularity in automatic voting, as appears from the released records.

In the event of any interesting finding, any participant in an audit may require additional testing.

Venezuelan laws provide for the necessary recourses to challenge any action or failure to act by the National Electoral Council, in order to uphold due process.