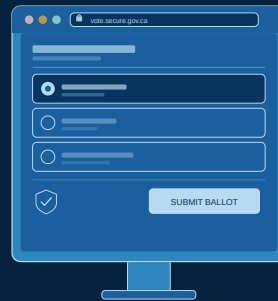


Logic & Accuracy Testing for Online Voting

A guide to how L&A testing works, why it matters, and best practices.



Logic & Accuracy (L&A) testing is a mock election run with the online voting system used by the administrator. This requires the creation of Test Voters and Voting PINs, which are used to cast a variety of ballots including overvotes, undervotes, and valid votes, to test if the system is working correctly.

WHY IT MATTERS

The Importance of L&A Testing

L&A testing is a critical safeguard that can catch problems before they affect real votes. Testing can reveal:

- Misconfigured online elections;
- Incorrectly set overvote thresholds; and
- Missing candidates from ballot.

PUBLIC CONFIDENCE

Beyond catching errors, L&A testing builds public trust and confidence in election technology by demonstrating transparency and accountability in the process.

BEST PRACTICES

Best Practices for L&A Testing of Online Voting

- ✓ **State L&A procedures in a document**
Maintain formal online voting L&A procedures in a document to promote consistency of procedures across elections and allow for periodic review and updates.
- ✓ **Make L&A procedures publicly available**
L&A procedures should be publicly posted on the government website. This improves transparency, allows for external review, and fosters trust.
- ✓ **Make L&A testing open to scrutineers**
L&A testing dates should be announced to candidates well in advance and they should be invited to observe testing.
- ✓ **Test all possible ballots**
L&A procedures should test undervotes, overvotes, and declined ballots for each contest. This helps to verify that the voting system is working as expected.
- ✓ **Test overvotes in multi-member contests**
A vote should be cast with the maximum allowable number of selections alongside a ballot with one extra selection, to detect misconfigurations where the overvote threshold is set incorrectly.
- ✓ **Test multiple voting**
Election administrators should test whether a vote can be cast with the same Test Voter's credentials multiple times to prevent the possibility of multiple votes.
- ✓ **Test administrative system**
The administrative site should be fully tested, including opening and closing the mock election, running reports, and tabulating votes to verify the count is correct.
- ✓ **Test login with oldest/youngest possible ages**
L&A testing should include Test Voters with a range of birth dates – including the youngest eligible age, the oldest possible age, and the oldest ineligible voter (e.g., 17) – to confirm that the system is functioning properly.
- ✓ **Check that all candidates are on the ballot**
L&A testing should occur after the last day to withdraw from, or register for, the election. A process should exist to check each ballot face to ensure that all eligible candidates are present.