For years, experts and cyber security researchers have challenged online voting, citing issues of voter identification, verifiability, auditability and data security, including the potential for vote tampering, theft and data breaches. But the case for secure online voting has never been more imperative in the face of the global pandemic and significant advances in security technology.

Neuvote, a Canadian based company, has pioneered a one of a kind hybrid mobile voting platform that addresses these challenges to online voting. Backed by years of technical research, Neuvote’s system combines the best elements of online and traditional paper-based voting to create the most secure and accessible way to vote remotely, a critical advantage in our current environment. In addition, the platform provides complete election transparency, auditability and eliminates the threat of vote tampering, theft and data breaches.

This White Paper is a guide to the three Foundational Fundamentals of secure online voting and outlines Neuvote’s Hybrid Mobile Voting platform’s ability to ensure online voting security and accessibility.

### Three Foundational Fundamentals

1. **End to End Verifiability (E2E-V)**

   “Getting the election outcome right isn’t good enough. Voters deserve convincing evidence that the outcome is correct”.

   - End to End Verifiability: Josh Benaloh, Ronald Rivest, Peter Y. Ryan, Philip Stark, Vanessa Teague, Poonvi Vora

   End to End Verifiability represents a paradigm shift in electronic voting. It provides a way to verify the integrity of the election by allowing voters to audit the information produced by the voting system. Through a collection of techniques, E2E-V ensures voters that their votes are a) cast as intended and b) tallied or counted as cast, both fundamental to voter trust in the security and accuracy of the voting system.

www.neuvote.com
2. Paper Ballot Records

Paper ballots have been a mainstay of elections for centuries. They are trusted, user friendly and cannot be hacked into. On-line voting systems that include paper ballots in the voting process provide added security as there is no data sitting on a server waiting to be tampered with and the security is on par with in-person voting which includes in-place control and custody of ballots. In addition, there is the ability to manually audit results and perform recounts if an election is contested.

"While there is a risk that cyber capabilities could be used to covertly change the vote count and lead to a different election winner, we assess that this would be very challenging for an adversary to accomplish if elections were conducted in a manner that includes cybersecurity best practices and paper processes that occur in parallel."

- Communications Security Establishment (CSE) - Cyber threats to Canada’s democratic process (2017)

3. Visual Confirmation is Key

Security experts overwhelmingly agree that paper ballots and risk-limiting audits are necessary to secure elections in the 21st Century. In fact, a 2018 report from the National Academies of Sciences, Engineering, and Medicine titled: "Securing the Vote, Protecting American Democracy" concluded that elections need human readable ballots and mandated audits before the election results are certified. Very simply, seeing is believing.

"Merge your system with something that is analog, physical, or human so that if the system is subverted digitally it has a second barrier to go through."

- Richard Danzig, Vice Chairman RAND Corporation / Former Secretary US Navy
Neuvote - The Most Secure and Comprehensive Mobile Voting Application Available Today

We are an innovative company with the only 100% secure mobile voting system focused on enhancing democracy through greater accessibility, accuracy, authentication and the prevention of voter fraud and manipulation. Our patent pending technology combines tried and true physical paper balloting with the ease and accessibility of mobile, on-line voting backed by state-of-the-art visual authentication and confirmation by the voters of their ballot choice.

Our Hybrid Mobile Voting platform is the only one of its kind to be built around Microsoft’s ElectionGuard, the best available end-to-end Verifiable system in the world. The ElectionGuard technology ensures that elections are Auditable and Secure, using advanced encryption techniques.

Neuvote is the only company uniquely positioned with the most secure and comprehensive mobile voting application available today that addresses all three of the Foundational Fundamentals of secure online voting:

- **End to End Verifiability**: Neuvote provides full end-to-end encryption and verifiability to ensure every ballot is secured and can be checked for full election transparency.

- **Paper Ballot**: We connect voters directly to the paper ballot which means we do not store any vote data on servers, eliminating the threat of digital vote tampering, theft and data breaches.

- **Visual Confirmation**: Voters see the printing of their paper ballot creating trust in the system and validation that every ballot is cast as intended.

**Let Us Help**

Neuvote is backed by an experienced team with over 65 years in the technology sector, including high profile financial security projects. To ensure your next election is accessible, secure and successful please contact us to learn more about Neuvote and our Hybrid Mobile Voting system (www.neuvote.com).

www.neuvote.com