



Secure & Verifiable Online Voting

TIVI Features & Benefits

**Bringing the
ballot to the
voter**

Accessible, anytime, anywhere.

TIVI is a convenient and secure online voting solution allowing governments to connect with their remote voters by providing them with a transparent, accessible and universally verifiable platform.

This guarantees voters and governments the integrity of all cast ballots, ultimately leading to increased participation rates and election credibility.

How Does TIVI Work?

The voter needs an Internet enabled computer, laptop, tablet or smartphone and run the official voting application.

1

The vote is then send through an encrypted channel to the secure vote server and the voter receives a unique voting receipt, which can be used later to verify the vote via a smartphone application and through a public bulletin board.

4

The voter logs in to TIVI, authenticates oneself with an ID and unique PIN after which a choice can be made and the vote can be cast.

2

At the close of the election the encrypted votes are sent through a cryptographic mixing process which digitally shuffles the votes, so no one but the voter knows who has been voted for.

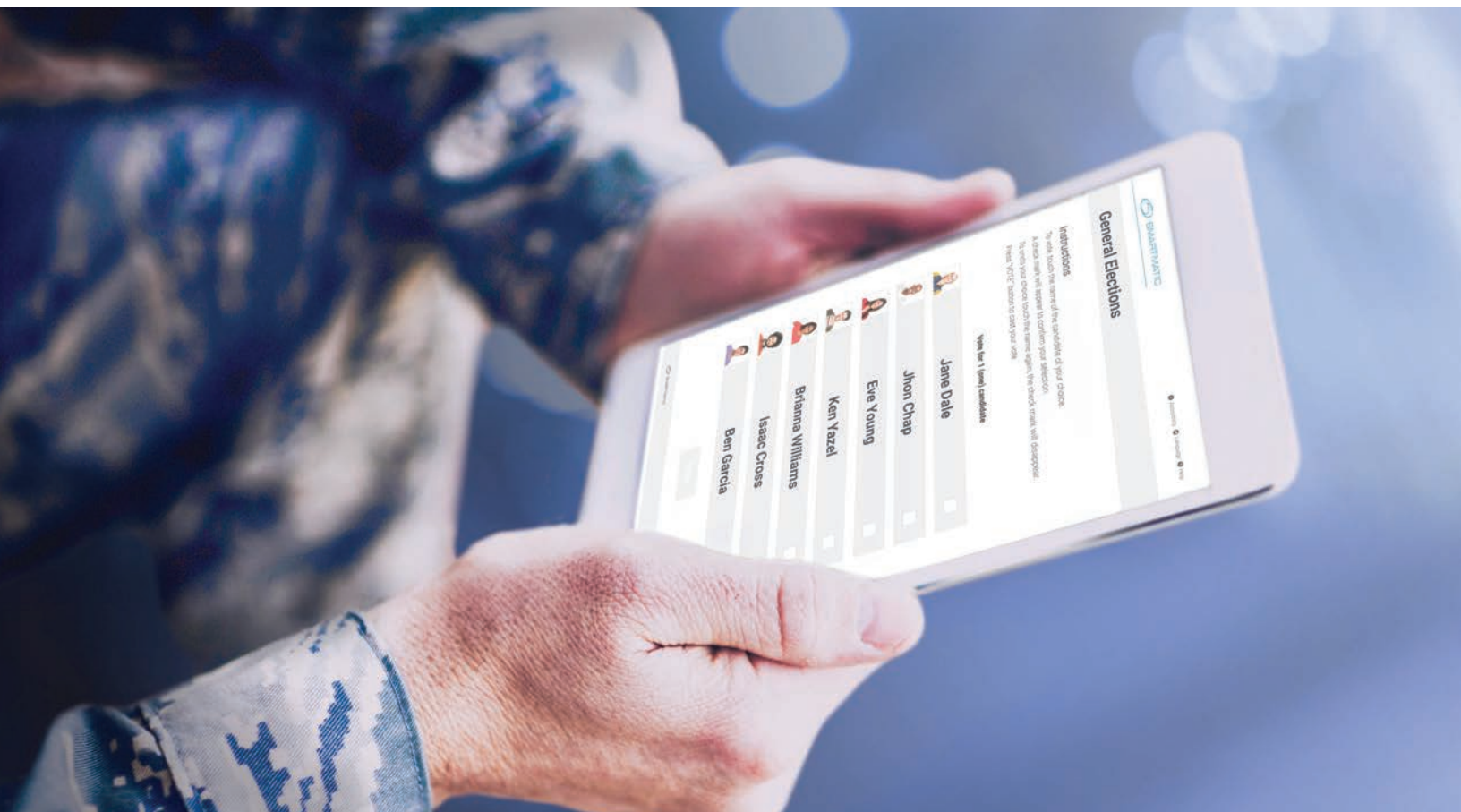
5

To protect vote integrity, TIVI automatically encrypts and digitally signs the vote on the voter's device using advanced cryptographic techniques.

3

Finally, the votes are decrypted and counted only in the presence of the electoral board who needs to come together to create the decryption key – this way, no individual has exclusive access to the decrypted votes and no preliminary results can be leaked.

6



Features, Benefits & Value



Integrity Guaranteed

TIVI is the **only** online voting solution in the world that offers universal digital verifiability providing demonstrable proof that votes were cast as intended, stored as cast, counted as cast.

Voters can verify the integrity of their vote using a Blockchain-based public bulletin board. Zero-knowledge mathematical proofs can be used to verify the correct operation of core voting processes including cryptographic mixing and decryption.



Enhanced Electoral Transparency

Independent security and accreditation experts can review TIVI's source code making our solution fully available for auditing by the electoral authorities or any approved third-party authorities.

TIVI's system components register all system transactions performed during the entire electoral process. System logs are cryptographically protected to ensure their integrity. Also, privacy preserving mathematical proofs are created, which verify the correct operation of the mixing and decryption processes whilst maintaining voter privacy and vote secrecy.



Accessibility Compliance

TIVI offers native support for any modern Internet enabled device (desktop, laptop, tablet, mobile) and integrates seamlessly with audio browsers (e.g. JAWS, NVDA) and hardware peripherals (e.g. switches, paddles, 'sip-puff' tube). TIVI is WCAG compliant, embracing the requirements of voters with disabilities allowing for independent voting.



Voter Eligibility Assured

To accurately verify the identity and eligibility of the voter, we offer a variety of multiple simultaneous access and strong authentication methods, including eID, mobile ID, smartphone based 'two-step' verification, biometric access and Folio.

Folio offers a mobile digital identity for best in class voter eligibility assurance and authentication (folio.id).



Voter Coercion Potential Minimized

The potential of voter coercion can be eliminated by 'multi-session' voting. Our solution offers multi-session voting to allow the voter to cast a ballot as many times as they wish, with each newly cast ballot superseding the previous ballot to maintain the principle of "one person, one vote".



Ballot Secrecy Maintained

Votes are encrypted and digitally signed on the voter's device. This is often referred to as a digital 'double-envelope' scheme and when utilized along with strong transport layer security (TLS) between the voter's computer and the vote receiving server (digital ballot box), the ballot is securely protected.



Vote Marking Errors Reduced

TIVI's easy to understand user interface minimizes voter error and creates a consistently simple user experience across all devices (laptop, tablet, mobile).



Voter Coercion Potential Minimized

Our online voting system has been designed to ensure 100% voter privacy at every stage of the election process. At no stage can voter preferences ever be correlated with a voter's identity. Cast votes are cryptographically mixed to destroy any correlation with the order in which they were cast and to maintain voter anonymity. This takes place on a 'clean', air-gapped decryption server, which has never been connected to the Internet.

Get in touch with us

Worldwide Headquarters

88 Baker Street, 4th floor W1U 6TQ
London, UK
Phone: +44 20 7629 9279
hq@smartmatic.com

Worldwide locations

To get in touch with one of our offices
closest to you, please visit

www.smartmatic.com/contact/

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Smartmatic specializes in the design and deployment of election system technologies. As the global leader in providing secure, transparent, accessible, verifiable voting systems, Smartmatic is setting the standard for election integrity and inclusivity worldwide, including encrypted results transmission, paper ballot back-up, extensive auditing and Internet voting.

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