

# Estonian Internet voting system

<http://estonia.eu/about-estonia/economy-a-it/e-voting.html>

Estonia is the first country in the world to introduce nation-wide Internet voting. The Estonian Internet voting system has been under development since 2002 with the final pilot held at the end of 2004. In 2005 the system was used for the first time for local government council elections.

In 2007, for the first time in the world, it was possible in Estonia to vote online for parliamentary elections. A total of 30,275 out of 940,000 registered voters used that opportunity and cast their ballots via the Internet. The i-voting system is gaining popularity. In 2009 for the European Parliament elections 58,669 voters used i-voting, which is 15% of all the people who voted. In the local government council elections in October 2009, a total of 104,413 persons used i-voting. The percentage of i-votes among all the votes cast was 15.7%. The **new record** for i-votes was set during the parliamentary elections in March 2011, when **140,846 people** cast their votes electronically, which is **24.3%** of all the people who voted. In 2014 European Parliament elections, a third of voters participated in elections over the Internet – from 98 different countries.

Internet voting is meant to supplement, not to replace, the traditional methods of voting. The idea is to give voters the possibility to vote from the location of their choice (home or office), without the necessity of going to the polling station. Therefore remote voting is used.

Estonia takes the security of Internet voting very seriously. Voting over the Internet is as **secure** as ballot voting. A variety of technical, administrative, legal and other measures are used to safeguard the integrity of the system and most importantly the security and secrecy of the votes.

Electronic voting takes place during advance polls (tenth to fourth day before election day) and government-issued **ID-cards** are used for voter **identification**.

## **If an ID-card is used, the voting procedure goes like this:**

1. The voter inserts the ID-card into a card reader and opens the webpage for voting (<http://www.valimised.ee>).
2. The voter verifies him/herself using the PIN1 of the ID-card.
3. The server checks if the voter is eligible (using the data from the population register).
4. The voter is shown the candidate list of the appropriate electoral district.
5. The voter makes his/her voting decision, which is encrypted.
6. The voter confirms his/her choice with a digital signature (by inputting the PIN2-code).
7. The voter receives a notice on the computer screen that the vote has been accepted.

At the vote count the voter's digital signature is removed and at the final stage the members of the National Electoral Committee can collegially open the anonymous i-votes and count them.

Since the 2011 parliamentary elections it is also possible to use a **mobile phone to identify oneself for i-voting**. This is even more convenient since one doesn't need an ID card reader in the computer. A mobile phone with the respective SIM card acts as a card and a card reader at the same time. However, one still needs a computer for the voting procedure.

**If mobile-ID is used, the voting procedure goes like this:**

1. The voter opens the webpage for voting.
2. The voter enters his/her mobile number into the computer. After that a control code is sent to voter's mobile phone by SMS.
3. The voter identifies himself/herself by entering the PIN1 code into the mobile phone.
4. The voter is shown the candidate list of the appropriate electoral district on the computer screen.
5. The voter makes his/her voting decision, which is encrypted. A control code is again sent to the voter's mobile phone by SMS.
6. The voter confirms his/her choice with a digital signature by entering the PIN2-code into the mobile phone.
7. The voter receives a notice on the computer screen that the vote has been accepted.

There is a possibility of an electronic **re-vote** – an i-voter can cast his/her vote again electronically and the previous vote will be deleted.

The traditional means of voting (with a paper ballot) is given priority. Should the voter go to a polling station during advance polls and cast a vote, his or her i-vote shall be deleted. On Election Day the registered i-vote cannot be changed or made void.

After the Internet voting and advance polls end (4<sup>th</sup> day before election day) the list of voters who have voted electronically is comprised and sent to polling stations. The polling station makes a notice that the person has already voted to the voter list. This prevents them from voting for the second time on election day.

**More information: National Electoral Committee <http://www.vvk.ee/>**