

Irish Citizens for Trustworthy E-voting

Irish Citizens for Trustworthy E-voting (ICTE) is a watchdog group made up of computing professionals, academics and other concerned citizens. We believe that electronic voting could be a good idea, if implemented correctly. This leaflet points out some of the serious flaws in the proposed Irish E-voting system.

First, we should explain the front of this leaflet. What do we mean when we say *impossible* to recount?

The proposed Irish electronic voting system records votes directly to computer storage, via a voting machine. This voting machine runs computer software written by humans. When a voter uses one of these machines, the vote is processed by the software before being stored.

If there are any errors in the software – either by simple mistake or by malicious intent – the vote could be recorded incorrectly. No one would ever know. There is no way of checking that the machines are working as they are supposed to. There is no way to have a recount that is independent of the electronic system.

ICTE proposes a simple solution: before storing the voter's electronic vote, the machine prints a paper ballot. The voter checks that the paper ballot is exactly the same as the vote they have entered into the machine. Finally the paper ballot is placed in a sealed ballot box at the same time as the electronic vote is stored.

With this system in place, we would have a paper record or *audit trail* to compare the electronic votes with. Most importantly, the voters themselves would have checked the accuracy of this paper record. Such a system is called a *voter-verified audit trail* (VVAT).

With this in mind, we expose some of the myths surrounding the proposed Irish E-voting solution.

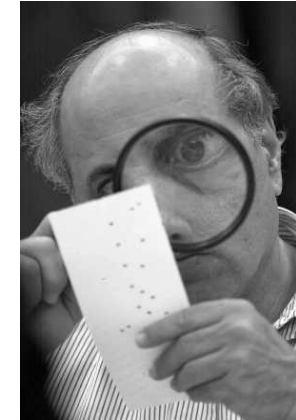
Further Information

The website of ICTE can be found at

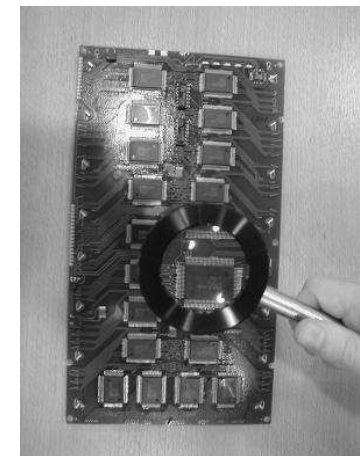
<http://evoting.cs.may.ie/>

This site has more information on E-voting both in Ireland and abroad. You can join the electronic mailing list of ICTE via the 'Discussion' section of the website.

Florida 2000: Difficult to recount



Ireland 2004: Impossible to recount



Myths

Myth: The Irish E-voting system can be trusted as it is.

Fact: At this time there is no way to independently check the accuracy of a result. We are being asked to trust a system controlled by a small group of individuals, with no adequate checks and balances. There has been no complete end-to-end audit of the system.

Myth: Computers do not make mistakes.

Fact: People make mistakes. People program computers. It is wise to make sure that we can check that the computers are working as advertised.

Myth: The Irish E-voting system has been developed to the highest possible standard.

Fact: The developers of the Irish E-voting system have not come close to best practice for developing critical systems. The system uses low-grade software and runs on an ordinary desktop computer. It is constantly being updated and modified. This approach is highly error-prone, and is never used for critical systems in industry.

Myth: The Irish E-voting system was tested successfully at the last general election.

Fact: All this test showed was that the machines did not fail in any obvious way. There is no proof that the machines correctly recorded all the votes cast. This could only be done if an independent paper record of each vote was checked by the voter and placed in a ballot box. Note also that the software has gone through many changes since the last time it was used.

Myth: We trust computers for E-commerce and E-banking. We should trust them for E-voting too.

Fact:

Any electronic financial transaction can be checked at any time by any of the parties involved. They all keep their own independent records. Every day, computer errors occur but they are caught and corrected because of these records. An E-voting system is different - it must protect the secrecy of the ballot by guaranteeing anonymity. When everyone is anonymous it is almost impossible to see the errors. If there is no other record of the vote, then even the most obvious errors cannot be corrected. A paper audit trail would allow us to see and correct all of the errors.

Myth: A paper 'receipt' would endanger the secrecy of the ballot.

Fact: We are not proposing a paper take-home receipt. Our suggestion is that the paper ballots be stored in sealed ballot boxes with all of the security and secrecy used in the present paper-only system.

Myth: The Irish E-voting system is open to independent scrutiny.

Fact: Even the Irish Government will not have the full details of the E-voting software until four months after the next election. A comprehensive audit is impossible.

Myth: E-voting will encourage voter participation.

Fact: There is no evidence to support this assertion. E-voting without adequate checks and balances can only undermine voter trust in the ballot.

Myth: E-voting has cross-party support.

Fact: Many of the opposition parties have serious concerns about the safety and cost of the proposed system. Although the Joint Committee on the Environment and Local Government voted to support the system, the vote was split clearly along government and opposition lines.

Myth: E-voting will show Ireland as a technically advanced democracy.

Fact: Many early users of E-voting are now introducing paper audit trails. Many of the world's leading computer security experts say that E-voting without a paper audit trail is seriously flawed. By putting a system in place without independent audit control, Ireland is neither following best practice nor learning from the mistakes of others.