Letter of the Dutch government sent to parliament on 24th of January 2012 titled: "Framework for the Development of Specifications for Electronic Voting in Elections Covered by the Elections Act"

1. Lessons learned from the process that resulted in the abolition of electronic voting in the Netherlands

The large-scale use of voting machines in the Netherlands came under pressure in autumn 2006, when it was proved that they could be manipulated and the secret ballot could no longer be fully guaranteed because of the electromagnetic radiation they gave off. Eventually two independent commissions considered the issues surrounding them. The Hermans-Van Twist Commission[1] investigated how it was possible for things to reach such a point that confidence in the machines used was no longer justified. The second commission, the Korthals Altes Commission,[2] produced recommendations on how the election process should be organized in future and what principles need to be safeguarded. The reports of both commissions were warmly welcomed by both the then Government and the House of Representatives.

Both commissions carefully analysed what lessons should be learned from the things that went wrong. The main points are:

- The decision to vote electronically should be based on reliability, not convenience. The specifications and assessment of compliance with them should be a matter for the authorities, not the market. Trust should not be placed solely in suppliers of software and/or hardware for electronic voting.
- The operation of the software and hardware should be completely transparent and verifiable. This transparency and verifiability must not be encumbered by commercial interests.
- The specifications must be reviewed at regular intervals. There must be a system to ensure that they are updated and that the software and hardware used is brought into line with the amended specifications where necessary.
- There must be a way of checking, independently of the suppliers and the authorities, that the hardware and software used meets the specifications.

The Government warmly welcomed the commissions' analyses.

2. Principles, international recommendations, etc.

The Korthals Altes Commission set out the principles that need to be safeguarded in elections in the Netherlands. These principles are to some extent enshrined in the Dutch Constitution and laid down in international and European treaties and recommendations of e.g. the Organization for Security and Co-operation in Europe and the Council of Europe.

The principles are:

- Transparency

The election process should be organized in such a way that the structure and organization is clear, so that everyone in principle can understand it. There must be no secrets in the election process: questions must be able to be answered, and the answers must be verifiable.

- Verifiability

The election process should be objectively verifiable. The verification tools may differ, depending on the method of voting that is decided upon.

[1] *Stemmachines, een verweesd dossier* (Voting machines, an orphaned case file), report by the Voting Machines Decision-Making Commission.
[2] *Stemmen met vertrouwen* (Voting with confidence), report by the Election Process Advisory Commission.

- Fairness

The election process should operate in a proper manner, and the results must not be capable of being influenced other than by the casting of lawful votes.

- Eligibility to vote

Only persons eligible to vote must be allowed to take part in the election.

- Free suffrage

Every elector must be able to choose how to vote in complete freedom, free from influence.

- Secret ballot

It must be impossible to connect the identity of a person casting a vote to the vote cast. The process should be organized in such a way that it is impossible to make a voter indicate how he or she voted.

- One man one vote

Each voter, given the Dutch election system, must be allowed to cast only one vote in each election, which must be counted precisely once.

- Accessibility

Voters should be enabled as far as possible to participate directly in the election process. If this is impossible, there must be a way of taking part indirectly, i.e. by proxy.

The specifications for electronic voting need to include specific implementations of these principles and be tested accordingly. As the Korthals Altes Commission noted, there is no method of voting that can provide absolute safeguards for all the principles: in the end it is a question of striking a balance between them.

As regards the principle of the secret ballot, the findings of the Expert Group led by Dr Bart Jacobs, Professor of Computer Security at Radboud University Nijmegen, should also be taken into account. The Expert Group already considered the requirements that need to be laid down for a ballot printer and vote counter in 2008, for State Secretary Bijleveld. One of the aspects that it looked into as part of its remit was the requirements that need to be laid down for electronic voting systems, including monitoring techniques and rationale, so that they are resistant to attacks at polling stations taking advantage of compromising radiation. As regards the requirements needed to deal with compromising radiation it reached the following conclusion:[3]

'In the opinion of the Expert Group the environmental requirements for polling stations are very difficult to reconcile with standard practice at elections, where the emphasis is on accessibility. Also, the operational requirements could have major consequences for the organization of the election process, as all ballot printers would need to be tested individually at regular intervals. This would have to be done at least once every two years and after every incident (fall, knock, replacement of components, etc.). Furthermore, even this cannot absolutely guarantee that all the devices will still comply with the standards on election day. Spot checks could possibly generate a certain degree of trust, but this is not a satisfactory solution according to the Expert Group (and GBS), as no guarantees can be given as regards devices that have not be tested. The issue of compromising radiation really calls for a process of the kind found in Ministry of Defence circles, where all the factors can be controlled. In the Expert Group's opinion this is neither realistic nor desirable in the case of the election process.'

This conclusion by the Expert Group led State Secretary Bijleveld, with the approval of the House of Representatives, to reach a final decision not to take steps to introduce ballot printers as recommended by the Korthals Altes Commission. If it is decided at some future date to develop

[3] TK (proceedings of the House of Representatives) 2007-2008, 31200, No. 64.

specifications for electronic voting it will have to be considered afresh whether the risks of compromising radiation are acceptable, and if so to what extent.

It goes without saying that the specifications developed will also have to be examined in the light of the Council of Europe Recommendation on Legal, Operational and Technical Standards for E-voting.[4] Lastly, research that has been done into electronic voting systems (e.g. by four Belgian universities for the Belgian government[5]) will need to be taken into account when drawing up the specifications.

3. Updating the specifications

One of the lessons learned from the problems in 2006 is that, as noted at 1., it is not enough to draw up a static set of criteria; they will need to be updated so that they remain satisfactory. This means that there will need to be a system for updating the specifications and the authorities will need to have adequate knowledge to do this. In addition to the specifications, then requirements will have to be drawn up for this system.

4. Independent testing of compliance with specifications

If electronic voting is introduced at some future date, official bodies will need to be set up to check independently and transparently, prior to elections, that the hardware and software used complies with the specifications. This will have to be done differently from in the past, when there was in effect a 'black box' and all that was available to the authorities was a certificate that the voting machines had been tested.

Belgium might be a good example of how to set about this. The Belgian federal Elections Act provides for a Board of Experts appointed by the Belgian Parliament. The Board does not itself have any responsibilities as regards actual elections; its sole function is to act as a watchdog. During elections it therefore supervises the use and correct operation of all computerized voting and counting systems and the procedures for the development, distribution and use of hardware, software and electronic data media. In particular it can check the reliability of the software in the voting machines, the correct overwriting of all votes cast, the totalling of votes cast, optical reading of votes cast, the verification system for the computerized ballot for printing hard copy of the votes cast, and so on. The Board carries out its checks starting on the fortieth day before the election, on election day itself and for fifteen days after the election, until the report is submitted to Parliament.[6] The Belgian Parliament decides on the validity of the election results, based partly on this report.

5. Cost

Introducing electronic voting inevitably involves a substantial investment. By way of illustration, Belgium is considering introducing a new electronic voting system, for which it has issued an EU tender. The Belgian government estimates the cost of purchasing the system at a one-off €10,000 per polling station[7] plus €2,000,000 for each election just for software maintenance and updating.

[4] Recommendation (2004)11 http://www.coe.int/t/dgap/democracy/Activities/GGIS/E-voting/
[5] http://www.ibz.rrn.fgov.be/fileadmin/user_upload/Elections/fr/presentation/bevoting-2_gb.pdf
[6] Section 5bis of the Belgian Elections Act.
[7] There are about 10,000 polling stations in the Netherlands.

Any future introduction of electronic voting would have to be funded from the resources provided as standard practice to municipal authorities under the Municipalities Fund for the organization of elections. Central government does not have a budget for this purpose.

6. How to organize the development of specifications for electronic voting

Any decision to allow electronic voting again will need to command broad support, not only from those who see the benefits but also from those who acknowledge the risks. Mistrust of the voting systems used and/or criticism of them at every election must be avoided. This undermines confidence in elections and could result in changes being made just before an election, as happened in 2006. This needs to be avoided.

The specifications for electronic voting therefore need to be developed primarily by independent experts. There are various options, for example:

- An expert committee, such as the Expert Group set up by the former State Secretary for the Interior and Kingdom Relations in 2008
- Academics, as in Belgium, for instance

Whatever solution is adopted, it is important that these should be independent experts in the fields relevant to the specifications. Based on their findings, the Government and the House of Representatives should then decide whether is it feasible and desirable to introduce electronic voting. Lastly, an amendment to the Elections Act would be needed to enable electronic voting to be introduced.

7. The international situation

Only a small number of countries in the world use voting computers, and this is also the case in Europe. There are countries where, as in the Netherlands, it was decided to discontinue electronic voting following controversy as to the reliability of the voting machines used, one example being Germany. A new electronic voting system (with a paper trail) is being looked at in Belgium, which has put the new system out to tender. Prototypes are now being developed and tested. Even if the new system is introduced, however, electronic voting will not be available throughout Belgium. The only country where voting takes place via the Internet (and at polling stations using paper ballots) is Latvia, though there are indications that Norway also intends to experiment with this.

Electronic counting is used sporadically in Europe. Experiments have taken place with electronic voting and electronic counting in the UK, but they were discontinued. Only in London does electronic counting take place, in local elections (e.g. the mayoral election). Scotland appears to be taking steps in the direction of electronic counting.