

Part 9

Recommendations on Electronic Voting

Introduction (Part 9)

This part contains the Commission's recommendations for alternative or complementary measures that can enhance the secrecy and accuracy of the chosen system and to underpin the future development of electronic voting in Ireland.

The Commission's recommendations arising from its work specifically in relation to the secrecy and accuracy of the chosen system as currently proposed for use were outlined in *Part 8*.

Recommendations

ELECTRONIC VOTING OPTIONS

In addition to the specific recommendations concerning the chosen system in *Part 8*, the Commission further recommends that the following additional steps are highly desirable and would enhance the secrecy and accuracy of the chosen system and the levels of confidence surrounding its use at elections in Ireland:

Software and Hardware

R.22: Alternatives to the election management software should be explored, having regard to the following desirable characteristics:

- clear definition of requirements and specifications,
- a robust and formal approach to design and development,
- appropriate software platform,
- integration with existing and future hardware technologies,
- separation of critical concerns (election management, count rules, vote file, etc.),
- deployable in any combination of elections without modification,
- appropriate maintenance and version control methodologies,
- key design elements should remain stable between elections,
- structured so as to facilitate essential design changes without requiring full re-testing,
- data, etc., that are subject to change should be maintained separately.

R.23: In exploring alternatives to the election management software, the use of open source methods, to an appropriate degree, should be considered as a way to harness and synergise the considerable levels of interest in electronic voting and elections in Ireland with abundant and freely available software engineering expertise.

R.24: The feasibility of implementing enhanced levels of audit within the hardware of the chosen system should be explored, including by means of the printer already present in the voting machine or by the further adaptation of the voting machine.

R.25: Alternative technologies, or alternative formats of PC technology, to the hardened PC in the format currently proposed as a platform for administering critical election management functions and handling and counting votes should be explored.

Specific Secrecy and Accuracy Issues

R.26: The Irish vote counting rules as used in electronic voting should be changed (for example to a version of the Gregory counting rules) to provide a more accurate method of vote counting than currently applies due to random sampling under the current rules, thus maximising the potential for increased levels of accuracy inherent in electronic counting systems.

R.27: Alternative manual vote recording methods (such as optical character recognition and other scanned-in ballot formats) that are compatible with electronic counting methods should be provided for postal voters so that their votes can be incorporated in the electronic count with greater accuracy and secrecy.

Accessibility and Voter Options

R.28: Alternative electronic voting methods should be provided to ensure secrecy and ease of voting across a broader range of voters with disabilities.

R.29: The voting machine interface should be modified so as to allow the option of casting blank or null votes uniformly and anonymously as under the paper system.

Requirements, Specifications and Transparency

R.30: Publication or public inspection of the source code of the chosen system would allow a more open review of the system by computer experts and would facilitate informed debate, greater understanding and confidence in the system among the public as a whole.

R.31: Confidence in the system could be further enhanced by providing a facility for open public testing of the vote recording software and the vote counting software via an on-line web interface designed to simulate the hardware interfaces of the system.

R.32: Future developments of electronic voting in Ireland should be underpinned by a full and formal process of requirements capture and functional specifications for any proposed new system.

Physical and Operational Security

R.33: Consideration should be given to the storage of electronic voting equipment on a regional or central basis rather than locally within constituencies as at present.

ELECTRONIC VOTING CONTEXT

The Commission also recommends that the following measures in the areas of electronic voting best practice and electoral administration can contribute to ensuring that the requisite standards of secrecy and accuracy are met and continue to be maintained in the deployment of electronic voting in Ireland:

Electronic Voting Standards

R.34: In the context of future implementations of electronic voting, Ireland should continue to participate, cooperate and contribute actively in the development of international measures of best practice, guidance and standards in the area of electronic voting.

R.35: The compliance of electronic voting in Ireland with the non-binding Recommendation Rec (2004)11 of the Committee of Ministers of the Council of Europe should be addressed in the light of areas for improvement and areas of non-compliance identified by the Commission.

R.36: Pending the agreement of an internationally agreed standard on electronic voting:

- a working Irish standard in accordance with emerging best practice should be developed and adopted, and
- an independent body should have responsibility for testing and certifying the compliance of the hardware and software components of the chosen system in Ireland, and the compliance of the system as a whole, with the Irish standard.

R.37: Following the agreement of an internationally agreed standard on electronic voting, and in any case, before the future development of electronic voting in Ireland, provision should be made for the following:

- accreditation, by the relevant Irish authorities, of a body or bodies to test and certify electronic voting equipment for use in Ireland in accordance with recognised Irish or internationally agreed standards,
- testing and certification, by such body or bodies, of the compliance of such equipment with those standards,
- type approval, by the appropriate electoral authorities, for the use in Ireland of electronic voting equipment so certified.

Electoral Administration

R.38: Consideration should be given to the need for public consultation on electronic voting in Ireland and how the results of such consultation may inform the further development and deployment of the chosen system or any alternative methods of electronic voting in the future.

R.39: The development of an electronic register of voters can contribute significantly to the accuracy of elections: however the electronic register should remain separate from electronic voting systems in order to provide continued assurance of voter anonymity in the voting process.

R.40: There should be greater segregation of responsibilities for the administration of electronic voting in the following areas currently administered by the Department:

- overall policy formulation, implementation and funding,
- monitoring of international best practice and developments,
- official testing and type-approval of equipment,
- procurement and acceptance of equipment,
- direction of overall deployment,
- oversight of local deployment by returning officers.

R.41: There is an increased need, in the context of electronic voting, for the establishment of a single independent statutory electoral commission for Ireland.

Recommended previously in other official reports, such an electoral commission would be in keeping with best international practice and would have responsibility for relevant aspects of electoral administration and oversight currently vested in the Department, the Commission and various other commissions, including the Standards in Public Office Commission, the Referendum Commission and the Constituency Commission.

The responsibilities of an electoral commission should also include the development of standards for electronic voting, ensuring overall compliance with those standards and the observation of elections conducted by electronic means.

GENERAL

These recommendations, together with the full details of the work carried out by and on behalf of the Commission should be submitted by the Department for independent technical and operational review and advice prior to implementation.