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Emerging International Standards for E-enabled Elections

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Emerging International Standards for E-enabled Elections¹

When considering a change in any sort of system, especially an important one such as a voting and counting system, it is vital that the underlying standards by which different systems can be judged are kept in mind. There are a number of different approaches to the challenge of judging electoral processes. In recent years, opinion appears to have coalesced around the concept of international electoral standards as defined by public international law.²

Public international law based electoral standards are well elaborated in documents issued by the United Nations,³ the European Commission,⁴ the Organization for Security and Cooperation in Europe (OSCE)⁵ and the Venice Commission.⁶ The way these electoral standards are categorized by the different institutions are not exactly the same, but it does illustrate a common understanding of the content of international electoral standards. Drawing directly from the wording of Article 25 of the International Covenant on Civil and Political Rights (ICCPR), the core of these international electoral standards can be defined as the following:

- **Fair Elections (without any distinctions)** – Elections should be conducted so as to ensure equal conditions for participation in the electoral process for all eligible candidates and voters, irrespective of gender, religion, ethnicity, political affiliation, language, literacy or disability.
- **Genuine Elections** – Elections must be held for institutions which have authority, must be conducted in a credible manner, must present voters with real choices between candidates for election, with the results of elections representing the will of the people.
- **Periodic Elections** – Elections must be held frequently enough to ensure that governmental authority continues to reflect the will of the people and that there is regular opportunity for the voters to change government.
- **Universal Suffrage** – Legal and operational limitations on access to candidacy or the right to vote must be minimized and must not be discriminatory in nature, except where such limitations are reasonable or necessary.⁷
- **Equal Suffrage** – Voters should each be provided the same number of votes in each election being conducted and electoral districts should be reasonably equal in size so that each vote cast has a similar weight.
- **Secret Ballot** – In order that voters be able to freely express their electoral preferences in the absence of intimidation, the ballot should be completed in private and it must not be possible to link a voter to a voting preference.

¹ This paper is taken from Goldsmith, B. (2011) Electronic Voting and Counting Technologies: A Guide to Conducting Feasibility Studies, International Foundation for Electoral Systems.

² See for example the Inter-Parliamentary Union's publication in 1994 - Goodwin-Gill, G. (1994) Free and Fair Elections: International Law and Practice, Inter-Parliamentary Union: Geneva and the updated version - Goodwin-Gill, G. (2006) Free and Fair Elections: New Expanded Edition, Inter-Parliamentary Union: Geneva.

³ Centre for Human Rights (1994) Professional Training Series No.2: Human Rights and Elections – A Handbook on the Legal Technical and Human Rights Aspects of Elections, United Nations: New York and Geneva.

⁴ European Commission (2007) Compendium of International Electoral Standards: Second Edition, European Commission: Brussels.

⁵ OSCE (2007) Election Observation Handbook: Fifth Edition, OSCE Office for Democratic Institutions and Human Rights: Warsaw.

⁶ European Commission for Democracy Through Law (Venice Commission) (2002) Code of Good Practice in Electoral Matters: Guidelines and Explanatory Report, Adopted by the Venice Commission at its 52nd session (Venice, 18-19 October 2002), CDL-AD(2002) 23 rev.

⁷ For example, on the basis of age, nationality, residence, mental incapacity or criminal conviction.

- **Free Elections** – The electoral environment must be such that information on electoral contestants can be made available to voters, informed discussion about electoral options can take place, and voters are able to make electoral choices without intimidation.

These political/electoral rights and standards do not operate in a vacuum. In fact political rights work in parallel with other human rights and a healthy electoral environment relies on the realization of these broader human rights. Human rights relevant to the conduct of elections include the rights to freedom of expression,⁸ freedom of information,⁹ freedom of assembly,¹⁰ freedom of association,¹¹ freedom of movement,¹² to non-discrimination,¹³ and to self-determination.¹⁴ Transparency is also an essential component for a credible electoral process. The requirement for transparency is derived in part from some of the human and political rights standards outlined above.¹⁵ It is also based on other international standards, such as anti-corruption standards, which require public affairs to be conducted in a transparent manner.¹⁶

The international electoral standards outlined above are equally relevant for the use of technologies to assist the processes of voting and counting, as clearly stated in the Council of Europe's 2004 Recommendation on Legal, Operational and Technical Standards for E-voting, which states:

“e-voting shall respect all the principles of democratic elections and referendums.”¹⁷

Increasingly so, the use of new technologies for voting and counting are fundamentally changing the way these components of the electoral process are conducted. As a result, the use of technologies for voting and counting is also challenging this body of international electoral standards.

Some of these standards are no longer adequate to deal with electronic voting and counting technologies. Other technology related operations are not covered at all by the existing set of standards. For example, it is clear that the use of electronic voting and counting technologies will have little or no impact on the right to freedom of movement or freedom of association. However, other standards such as the secrecy of the vote or the fairness of the electoral process may be significantly impacted by the use of such technologies.

As a result, there have been initiatives in recent years to evolve these international electoral standards in order to cope with the challenges of using voting and counting technologies.¹⁸ The Council of Europe's 2004 Recommendation on Legal, Operational and Technical Standards for E-voting¹⁹ did much to set the agenda for this adaption of existing standards for electronic voting and counting technologies. The CoE has followed up this recommendation with the publication of an E-voting Handbook²⁰ presenting guidelines for implementing e-enabled elections and soon to be published guidelines on certification and transparency for e-enabled elections²¹. In 2006 the European

⁸ Article 19 of the ICCPR.

⁹ Article 19 of the ICCPR.

¹⁰ Article 21 of the ICCPR.

¹¹ Article 22 of the ICCPR.

¹² Article 12 of the ICCPR.

¹³ Article 2 of the ICCPR.

¹⁴ Article 1 of the ICCPR.

¹⁵ For example, the right to information, that elections are credible (genuine) and that elections are conducted in a fair manner.

¹⁶ See the United Nations Convention Against Corruption, especially articles 5, 7, 9, 10 and 13.

¹⁷ The Council of Europe (2004) Legal, Operational and Technical Standards for E-Voting, Recommendation Rec(2004)11 adopted by the Committee of Ministers of the Council of Europe on 30 September 2004 and Explanatory Memorandum, p. 7.

¹⁸ It is worth noting that a number of national standards have been developed to guide the use of electronic voting and counting technologies, such as the US Election Assistance Commission's (2005) Voluntary Voting System Guidelines (http://www.eac.gov/testing_and_certification/voluntary_voting_system_guidelines.aspx - last accessed on 30 January 2011). However, these standards are only national standards and do not entail international obligations on other states. The sources referenced in the discussion on emerging standards all relate to international organization's commitments or guidance to their members states, or international NGOs which are influential in the area of establishing electoral standards.

¹⁹ Council of Europe (2004).

²⁰ Caarls, S. (2010) E-voting Handbook: Key steps in the implementation of e-enabled elections, Council of Europe Publishing: Strasbourg.

²¹ Council of Europe (forthcoming) Certification of e-voting systems: Guidelines for developing processes that confirm compliance with prescribed requirements and standards and Council of Europe (forthcoming) Guidelines transparency of e-

Commission also published a report titled Methodological Guide to Electoral Assistance which covers support for the introduction of election technologies, including electronic voting and counting technologies and the standards that might be applicable in their use.²²

The OSCE's Office for Democratic Institutions and Human Rights,²³ the Organization of American States,²⁴ the Carter Center²⁵ and the National Democratic Institute for International Affairs (NDI)²⁶ have also approached the issue of standards for electronic voting and counting technologies from the perspective of observing elections in which these technologies are used. Elections using electronic voting and counting technologies are inherently less transparent than paper based elections, as electronic events take place which are not possible to observe with the naked eye.²⁷ This makes it more difficult to determine the credibility of the electoral process and whether any fraud or mistakes have taken place in their conduct. In fact leading experts in the field of e-voting argue that the lack of transparency with electronic voting and counting systems is the greatest challenge facing the implementation of such technologies.²⁸

As a result, the use of electronic voting and counting technologies has presented particular problems for organizations attempting to observe and evaluate the conduct of elections. Publications by these leading election observation organizations are consequently highly relevant to the debate on emerging standards for the use of electronic voting and counting technologies.

In analysing these important publications it is clear that some trends are emerging in the recommendations being made by all of these organizations about the conduct of elections using electronic voting and counting technologies. Common themes can be seen in the following areas:

- **Transparency** – Transparency is related to many of the more specific emerging standards below, but is important enough to merit discussion separately. Transparency is a general electoral standard, but one which is particularly challenged by the use of electronic voting and counting technologies. Special focus needs to be placed on the realization of transparency while using these technologies. This means that as much of the operation of the process using electronic voting and counting technologies is transparent or observable.²⁹ However, access should be provided for observers in a manner that does not obstruct the electoral process.³⁰
- **Public Confidence** – Closely related to and relying heavily upon transparency, is the requirement that voters understand and have confidence in the electronic voting or counting technology being used.³¹ Public confidence requires that stakeholders are involved in the introduction of electronic voting and counting technologies,³² are provided information so they

enabled elections both drafted by the Council of Europe's Directorate of Democratic Institutions, "Good Governance in the Information Society" Project.

²² European Commission (2006) Methodological Guide to Electoral Assistance, see http://ec.europa.eu/europeaid/multimedia/publications/documents/thematic/ec_methodological_guide_on_electoral_assistance_en.pdf (last accessed on 31 January 2011).

²³ OSCE (2005) Challenges of Election Technologies and Procedures: Final Report, Supplementary Human Dimension Meeting, PC.SHDM.GAL/5/05; OSCE (2008) OSCE/ODIHR Discussion Paper in Preparation of Guidelines for the Observation of Electronic Elections, ODIHR.GAL/73/08.

²⁴ OAS (2010) Observing the Use of Electoral Technologies: A Manual for OAS Electoral Observation Missions, General Secretariat of the Organization of American States (GS/OAS), see www.oas.org/es/sap/docs/Technology%20English-FINAL-4-27-10.pdf (last accessed on 27 January 2011).

²⁵ The Carter Center (2007) Developing a Methodology for Observing Electronic Voting, see http://www.cartercenter.org/documents/elec_voting_oct11_07.pdf (last accessed on 30 January 2011).

²⁶ Pran, V. and Merloe, P. (2007) Monitoring Electronic Technologies in Electoral Processes: An NDI Guide for Political Parties and Civic Organizations, National Democratic Institute for International Affairs, see http://www.ndi.org/files/2267_elections_manuals_monitoringtech-preface_0.pdf (last accessed on 2 February 2011).

²⁷ OSCE (2008), p. 2.

²⁸ Krimmer, R. (Ed.) (2006) Electronic Voting 2006: Overview of Proceedings of 2nd International Workshop, co-organised by the Council of Europe, ESF-TED, IFIP WG8.6 and E-Voting.CC.

²⁹ Council of Europe (2004) Recommendations 23 and 56; OAS (2010) p.28.

³⁰ Pran and Merloe (2007) p. 62.

³¹ Council of Europe (2004) Recommendation 20.

³² The Carter Center (2007) p. 8.

understand the technologies being used,³³ simulations of the systems take place³⁴ and voters are informed well in advance about the introduction and what is required to participate.³⁵

- **Usability** – Electronic voting and counting technologies must be easy to understand and use for as many voters as possible.³⁶ Users (voters) should be involved in the design of electronic voting and counting technologies³⁷ and in public testing.³⁸ Furthermore, these electronic voting and counting technologies must try to maximize the accessibility of the voting system for persons with disabilities³⁹ and afford voters the possibility to stop and cancel their vote before confirmation of their choice.⁴⁰
- **System Certification** – Electronic voting and counting technologies must be certified by an independent body before use and periodically thereafter. This ensures the system continues to meet the requirements of the electoral jurisdiction as well as the technical specifications for the system. Furthermore, the certification process should be conducted in a transparent manner providing electoral stakeholders access to information on the process.⁴¹
- **System Testing** – Any electronic voting or counting system should be subjected to a comprehensive range of testing⁴² before it is approved for use by an EMB,⁴³ This testing should take place transparently and with access for political actors.⁴⁴
- **System Security** – The opportunities for systematic manipulation of the results mean that system security needs to be taken extremely seriously. Security measures need to be taken to ensure that data cannot be lost in the event of breakdown, only authorized voters can use an electronic voting or counting system, system configuration and results generated can be authenticated and only authorized persons are allowed to access electronic voting, counting and results management functionality.⁴⁵ Attempts to hack into electronic voting and counting machines or the election management system into which results are received, need to be detected, reported and protected against.⁴⁶
- **Audit and Recount** – Electronic voting and counting technologies must be auditable⁴⁷ so it is possible to determine whether they operated correctly. It must be possible to use an electronic voting or counting system to conduct a recount.⁴⁸ Such recounts must involve meaningful manual recounts of ballots cast electronically⁴⁹ and not merely a repetition of the electronic result already provided.⁵⁰
- **Voter Verified Audit Trail** – In addition to the above requirements for auditability in any electronic voting or counting system, it must also be possible to assure voters that their votes are being counted as cast⁵¹ while also ensuring that the secrecy of the vote is not compromised.⁵² This requires that electronic voting systems⁵³ create an audit trail which is

³³ Council of Europe (2004) Recommendation 21; OAS (2010) p.20.

³⁴ Pran and Merloe (2007) p. 59.

³⁵ Council of Europe (2004) Recommendation 38; OSCE (2008) p. 14.

³⁶ Council of Europe (2004) Recommendation 1; OSCE (2008) p. 13; OAS (2010) p.20.

³⁷ Council of Europe (2004) Recommendation 62.

³⁸ OSCE (2008) p. 14.

³⁹ Council of Europe (2004) Recommendation 3; OSCE (2008) p. 13; OAS (2010) p.20; Pran and Merloe (2007) p. 76.

⁴⁰ Council of Europe (2004) Recommendation 14; OSCE (2008) p. 13-14.

⁴¹ Council of Europe (2004) Recommendations 24 and 25; OSCE (2008) p. 22; Pran and Merloe (2007) p. 65-66 and 72; Carter Center (2007) p. 7.

⁴² A full range of tests are described later in this guide.

⁴³ Council of Europe (2004) Recommendation 31; OSCE (2008) p. 22; OAS (2010) p.20; Carter Center (2007) p. 7.

⁴⁴ OAS (2010) p.28; Pran and Merloe (2007) p. 67.

⁴⁵ Council of Europe (2004) Recommendations 32-33 and 77-99; Carter Center (2007) p. 7-8; OAS (2010) p.19-20.

⁴⁶ OSCE (2008) p.12.

⁴⁷ Council of Europe (2004) Recommendation 59; OSCE (2008) p. 7; OAS (2010) p.20.

⁴⁸ Council of Europe (2004) Recommendation 26; OSCE (2008) p. 7.

⁴⁹ OSCE (2008) p. 19.

⁵⁰ Pran and Merloe (2007) p. 78.

⁵¹ Carter Center (2007) p. 7.

⁵² OSCE (2008) p. 18.

⁵³ Electronic counting machines have a natural voter verified audit trail in the paper ballot which was completed by the voter.

verifiable. It should provide the voter with a token/code with which to perform the verification externally and not show the way in which the vote was cast. The most common solution to this for in-person electronic voting machines is through the production of a VVPAT, and this solution is emerging as a standard in this regard.⁵⁴ It should be noted that this VVPAT solution is not appropriate for remote electronic voting which uses electronic voting machines (e.g. internet voting, text message voting etc.) as there would be nothing to stop a voter from removing the paper record of the vote, making vote buying and voter coercion possible.⁵⁵

- **Mandatory Audit of Results** – The existence of an audit trail for electronic voting and counting systems achieve little if it is not used to verify that the electronic results and the audit trail deliver the same result. Doing so also serves to build public confidence in the operation of the electronic voting or counting technologies. A mandatory audit of the results generated by electronic voting or counting technologies should be required by law and take place for a statistically significant random sample of ballots.⁵⁶
- **Secrecy of the Ballot** – The secrecy requirement is not a new standard but it is one that is made more difficult by electronic voting and counting technologies. This is especially the case for remote electronic voting systems where voters have to first identify themselves and vote electronically using the same interface. The use of electronic voting and counting technologies must comply with the need for secrecy of the ballot.⁵⁷
- **Incremental Implementation** – Whenever electronic voting and counting technologies are introduced they should be done so in an incremental manner and should start with less important elections. This will allow public understanding and trust to develop in the new system, and provide time to deal with problems and resistance.⁵⁸

It is far too early at this stage to say that international standards have completed their evolution in order to adapt to the challenges posed by electronic voting and counting technologies. Nevertheless, the trends that can be seen in these emerging electoral standards for the use of electronic voting and counting technologies should be carefully considered as any new technology is assessed.

⁵⁴ OSCE (2008) p. 8 and 23; Pran and Merloe (2007) p. 72 and 75. Although it must be said that a voter verified paper audit trail is not the only way in which this can be achieved. In Belgium for example, the vote is stored on a magnetic card which can be verified on other voting machines before being placed in the ballot box. This Belgian system creates a voter verifiable audit trail without the use of paper. This is not to say that the Belgian system is better or worse than the VVPAT solution, merely to indicate that there may be other non-paper methods of achieving the standard.

⁵⁵ In fact, one of the greatest challenges facing remote e-voting remains the establishment of a vote verification mechanism for remote voters in an easily understandable way which does not also provide a way to violate the secrecy of the vote. There are some solutions which provide codes to voters which can be checked to see that the vote is included in the count, but nothing that can prove the value of the verified vote without relying on complicated mathematical proofs which the average voter would have to trust just as much as the operation of an electronic voting machine.

⁵⁶ Council of Europe (2010) p.12; OSCE (2008) p. 18; Pran and Merloe (2007) p. 64 and 79.

⁵⁷ Council of Europe (2004) Recommendations 16-19; OSCE (2008) p. 11-12; Carter Center (2007) p. 9; OAS (2010) p. 19.

⁵⁸ OSCE (2008) p. 23; Carter Center (2007) p. 2.



Emerging International Standards for E-enabled Elections

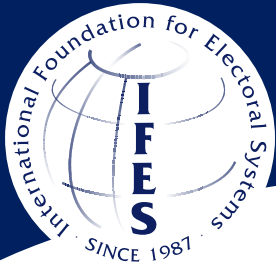
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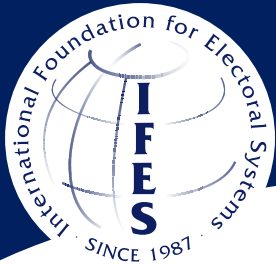
What are electoral standards ?

- Public International Law the framework for electoral standards
- Public International Law Sources – conventions, custom, general principles, judicial decisions and teachings
- Established electoral standards
- “Emerging” standards for “E-enabled elections”
- Sources in Practice



Existing Electoral Standards

- Based on ICCPR provisions
 - Fair elections
 - Genuine elections
 - Periodic elections
 - Universal suffrage
 - Equal suffrage
 - Secret ballot
 - Free elections
- General human rights provisions (ICCPR and others)



A need for new standards ?

- Existing standards applicable

“e-voting shall respect all of the principles of democratic elections and referendums”

(CoE 2004)

- E-enabled elections challenge the traditional paper-based way of conducting elections



Sources for emerging standards

- CoE 2004 Recommendation on Standards for E-voting and 2011 Handbooks
- EC 2006 Guide to Electoral Assistance
- OSCE 2008 Discussion Paper on Observing Electronic Elections
- OAS 2010 Manual for Observing Electoral Technologies
- Carter Center 2007 Methodology for Observing E-voting
- NDI 2007 Monitoring Electronic Technologies



Common Themes I

Transparency – ensure observability and provide access

Public Confidence – vital for legitimacy, include and inform stakeholders

Usability – easy to use for voters and accessible for people with disabilities

System Certification – systems certified by an independent body in transparent manner



Common Themes II

System Testing – must be tested before use,
with access by stakeholders

System Security – measures required to secure
against loss and corruption of data

Audit and Recount – must be auditable and
able to conduct a meaningful recount

Voter Verified Audit Trail – assure voters that
votes counted as cast, but ensuring secrecy



Common Themes III

Mandatory Audit of Results – verifies the electronic results and builds confidence

Secrecy of the Ballot – deal with the specific challenges of linking the voter to the vote

Incremental Implementation – builds public understanding, confidence and trust over period of time



Status of emerging standards

- None of the sources are treaties
- None are binding on states
- But are indicative of or definitive of emerging norms
- Too early to say that this normative framework established
- But should be used as a guide for implementation of election technologies



Thank you.