The Carter Center Handbook on Observing Electronic Voting

THE
CARTER CENTER

Observing Electronic Voting

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THE
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INTRODUCTION

Electronic voting (e-voting) represents a significant challenge for election observers.[1] These technologies have the potential to facilitate and improve electoral processes and are adopted for a number of reasons. These include the perceived advantages in increased voter access, the possibility of decreased costs (in the long term), facilitation of the conduct of simultaneous or complex elections, earlier announcement of results, potentially fewer opportunities for retail fraud, and fewer errors by voters and poll workers.

These technologies, however, pose risks to the integrity of the electoral process that can quickly erode public confidence. Such risks include the possibility of technical failure, external interference with the system, internal malfeasance, and the loss of oversight by and accountability of the election management bodies. These threats have the potential to violate fundamental electoral rights and to subvert the will of the people on a large scale and in an undetectable manner.

Many aspects of an e-voting system are essentially unobservable using traditional observation methods. The Carter Center recognizes that election observers must equip themselves with a new set of tools and methodologies that allow better understanding not only of the technologies in use but also the systems of checks and balances put in place to support the use of e-voting technologies. To respond to these challenges, The Carter Center developed the Baseline Survey for Observing Electronic Voting. First released in a handbook in 2007, the methodology has been tested in multiple electoral contexts. This second edition reflects the lessons learned from those experiences.

Structure of This Handbook

This handbook is designed to supplement other tools and resources available to Carter Center election observation missions (EOMs). It therefore does not cover every aspect of an election observation mission. Instead, it provides additional detail regarding those issues related to the use of e-voting technologies. This handbook is organized into the following sections:

[1] E-voting can be defined as the use of electronic means to cast, record, and/or count votes. E-voting devices may include, for example, those in polling stations, Internet voting, mixed systems, voting by mobile telephone, and so forth. Within the category of voting machines in polling stations, there are direct recording electronic (DRE) devices, DRE devices with a voter-verified paper trail (VVPAT), optical scan devices, and others. In some of these systems, votes are recorded on each voting machine; in others, all votes are stored on a single device in the polling station; and in some, the votes are sent to a central server exterior to the polling station.

- **Development of the Baseline Survey for Observing Electronic Voting.** This section provides background on the Center's efforts to develop, test, and refine the Baseline Survey for Observing Electronic Voting.
- **Voting Technologies and the Election Observation Mission.** This section provides an overview of staffing and mission timing considerations that may differ from traditional EOMs.
- **International Obligations Regarding the Introduction and Use of Electronic Voting Technologies.** This section of the handbook builds on the content of the *Developing a Methodology for Observing Electronic Voting* publication of 2007, providing more guidance regarding the international obligations and good practices associated with the use of e-voting technologies.
- **Using the Baseline Survey for Observing Electronic Voting.** This section provides a brief introduction to the baseline survey, followed by the survey itself as Appendix A.
- **Appendices.** Included in Appendices B–G are additional resources for Carter Center EOMs, including sample election day checklists, Guidelines on Observing Electronic Voting (a paper produced as part of the Declaration of Principles for International Election Observation process), a brief introduction to e-voting technologies, and finally a selected bibliography of useful resources and reference materials related to the use of e-voting.

DEVELOPMENT OF THE BASELINE SURVEY FOR OBSERVING ELECTRONIC VOTING

1

The Carter Center began development of a methodology for observing e-voting in 2005 with a series of consultative experts meetings held in Atlanta, Georgia. The result of these meetings, which brought together electoral experts from the United States and abroad, was an initial draft of the Carter Center's Baseline Survey for Electronic Voting, published in 2007. This baseline survey was intended to provide observers with a better understanding of voting technologies in use, including testing, auditing, and election day processes. In addition, it was designed to be general enough in nature to allow for applicability to a number of e-voting technologies, in a variety of political and electoral contexts, while specific enough to provide useful information to a mission.

The Center's baseline survey was first tested in Venezuela's 2006 presidential election. A small team was deployed to Caracas to observe voting and counting as well as post-election audit procedures.[2] In October 2007, The Carter Center published *Developing a Methodology for Observing Electronic Voting*,[3] which detailed the process of implementing the baseline survey in Venezuela, the challenges faced by the Center in using the survey to understand both the electoral technology and larger electoral process, and lessons learned for future development. The baseline survey and election day checklists from the Venezuela mission were included as appendices to the report.

In 2008, The Carter Center conducted a second limited field test of the methodology in the United States. The Carter Center normally does not observe United States elections. However, the educational visit of a number of Chinese scholars and officials from the Ministry of Civil Affairs provided an opportunity to further test and refine the survey. The study mission used the methodology to assess different types of e-voting technology used in Washington, D.C., northern Virginia, Georgia, and the San Francisco area. Lessons learned and key recommendations from this mission were incorporated in revisions to the baseline survey.

[2] The final report from the Venezuela mission is available at http://www.cartercenter.org/resources/pdfs/news/peace_publications/democracy/venezuela_2006_eng.pdf.

[3] The publication is available at http://www.cartercenter.org/documents/elec_voting_oct11_07.pdf.

The third and final test of the baseline survey occurred during the May 10, 2010, Philippines elections.[4] The 2010 Philippines elections were the first in which a nationalized system of optical mark recording devices would be used in the country. The Carter Center sent three electoral technology experts to the Philippines to observe pre-election testing, auditing, and public education. These experts were joined by another seven observers on election day. The Philippines mission allowed The Carter Center a final opportunity to make final revisions to the baseline survey.

This handbook revises and expands upon the 2007 *Developing a Methodology for Observing Electronic Voting* publication, incorporating the cumulative recommendations and lessons learned over the course of the three missions and serving as a supplement to the other tools and resources available to Carter Center observers. The Carter Center hopes the general focus of the baseline survey will allow users to apply it to any number of voting technologies, while the comprehensive framework of questions will provide necessary detail to facilitate a solid understanding of the system in use.

[4] The final report from the Philippines mission is available at http://www.cartercenter.org/resources/pdfs/news/peace_publications/election_reports/philippines-may%202010-elections-finalrpt.pdf.

VOTING TECHNOLOGIES AND THE ELECTION OBSERVATION MISSION

2

Observation of voting technologies is only one aspect of a larger election assessment that should focus on evaluating whether a number of fundamental human rights are fulfilled throughout the electoral process. Outlined in the following section of the handbook are the roles and responsibilities of key staff members and the impact of e-voting technologies on the recruitment and training of observers as well as on the collection and analysis of data. This handbook is intended as a supplement to other Carter Center tools and resources for observing elections.

Mission Staff — The Electronic Voting Experts

Observation of e-voting technologies generally requires that at least two members of the field team have specialized skills, ideally a combination of electoral experience and a background in technology or computer science. Such expertise allows staff members to consider the technical aspects of the e-voting system in use, while still understanding the larger trends of the electoral process and the impact of the technologies on this process.

E-voting experts should focus principally on the testing and assessment of the voting technology itself. Political analysis may best be left to other team members. However, it is important to note that no e-voting technology process can be fully divorced from the political and social context of the larger electoral process. Therefore, staff members must remain keen to their surroundings and to any signals of policy or political reasoning behind decisions regarding the introduction and use of voting technologies.

E-voting experts should have 5–10 years of relevant experience and report to a field office director for overall oversight and direction. The primary responsibilities of the e-voting experts in the months leading up to the election will be as follows, with requisite flexibility for unique situations as they may arise:

1. Become familiar with the electoral technology in use in the observed country, including its functionalities, testing processes, vendor and procurement history, and any potential security vulnerabilities.
2. Attend meetings with stakeholders interested in the use of voting technologies, focusing on their role in its implementation, any perceived problems, and reasons for the choice of this technology.

3. Complete the Carter Center's Baseline Survey for Observing Electronic Voting, with help from long-term observers to gather data as necessary.
4. Write an overview of results and findings from the baseline survey for circulation within the EOM.
5. Develop tools for data collection on e-voting technologies for use by long-term observers (LTOs) and short-term observers (STOs).
6. Provide weekly updates to mission members (including the LTOs) on e-voting-related processes, including time lines for testing, trends in implementation of the policies and procedures regarding e-voting, and other issues.
7. Supplement the Carter Center's basic training course for observers of e-voting with information particular to the system in use and the country to be observed.
8. Serve as a resource to the mission on all aspects of and issues related to the e-voting system.

The e-voting expert will work in close collaboration with the larger team, particularly the field office director, the legal analyst, and the observer coordinator, who may incorporate issues on the use of e-voting technologies into the weekly areas of assessment for the LTOs.

It is critical that the roles and responsibilities of members of the field team are clear from the outset of the mission, to ensure effective coordination and communication within the EOM. In the context of elections in which e-voting technologies are used, this means that there remain clear reporting structures for LTOs to minimize confusion about how and when data regarding the technologies will be collected and analyzed.

Time Frame of Observation

The observation of e-voting technologies requires that EOMs begin well in advance of election day. Generally, Carter Center missions arrive in a country four to six months before an election. Where e-voting will be used, it is critical that missions are established as early as possible. Where it is not possible to deploy a mission as early as required by the use of e-voting technologies, assessment teams may be deployed to the country at critical junctures in the pre-election process, and they will provide written reports that can be used by the EOM.

E-voting experts generally should arrive in the first wave of field office staff, helping to set up the office and host initial meetings with key stakeholders. Early arrival is critical, as many aspects of the e-voting process begin well in advance (often years) of election day. In particular, specialized staff should be on the ground before the review of the system's source code occurs and should be present for as much of the pre-election testing process as possible.

Ideally, LTOs also will be deployed throughout the country by the time testing begins so that they can collect data and send it back to the e-voting expert and core team for review.

It is also critical that staff focused on the use of voting technologies remain in-country throughout the electoral dispute resolution process, or at least until any disputes related to the use of technology have been resolved. While assessing the electoral dispute resolution process also may be a key responsibility of the mission's legal analyst, knowledge of and familiarity with the e-voting expert's technology processes may be critical in deepening the team's understanding of the legitimacy of legal claims.

Resources and Observation Tools

In addition to the Baseline Survey for Observing Electronic Voting, there are a number of tools and resources that can assist in the collection and analysis of data on e-voting technologies. First and foremost among these is the Database of Obligations for Democratic Elections, which will help the e-voting experts and the rest of the core team understand the obligations to which the host country has committed regarding the use of e-voting.[5] As outlined in subsequent sections of this handbook, there are few international obligations or commitments specifically regarding the use of e-voting. However, those commitments that do exist can help provide an understanding of international good practice with regard to the introduction and use of e-voting technologies. In addition, a growing number of publications on e-voting technologies can provide guidance as necessary. A non-exhaustive bibliography of such resources is included in Appendix G of this handbook.

E-voting experts undoubtedly will refer heavily to the election laws of the host country and any rules and decrees or policies and procedures disseminated by the election management body (EMB). These resources are critical to the successful analysis of the system and should be collected as early as possible in the life of the mission.

Long-term election observers (LTOs) can serve as primary data collectors for the e-voting expert. E-voting technologies should be included as an area of assessment in the LTOs' weekly reporting templates, and the e-voting expert should work closely with the LTO coordinator to analyze and comment on the data collected by the LTOs. Areas of assessment for the LTOs can be drawn from the baseline survey, as well as from the e-voting experts' own experiences in the capital city. In addition, the e-voting expert and the LTO coordinator should work together to develop checklists for LTOs to use to collect quantitative data throughout the pre-election testing processes.

[5] http://www.cartercenter.org/des-search/des/

Training for Observers

The Carter Center selects observers with a wealth of experience and knowledge. However, in many cases these observers have not participated in a mission assessing voting technologies before or are not familiar with the particular type of technology employed in an observed state. This makes training for observers critical to the success of the mission. While not all observers will be expected to focus primarily on assessing voting technologies, it is a central part of the electoral process as a whole and one with which all observers must be familiar.

Long-Term Observers

At least a half day of the mission's LTO training should focus on issues related to the use of voting technologies. Long-term observers need not be familiar with all technological details of a system's internal components. However, they should understand:

- how the machines generally should work
- the schedule for testing the machines and what the tests will entail
- the safeguards in place to ensure the security of the system throughout the pre-election period
- when to ask the e-voting expert for more guidance on potential issues

Training for observers should include the following essential elements (supplemented by field staff for the particular exigencies of an observed country):

- the history of e-voting generally
- the purpose and impetus for using e-voting in the observed country
- the type of electoral technology used, identified strengths, and potential weaknesses
- what the technology looks like, including an overview of how to identify key security features such as key slots or transmission ports
- an overview of testing and auditing procedures that will be or have been observed by the mission
- the relationship between human rights and voting technologies, focusing on how the technology may impact fundamental rights relevant to the electoral process and how observers can identify and report on such issues
- identification and reporting of potential issues with the technology, including an overview of reporting questions and numbers to call if issues are identified

Short-Term Observers

Training for STOs should provide a basic understanding of the system in use, including the functionality of the voting technology and what security protocols they should expect to find in place at the polling station and tabulation centers. This "issue spotting" is particularly important at critical times in the day like poll opening and poll closing. To ensure observers internalize the lessons about voting technologies, it is best to have some sessions that focus only on the technology, while other sessions may integrate potential issues within a larger framework of the election day processes.

Role of the Long-Term Observer

While LTOs do not bear primary responsibility for the completion of the baseline survey, they do play a pivotal role in the collection of data regarding the preparation, testing, or auditing of voting technologies outside the capital city. The e-voting experts should work closely with the LTO coordinator to make sure that LTOs are collecting appropriate, accurate, and useful information regarding the use of the voting technologies and are effectively reporting on this aspect of the process in their weekly reports. The technology in use should not become an overwhelming preoccupation of the LTOs, who must continue to observe other aspects of the unfolding electoral process as well.

The ability of LTOs to effectively observe aspects of the adoption of voting technologies often hinges on the success of the training they receive upon arrival in country. Again, while it is not necessary for LTOs to be familiar with all technical aspects of internal data transmission or retention, they should be comfortable looking at, evaluating the functioning of, and communicating about the electoral technology in use.

In some cases it may be useful to recruit LTOs with a nontraditional skill set, such as a background in computer science, who may be paired with an LTO with a strong understanding of the electoral process and the host country. In such cases, the field office director, LTO coordinator, and e-voting expert should work closely with Atlanta staff to ensure that suitable LTO candidates are identified and recruited.

Role of the Short-Term Observer

STOs are deployed throughout the country one to three days before election day and are tasked with observing the process in 10–20 polling stations. These observers are given checklists that provide guidance on what to look for. The data from these checklists is then aggregated at the field office level and evaluated for patterns. Questions on the voting technologies in use should be just one aspect of the process observed during voting, counting, and results aggregation. By completing the checklists, STOs contribute significantly to the development of an assessment of the technology in use.

Working closely with the LTO coordinator and other key staff, the e-voting expert should provide input on the questions to be included in the STO checklists. The e-voting experts may wish to provide special communication lines for observers to call if they note a problem with the electoral technology. This can be very helpful to STOs as they collect information in the time period immediate to election day.

INTERNATIONAL OBLIGATIONS REGARDING THE INTRODUCTION AND USE OF ELECTRONIC VOTING TECHNOLOGIES

3

E-voting technologies must be understood and assessed as part of the larger electoral process in which they are being used. Regardless of technologies used, the electoral process should be conducted in accordance with the obligations to which the state has voluntarily committed through the accession, signature, or ratification of treaties and other international commitments. Therefore, the obligations for genuine democratic elections that apply to traditional paper-based elections also apply to those in which e-voting technologies are used. In the context of e-voting, a number of obligations are particularly relevant, including assuring the rights to vote, to be elected, and to participate in public affairs and the secrecy of the ballot.[6] The introduction and use of technologies that undermine these fundamental rights cannot be said to fulfill international obligations for democratic elections.

While the obligations regarding democratic elections are relevant to elections in which electronic technologies are used, there remains a paucity of obligations specific to the introduction and use of e-voting technology. At the regional level, the Council of Europe leads the way in identifying emerging norms regarding the introduction and use of e-voting technologies.[7] The Council of Europe's 2004 Recommendation on Legal, Operational, and Technical Standards for E-voting may be extrapolated to provide examples of international good practice in settings outside the Council of Europe member states.

In addition, a number of critical, overarching principles have been identified based on the collective experience of international election observation organizations that are relevant to the introduction of e-voting technologies regardless of the specificities of the system. These include:

1. inclusivity of the public and all stakeholders in the process of choosing and using the system
2. transparency in all aspects of the decision-making process with regard to the technology

[6] These obligations are referenced throughout the subsequent chapter on areas of assessment.

[7] The Council of Europe's (CoE) 2004 Recommendation on Legal, Operational, and Technical Standards for E-voting [Recommendation Rec(2004)11] sets nonbinding standards for its member states.

3. accountability for the impact of the technology on the integrity of the electoral process
4. accuracy and speed in the voting and vote counting process
5. sustainability and cost-effectiveness of the system based on the realities of the country in which it is being introduced
6. security of the system

These principles are outlined in *Observing Electronic Voting*, a document prepared for the Fifth Meeting on the Implementation of the Declaration of Principles for International Election Observation (Atlanta, Ga., October 2010), which may provide guidance to Carter Center EOMs observing e-voting technologies. This document distills the common experiences of endorsers of the Declaration of Principles (based on key publications of these organizations) into a short set of guiding principles. The full text of this document can be found in Appendix C.

SOURCES OF PUBLIC INTERNATIONAL LAW

This section of the handbook draws heavily from guidance on electoral processes found in public international law. To identify and determine assessment criteria for international obligations for democratic elections, four types of international human rights sources are referenced. These sources include:

- **Obligation (OB)** Obligations clearly codified in treaties
- **Interpretation (IN)** Interpretation of treaty obligations by treaty monitoring mechanisms (such as the Human Rights Committee) or international courts (such as the European Court of Human Rights)
- **Political Commitments (PC)** Nonbinding instruments such as declarations or other political commitments, which serve as evidence of state practice and customary law
- **Other sources (OS)** Handbooks, manuals, and other sources that can provide additional evidence of state practice (customary law) with regard to electoral processes

Every footnote reference includes a marker indicating whether the source document is an obligation, interpretative document, political commitment, or a source that can serve as evidence of state practice. The relative weight given in the source document by the EOM staff should correspond to this hierarchy. For more on how to use international obligations to assess elections, please refer to the Carter Center website.

Areas of Assessment

The Carter Center's Baseline Survey for Observing Electronic Voting focuses on eight main areas of assessment. These are: (1) the legal framework, including dispute resolution systems; (2) an overview of the technology in use; (3) voter education and public awareness of voting technologies; (4) election administration, vendors, and procurement of equipment; (5) security measures and contingency planning; (6) certification and pre-election testing; (7) election day procedures; and (8) vote counting and dispute resolution, including audit and recount procedures. In the following section of the handbook, we provide a more detailed overview of the obligations, principles, and good practices that can help to inform an assessment of these issues when using the baseline survey, recognizing that the checks and balances and systems that are put in place around the technologies are observable in many instances and can be as critical to the success of the electoral process as the functioning of the machines.

The following section serves as a supplement to other tools and resources available to the EOM, such as detailed terms of reference for staff and reporting templates, and therefore focuses solely on those issues related directly to the use of e-voting. Each section is categorized according to the constituent part of the election to which it is relevant for easier use with the Center's overall election observation methodology.

The Legal Framework

The legal framework should lay the foundation for the use of the e-voting technologies and for ensuring that fundamental human rights are fulfilled through their use. Early assessment of the laws and regulations governing an election helps observers identify potential problems, recognize inconsistencies between sources of law, and develop a sound understanding of the role of e-voting technologies in the electoral process. Completion of the legal framework section of the baseline survey should help the EOM understand those provisions of the law focused on the use of e-voting technologies. Key issues and considerations for EOMs related to the legal framework for e-voting are outlined below.

The legal framework for e-voting technologies should ensure adequate protection of human rights.

The legal framework for voting technologies should ensure adequate protection for all fundamental human rights. In the context of e-voting, systems should be designed with these obligations in mind and should provide safeguards to protect them from technical or other threats. Examples of such safeguards include: ensuring that the electronic ballot box is empty at the beginning of the voting day, implementing of audits throughout the

ASSESSMENT OF THE LEGAL FRAMEWORK

The legal framework should lay the foundation for the use of the e-voting technologies and for ensuring that fundamental human rights are fulfilled through their use. Early assessment of the laws and regulations governing an election helps observers identify potential problems, recognize inconsistencies between sources of law, and develop a sound understanding of the role of e-voting technologies in the electoral process.

The key activities, responsible team members, and outputs of an assessment of the legal framework for the use of e-voting are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- EOM's legal analyst

Materials Needed:

- Electoral law of observed country
- Laws pertaining to the adoption of voting technologies (if not codified in the electoral law)
- Relevant regulations and election commission directives

Principal Activities:

- Reading, reviewing, and developing an understanding of the legal framework for e-voting
- Completion of the Carter Center Legal Framework Gap Analysis
- Analyzing the law, looking for the law's positive aspects as well as its shortcomings and discrepancies

Key Outputs:

- Written analysis of the laws pertaining to the use of e-voting, using the baseline survey as a guide

process, and applying measures that prevent voters from casting more than one electronic ballot into the electronic ballot box.[8]

In particular, the rights to vote[9] by secret ballot, to be elected,[10] and to participate in public affairs should be protected, and special consideration

[8] PC: CoE Recommendation Rec(2004)11, adopted by the Committee of Ministers of the CoE on Sept. 30, 2004, and explanatory memorandum (CoE, Standards), art. 5

[9] OB: United Nations (UN), International Covenant on Civil and Political Rights (ICCPR) was adopted and opened for signature, ratification, and accession by General Assembly resolution 2200A (XXI) on Dec. 16, 1966, and entered into force March 23, 1976, art. 25(b). While not international obligations, various sources provide additional guidance requiring the right to vote be protected by ensuring electronic ballots are understandable and that they facilitate voting for persons with disabilities (i.e., CoE, Standards, arts. 9, 16, 18, and 19).

[10] OB: UN, ICCPR, art. 25(b)

should be given within the legal framework to the potential impact of e-voting technologies on these rights.[11] Further, the legal framework must guarantee that the use of voting technologies does not undermine equal suffrage and the ability of all persons to participate in elections free from discrimination.[12] At a procedural level, this will require measures that prevent a voter from casting multiple ballots[13] as well as efforts to ensure the participation of persons with disabilities, those who are illiterate or computer illiterate, or who otherwise may be unable to effectively use the chosen electoral technology.[14]

Where Internet or other remote voting procedures are used, provision should be made to allow voters the alternative of casting their ballots in a secure and controlled environment.[15] To the extent possible, steps should be taken to ensure the secrecy of the ballot in unsupervised environments.[16]

Carter Center EOMs should consider not only whether the legal framework provides for such rights but also whether it provides for audits and other procedures to ensure that rights are protected.

THE LEGAL FRAMEWORK SHOULD BE CLEAR AND CONSISTENT AND ANY CHANGES TO IT MADE WELL IN ADVANCE OF ELECTION DAY.

It is important that the legal framework be clear and consistent and that, where they exist, contradictory provisions of the law regarding e-voting be addressed.[17] In some cases, this may require that a new law be drafted. Any changes to the law should be finalized well in advance of the election.[18] There should also be clear and consistent guidance regarding the process of testing and certification of technology.

During a legal framework analysis, the Carter Center EOM should assess the degree to which the law is clear and consistent. Carter Center observers should consider how changes to the e-voting system are accommodated

[11] OB: UN, ICCPR, art. 25(a); CoE, Standards, arts. 5 and 9 (PC)

[12] OB: UN, ICCPR, art. 2(1)

[13] PC: CoE, Standards, art. 5

[14] OB: International Convention on the Protection and Promotion of the Rights and Dignity of Persons with Disabilities, G.A. Res. 61/106, Annex I, UN GAOR, 61st Sess., Supp. No. 49, at 65, UN Doc. A/61/49 (2006), entered into force May 3, 2008, art. 29(a)(i). This international obligation is equally applicable to voting systems employing voting technologies, as made explicit by CoE, Standards, para. A.I.3 (PC).

[15] PC: CoE, Standards, art. 4

[16] Internet voting often occurs in unsupervised environments, for example, in the privacy of the home.

[17] OS: Organization for Security and Cooperation in Europe/Office for Democratic Institutions and Human Rights (OSCE/ODIHR) Guidelines for Reviewing a Legal Framework for Elections (OSCE,Warsaw, 2001) (OSCE/ODIHR, Legal Framework), p. 5-6

[18] OB: Economic Community of West African States (ECOWAS), Protocol A/SP1/12/01 on Democracy and Good Governance (DGG), supplementary to the Protocol Relating to the Mechanism for Conflict Prevention, Management, Resolution, Peacekeeping, and Security in Dakar 2001 (ECOWAS, Protocol on DGG), art. 2

in law and in other procedures, such as the testing and certification of equipment. Overall, Carter Center observers should assess the degree to which legal provisions regarding certification, tests, and audits create a meaningful accountability mechanism.

THE ROLE OF KEY STAKEHOLDERS IN THE PROCESS SHOULD BE MADE CLEAR WITHIN THE LEGAL FRAMEWORK.

The use of e-voting technologies can introduce a number of new stakeholders to the election process or may increase the significance of the role of traditional stakeholders. For example, technology vendors can play a more important role in electronically enabled elections. Civil society and political parties have a critical role to play in all electoral processes.[19] In the context of elections that use e-voting technologies, the importance of this role is amplified since the transparency of the process is often decreased by the introduction of e-voting technologies. The roles of all such stakeholders should be clearly outlined in law.

Observers should evaluate the roles and responsibilities of these actors—both traditional stakeholders such as election management bodies and nontraditional stakeholders such as certification bodies, vendors, and contractors—as outlined by law and focus specifically on their legally enforceable accountability. Carter Center observers should consider the degree of access granted by the legal framework to domestic observer groups, candidates, and political party agents (in addition to members of international observation delegations) in all aspects of the electoral process, including the testing and auditing of technologies.

THE LEGAL FRAMEWORK SHOULD DETERMINE THE LEGAL RELATIONSHIP BETWEEN ELECTRONIC AND PAPER BALLOTS AND ACTIONS TO BE TAKEN IN CASES OF DISCREPANCY BETWEEN THEM.

A voter verified paper audit trail (VVPAT) allows a voter to cast a ballot electronically and then verify that the machine has accurately recorded the vote by checking a paper ballot that captures the voter's choice. This paper receipt or ballot should then be placed in a secure ballot box that protects the secrecy of the ballot. The use of VVPATs and mandatory audits of those paper vote records are the most effective way of ensuring that the vote is counted as cast, and provision for such safeguards should be included in the electoral code. If the audits are conducted on the basis of a statistical sample of machines, the sampling method should be clear and be consistently applied, and sound statistical sampling practices should be followed produce meaningful results that can be extrapolated to the universe of machines in use.

[19] OB: UN, ICCPR, art. 25(b) (right to participate in public affairs)

The legal framework should determine the legal relationship between electronic and paper records, as well as what constitutes the legal record of the vote (the electronic ballot vs. a paper ballot). It should provide clear and consistent guidance on the steps to be taken in the event that the verification processes find discrepancies or anomalies between election results and other records of the vote.

A Carter Center mission should have as clear as possible an understanding of the relationship between the electronic and paper ballots and the potential impact this will have on audits, recounts, complaints, and appeals. For example, if the ballot or legal record is the electronic ballot only, then a recount of paper ballots may have far less meaning. In addition, observers should consider whether the framework provides for a system of checks and balances that promotes and strengthens electoral integrity when e-voting technologies are used.

The legal framework should include a clear electoral calendar, including those aspects related to e-voting.

The obligation to hold periodic elections[20] requires that a clear calendar for electoral activities be in place in advance of the election. The period of time in which voting can take place should be clearly established.[21] The electoral calendar should be coherent and allow enough time for each phase of the process to be fulfilled, including all pre-election tests, certification, and other processes.[22]

Observers should carefully assess the degree of impact the electoral calendar has on the implementation of the election. In addition, time should be allowed to effectively respond to the outcomes of these processes.

The legal framework should provide a mechanism for the implementation of effective remedies for violations of rights.

Genuine elections require effective electoral dispute resolution bodies that function in a timely and transparent manner, fostering public confidence.[23] Open and fair dispute resolution processes that provide effective remedy for rights violations resulting from the use of the technology should be in place. The law should protect the right of access to information by stipulating that counting procedures should be verifiable and that votes must be preserved for review in case of complaints.[24] There must be the possibility of a recount,

[20] OB: UN, ICCPR, art. 25(b)

[21] PC: CoE, Standards, art. 37

[22] PC: CoE, Standards, art. 36

[23] OB: UN, ICCPR, art. 2(3); Human Rights Committee, General Comment no. 32, art. 14: right to equality before courts and tribunals and to a fair trial, UN Doc. CCPR/C/GC/32 (2007), para. 18 (IN)

[24] PC: CoE, Standards, arts. 26 and 98

and the e-voting system should not prevent the partial or complete rerun of an election.[25]

Arrangements should be made to hear petitions related to the announcement of results,[26] and it is good practice for the law to provide for the right to challenge election results.[27] Fair rules should:

- provide clear grounds upon which complaints and appeals are allowable[28]
- define and govern the right to demand a recount[29]
- provide an opportunity to challenge and invalidate all or part of the election results[30]

An assessment of the legal framework should closely review provisions regarding electoral disputes. Consideration may be given to what bodies are vested with the ability to hear disputes, the deadlines for filing and resolution of disputes, and who has standing before these tribunals. In particular, a Carter Center EOM should assess whether the dispute resolution process as outlined by law can adequately address issues related to the use of new technologies.

Voting Operations: Technology Overview

The details of the e-voting system and its method of introduction can greatly impact on the exercise of fundamental rights and freedoms during the electoral process. Completion of the Technology Overview section of the baseline survey should provide observers with a basic understanding of the functionalities of the system.

E-voting should be introduced gradually after a process of public debate.

E-voting technologies should be introduced gradually, with thorough public consideration of the risks, legal implications, and technical issues. Such debate can promote greater voter confidence in the system chosen and helps to support transparent decision-making processes.[31]

E-voting technologies should support and not undermine fundamental rights and obligations for democratic elections, in particular the rights to vote and

[25] PC: CoE, Standards, arts. 26 and 27

[26] OB: ECOWAS, Protocol on DGG, art. 7

[27] PC: Southern Africa Development Community (SADC) Principles and Guidelines Governing Democratic Elections, adopted by the SADC Summit, Mauritius, August 2004 (SADC, Principles and Guidelines), para. 2.1.10

[28] OS: OSCE/ODIHR, Legal Framework, p. 36

[29] OS: CoE, Handbook for Observers of Elections (CoE, Strasbourg, 1992) (CoE, Handbook), para. 4.8

[30] PC: SADC, Principles and Guidelines, para. 2.1.10

[31] OS: S. Caarls, CoE, E-voting Handbook: Key Steps in Implementing E-enabled Elections, (Caarls, E-voting Handbook), p. 14

ASSESSMENT OF THE TECHNOLOGY IN USE

The details of the e-voting system and its method of introduction can greatly impact the exercise of fundamental rights and freedoms during the electoral process.

The key activities, responsible team members, and outputs of an assessment of the e-voting technology are summarized below.

***

Responsible EOM Staff:

- E-voting experts

Materials Needed:

- Specifications of the technologies
- Rules and regulations from the election commission

Principal Activities:

- Reviewing specifications of the technology and analyzing them against the legal guidelines and stated objectives for the technology as well as international obligations and good practice
- Completing the technology overview section of the baseline survey

Key Outputs:

- Analysis of the e-voting system in use, guided by the baseline survey

be elected, the right to participate in public affairs, and the right to a secret ballot. Voting systems should be usable, and steps should be taken to ensure that the relevant software and services can be used by all voters.[32] If necessary, alternative means of voting should be provided.[33]

It is critical that election observation missions understand how and why the technology was introduced and how the system works. Through interviews and other means, Carter Center observers should assess the process through which the technology was introduced, including the degree to which the process was inclusive, transparent, and open to public scrutiny.

E-VOTING SYSTEMS SHOULD FUNCTION CORRECTLY AND RESIST MALFUNCTIONS.

To protect the right to vote, it is essential that e-voting technologies meet a number of general criteria. Specifically, e-voting systems should contain measures to prevent and resist malfunction, breakdowns, and denial-of-service attacks.[34] In addition, the system should ensure that its components

[32] PC: CoE, Standards, art. 1

[33] PC: CoE, Standards, arts. 61 and 63

[34] PC: CoE, Standards, art. 30

operate in accordance with specifications and that the various components of the system interoperate.[35]

To the degree possible, Carter Center EOMs should assess whether the system could work as planned on election day given the specifications and guidelines provided. Short-term observers can gather data to assist in this assessment.

The e-voting system should include access controls.

The e-voting system should regulate access to itself, requiring authentication of users before actions can be carried out and protecting authentication data so that the possibility of interference is diminished.[36] It is important that the e-voting system prevent manipulative influence over the voter during voting.[37]

In addition to understanding the checks and balances in place to ensure that access to the technology is controlled, Carter Center observers should note during pre-election tests and on election day whether the technology appears to control unauthorized access.

Ballots should be designed to optimize the voting options for voters.

The construction of electronic ballots is generally based on the creation of complex databases. The nature of this process introduces a high possibility of human error. Ballots should be consistent in layout and design with any paper ballots used. In general, ballots should:

- be understandable[38]
- account for levels of literacy[39]
- be available in the principal languages in multilingual societies[40]
- be identical in all languages[41]

The e-voting system should also ensure that voters are eligible to cast a ballot secretly and that, having voted, their choice is accurately recorded and saved in the electronic ballot box.[42] To protect equal suffrage, the system should

[35] PC: CoE, Standards, arts. 79 and 66

[36] PC: CoE, Standards, arts. 80 and 81

[37] PC: CoE, Standards, art. 12

[38] PC: CoE Standards, para. A.I.1

[39] OS: OSCE/ODIHR Election Observation Handbook, Fifth Edition (OSCE, Warsaw, 2005) (OSCE/ODIHR, Handbook, 5th Ed), p. 43

[40] OS: OSCE/ODIHR, Handbook, 5th Ed, p. 43

[41] OS: United Nations Human Rights and Elections: A Handbook on the Legal, Technical, and Human Rights Aspects of Elections (United Nations Center for Human Rights, New York, 1994) (UN, Human Rights and Elections), para. 110

[42] PC: CoE, Standards, art. 5

provide safeguards to ensure that only the appropriate number of votes are cast per voter and that voters can cast only one ballot via one voting channel.[43]

Voting systems should offer an authentic ballot to voters to ensure that their votes are accurately represented,[44] and voters should be able to alter their choice before casting their ballot, for example, if they have mistakenly pressed the wrong button.[45] Additionally, voters should be able to cast a blank ballot,[46] and the voting system should indicate clearly to the voter when their ballot has been cast and should prevent them from changing their vote once they have voted.[47]

Voter Education: Public Awareness and Confidence and Accessibility of Voting Technologies

Voter education campaigns and other efforts to increase public knowledge of and information about new technologies are critical to the exercise of fundamental rights and the success of the electoral process. Assessment of voter education campaigns and the degree of public awareness about the technology can help EOMs gain a more robust understanding of the kinds of nontechnical issues that can quickly undermine an e-voting system. Completion of the Voter Education sections of the baseline survey will provide observers a greater understanding of several issues, including: (1) the process of training and education for voters, political party agents, domestic observers, and civil society organizations; (2) the extent of the public's familiarity and comfort in using the system; and (3) the tone and content of public debate and discussion about the strengths and weaknesses of the process.

VOTER EDUCATION CAMPAIGNS THAT ARE ACCESSIBLE TO ALL VOTERS SHOULD BE PROVIDED BY THE STATE.

Voter education campaigns are necessary to ensure an informed community is able to effectively exercise its right to vote.[48] Voter education should be accessible to all voters, including those with special needs.[49] In the context of elections that utilize e-voting technologies, it is important that states take steps

[43] PC: CoE, Standards, art. 6

[44] PC: CoE, Standards, art. 90. As outlined in para. 155 of the explanatory memo on the recommendation, there is a possibility that fraudulent ballots may be introduced through Trojan horses, tampering with the domain system, etc., or through the use of fraudulent ballot papers that fade over time or become impossible for an electronic ballot reader to process and count.

[45] PC: CoE, Standards, art. 11

[46] PC: CoE, Standards, art. 13

[47] PC: CoE, Standards, arts. 14 and 15

[48] IN: UN Human Rights Committee (UNHRC), General Comment 25 on participation in public affairs and the right to vote, UN Doc. CCPR/C/21/Rev.1/Add.7 (1996) (UNHRC, General Comment 25), para. 11

[49] OS : C.W. Dundas, *Dimensions of Free and Fair Elections: Frameworks, Integrity, Transparency, Attributes, Monitoring* (Commonwealth Secretariat, London, 1994) (Dundas, Dimensions) p. 20

ASSESSMENT OF VOTER EDUCATION AND ACCESSIBILITY

Voter education campaigns and other efforts to increase public knowledge of and information about new technologies are critical to the exercise of fundamental rights and the success of the electoral process. Assessment of voter education campaigns and the degree of public awareness about the technology can help EOMs gain a more robust understanding of the kinds of nontechnical issues that can quickly undermine an e-voting system.

The key activities, responsible team members, and outputs of an assessment of voter education and the accessibility of the e-voting technologies are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- LTOs deployed in their relevant areas of responsibility (under direction of relevant field staff and e-voting specialists)

Materials Needed:

- Voter education materials related to the adoption and use of voting technologies (as available)
- EMB plans for the provision of information throughout the electoral process
- Publicly available information on the system in use (e.g., websites, the media)

Principal Activities:

- Attending voter education, pre-election testing, and other public events aimed at familiarizing the public with voting technologies
- Reviewing electoral education materials for completeness and effectiveness at familiarizing the public with voting technologies
- Conducting interviews with all stakeholders to gain an understanding of voter education efforts, accessibility to the public of information about the voting technologies in use, and overall comfort with the adoption and use of these technologies

Key Outputs:

- Written evaluation of the effectiveness and comprehensive nature of voter education efforts, focused on the adoption of voting technologies, in all relevant regions of the country (assisted by LTOs) and analysis of the public's understanding and familiarity with the voting technologies in use, including recommendations for improvement and identification of key weaknesses (as appropriate), all guided by the baseline survey

to ensure that voters understand and have confidence in the e-voting system in use[50] and know that their ballot will be secure and their vote will remain secret.

Carter Center EOMs often assess whether voter education is provided by the state. In the context of elections in which e-voting technologies are used, the EOM should consider whether information specific to the system in use is widely available to voters, the degree to which education campaigns are responsive to the needs of the electorate, and that necessary information is provided for voters to effectively interact with the technology.

Voters should have an opportunity to interact with the technology prior to the election.

Increased public awareness of and confidence in the use of voting technologies may be bolstered by increased familiarity with and increased access to the technology in the pre-election period. Voters should have an opportunity to interact with the technology prior to participating in the election.[51]

Carter Center observers should assess the extent to which the state provides such an opportunity to voters and observe what this opportunity entails. In particular, it should be noted whether these opportunities are afforded only to small subsets of the population.

Voters should be informed about the voting process in advance of election day.

Fostering the right of access to information (thereby increasing transparency) is an essential means of building public confidence in the e-voting system. In particular, voters should be informed in advance of the election about how the election will be organized, the software and equipment to be used, and how and when they can participate and vote.[52] In addition, information about the functioning of the system and the software used in the election or referendum should be made publicly available.[53]

Carter Center observers should assess the degree to which information regarding all elements of the e-voting system and its use is available to the public. This includes information about the components of the system, how they will interact with the equipment, and how the system functions.

[50] PC: CoE, Standards, art. 20

[51] PC: CoE, Standards, arts. 22 and 50

[52] PC: CoE, Standards, art. 38

[53] PC: CoE, Standards, arts. 21 and 69

Observers, candidates, and their agents should be able to provide an independent assessment of the technology.

Public confidence in electoral processes is also bolstered by the ability of observers, both domestic and international, and political parties to provide independent assessments of the use of the technology.[54] E-voting systems should therefore generate reliable and sufficiently detailed observation data so that election observation can be carried out.[55] The EMB should take active steps to train voters, political party agents, domestic observers, and others on the technologies, including how to use them and how to assess indications of possible technology failure.

Center observers should assess the degree of access granted to domestic observers and political party agents to the process and the system in use, as well as any measures taken to train these groups. This may include the degree to which meaningful access to software audits is given, their ability to observe on election day in polling stations and tabulation centers, and access to relevant data generated by the technology.

Information about the system should be available for voters throughout the election process.[56]

The provision of information about the electoral process is an important means of ensuring an informed electorate. Such steps can include the establishment of information desks or information hotlines that voters can call to ask questions about the process.

Throughout the process, Center observers should consider whether or not the state has taken steps to provide direct assistance to voters who may have questions regarding the e-voting system. In addition, Carter Center observers should assess the extent to which there is public debate about the use of e-voting technologies, the degree of stakeholder participation in the automation of the electoral process, and where possible, the steps taken to ensure that there is a high level of public comfort with the technologies in use.

Election Management: Administration of E-voting and Procurement of Technology

Electoral administration is central to the success of any election, with electoral administrators playing a critical role in interpreting the electoral law, implementing electoral procedures, educating the electorate, and ensuring the protection of suffrage rights for all citizens. In the context of elections in which e-voting technologies are used, other aspects of the EMB's work, such as procurement, take on added significance. Completion of the electoral

[54] PC: CoE, Standards, art. 23

[55] PC: CoE, Standards, art. 83

[56] PC: CoE, Standards, art. 46

ASSESSMENT OF ELECTION ADMINISTRATION

Electoral administration is central to the success of any election, with electoral administrators playing a critical role in interpreting the electoral law, implementing electoral procedures, educating the electorate, and ensuring the protection of suffrage rights for all citizens.

The key activities, responsible team members, and outputs of an assessment of the administration of e-enabled elections are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- Field office director
- LTOs and STOs

Materials Needed:

- Electoral calendar
- Election administration body regulations, directives, press releases, and other information regarding the process, and calendar for implementation of voting technologies

Principal Activities:

- Regularly meeting with the election administration body, particularly those staff tasked with implementing voting technologies, to assess the process of implementation and potential obstacles to success
- Reviewing the electoral calendar and the ability of the election administration body to meet implementation deadlines
- Directly observing the implementation of the electoral process

Key Outputs:

- Written evaluation of the ability of electoral administrators to implement voting technologies in a timely and effective manner, while ensuring the fulfillment of fundamental human rights relevant to elections, guided by the baseline survey

administration sections of the baseline survey should complement the Carter Center mission's understanding of the election administration structure, providing an overview of those institutions and their responsibility for the implementation of e-voting technologies.

ELECTION MANAGEMENT BODIES SHOULD ENSURE THE FULFILLMENT OF FUNDAMENTAL RIGHTS.

As an arm of the state, EMBs are responsible for taking necessary steps to ensure the fulfillment of fundamental human rights.[57] This obligation is no

[57] OB: UN, ICCPR, art. 2(2); African Union, African Charter on Human and People's Rights (AfCHPR) (adopted June 27, 1981, entered into force Oct. 21, 1986) (1982) 21 ILM 58 (Banjul Charter) (AfCHPR), art. 1 (OB); and American Convention on Human Rights (AmCHR) (adopted Nov. 22, 1969, entered into force July 28, 1978) OAS TS 36 (Pact of San Jose, Costa Rica) (AmCHR), art. 2 (OB)

less critical when considering adoption of voting technologies. Election administrators choosing to adopt voting technologies must ensure that such technologies protect—not hinder—the central obligations of genuine elections.[58] In particular, considerations of voter education[59] and the right of all citizens to vote[60] and have their vote counted accurately[61] are central to any choice to adopt voting technologies. Also of critical importance when employing new technologies is careful consideration of the electoral calendar, with special efforts taken to ensure adequate time is allotted for implementation, testing, and contingency planning.[62] Access to information is promoted through transparent electoral processes, including the meetings of the EMB.[63]

THE RESPONSIBILITIES OF ELECTION ADMINISTRATORS AND OTHERS SHOULD BE ESTABLISHED IN LAW.

The responsibilities of election administrators should be clearly defined in legislation. Typically, they include acquiring and distributing voting materials, goods, and supplies; contracting and training support personnel; coordinating and training other temporary electoral entities and political party poll watchers, according to the electoral legislation; and designating and installing the voting centers and polling stations. In elections employing e-voting technologies, EMBs bear the additional responsibility of implementing a new system of voting and managing the relationship with technology vendors.

Further, electoral administrators must balance budgetary concerns, institutional capacity, and the identified needs of the electorate in determining appropriate voting technologies. In order to effectively carry out their task in the context of e-voting, election administrators must have the necessary expertise to understand the technical aspects of e-voting.

It is, therefore, critical that EOMs assess the training programs for election officials as well as the role the officials play in adopting and implementing

[58] OB: UN, ICCPR, art. 25(b)

[59] IN: UNHRC, General Comment 25, para. 11

[60] OB: UN, ICCPR, art. 25(b)

[61] OB: UN, ICCPR, art. 25(b). The necessity of an accurate vote count is implicit in the international obligation that elections reflect the will of the people. Inaccuracies of omissions in the counting process clearly derogate from requirements that elections be genuine and offer voters a real choice. The applicability of this obligation to the process of e-voting has been explicitly recognized in CoE, Standards, art. 98. (PC)

[62] Internationally recognized best practice requires a state to ensure the electoral calendar is sufficient to allow for the successful implementation of all aspects of the voting process. See for example, *United Nations Human Rights and Elections: A Handbook on the Legal, Technical, and Human Rights Aspects of Elections* (United Nations Center for Human Rights, New York, 1994) para. 75 (OS); OSCE/ODIHR, Existing Commitments for Democratic Elections in OSCE Participating States, (OSCE, Warsaw, 2003) (OSCE/ODIHR, Existing Commitments), p. 54. (OS)

[63] OB: Commonwealth of Independent States (CIS), Convention on the Standards of Democratic Elections, Electoral Rights and Freedoms in the Commonwealth of Independent States (adopted Oct. 7, 2002, entered into force 2003) (CIS, Standards of Democratic Elections), arts. 7 and 13

voting technologies. This may require them not only to review the training program and other materials produced by the EMB but also to direct observation of poll worker training sessions.

Election management bodies should ensure the reliability and security of the e-voting system.

As an organ of the state, the EMB bears responsibility for ensuring that the rights to vote and be elected as well as other rights are fulfilled. In the context of e-voting technologies, this requires that they ensure the reliability and security of the system and take all steps necessary to avoid the possibility of fraud or unauthorized intervention with the system throughout the voting

ASSESSMENT OF TECHNOLOGY PROCUREMENT

In the context of elections in which e-voting technologies are used, other aspects of the EMB's work, such as procurement, take on added significance.

The key activities, responsible team members, and outputs of an assessment of the process of procuring e-voting technologies are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- Legal analyst

Materials Needed:

- Tendering and procurement contracts (as available)
- Announcements and press releases from the electoral commission as relevant to tendering and procurement
- Information concerning the history, institutional practices, and expertise of technology vendors

Principal Activities:

- Familiarization with the process of tendering and procurement, selection of voting technologies, and role of technology vendors
- Meetings with relevant members of the electoral commission and staff of technology vendors to evaluate the process of tender and procurement
- Evaluation of public knowledge and ability to access information about the process of procurement

Key Outputs:

- An overall analysis of the transparency, competitiveness, and credibility of the process of tender and procurement, including an evaluation of how chosen voting technologies respond to the stated needs of the electoral commission and country in the decision to adopt electoral technology

process.[64] In addition, electoral authorities have overall responsibility for compliance with these security requirements, which should be assessed by independent bodies.

Carter Center observers should assess the degree to which the EMBs have taken the steps necessary to ensure that the system is secure. This will include assessment of many aspects of the process, data about which will be collected via completion of other sections of the baseline survey (e.g., security, contingency planning, voter education.)

Criteria for procurement should be established well in advance of election day and should be based on the needs of the electorate.

The process of procuring voting technologies is critical to the successful implementation of an electronic system, impacting public confidence, accountability, and transparency. In the context of electoral processes that utilize e-voting, procurement can include hardware and software for electoral administration, voter registration, voting, counting, and tabulation.

E-voting technologies should be responsive to the needs of the electorate.[65] An open and competitive tendering and procurement process is crucial to ensure voting technologies are chosen for their utility and ability to meet the needs of the electorate, not private interests. Criteria for the selection of the technology should be clear well in advance of the election.

While observers often arrive after procurement is complete, consideration may still be given to the extent to which the process was open and transparent and followed recognized good practice in tendering.[66] Observers should also consider, for example, the reasons for the introduction and use of e-voting, potential advantages over the previous system, the method for choosing the system, and any previous legal challenges to use of the system as well as how technology vendors were selected and what roles and responsibilities the vendors may take on in election administration.

Access to information is a fundamental right.[67] In the context of e-voting, access to information regarding the procurement process is critical to ensuring

[64] PC: CoE, Standards, arts. 28, 29, and 85

[65] OSCE/ODIHR, Discussion Paper in Preparation of Guidelines for the Observation of Electronic Voting, October 2008, p. 7

[66] There is no direct obligation for transparency recognized in public international law relevant to elections. However, obligations related to access to information, the prevention of corruption, and the right for all persons to participate in public affairs may be extended to form a foundation upon which obligations of transparency and credibility in electoral management may be based. These obligations are found in relevant international treaties, including the ICCPR and the UN Convention Against Corruption (UNCAC), as well as regional treaties and political commitments from the African, American, and European regions.

[67] OB: UN, ICCPR, art 19(2); UNCAC, art. 9 (requiring transparency in procurement processes)

ASSESSMENT OF SECURITY AND CONTINGENCY PLANNING

Just as important as technical security and security of data are the physical security measures put in place to prevent interference with the voting equipment. In addition, it is essential that plans be in place in the event of technical failure.

The key activities, responsible team members, and outputs of an assessment of the security and contingency planning for the e-voting system are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- LTOs

Materials Needed:

- EMB regulations and other information regarding the security of the system and contingency planning
- Poll worker training materials

Principal Activities:

- Direct observation of poll worker trainings
- Review of relevant documents, materials, and procedures to determine whether security and contingency plans are adequate
- Interviews with EMB representatives

Key Outputs:

- Completion of the relevant sections of the baseline survey, including analysis of the security and contingency plans for the election

that citizens can hold their EMBs accountable. Observers should consider whether key documents and contracts relevant to the procurement process are publicly available.

Voting Operations: Security Measures and Contingency Planning

Just as important as technical security and security of data are the physical security measures put in place to prevent interference with the voting equipment. In addition, it is essential that plans be in place in the event of technical failure. The Carter Center baseline survey thus allows observers to collect information on the processes and procedures that are in place to regulate physical access to all e-voting equipment and the central tabulating computers as well as on the degree to which contingency plans and procedures are clear to election officials, that they are implemented

throughout the electoral process, and that they are adequate to protect the rights of voters.[68]

The election authorities should ensure that the technology operates correctly.

The ultimate aim of any security system should be to guarantee that all citizens who are entitled to vote can do so by secret ballot and that after the close of the election their vote is counted accurately. For example, votes and voter information should be stored safely as long as the data is held in a manner that they can be associated with each other.[69] Responsibility for the security and reliability of technologies ultimately lies with the election authorities of the state,[70] who should satisfy themselves that the e-voting system is "genuine and operates correctly" and should take steps to prevent unauthorized access or intervention that affects the technology.[71] The equipment should be checked and approved prior to each election to ensure that it complies with technical specifications.[72]

Observers should consider the degree to which the state has taken the necessary steps to ensure the security of the system. Because of the opaque nature of many e-voting systems, Carter Center EOMs may have to rely more heavily on the procedural checks that are put in place to ensure correct functioning of the technology.

EMBs should take steps to prevent unauthorized interference with the technology.

As in a paper-based election, the physical security of election materials is an essential measure for protecting the integrity of the process. EMBs should have clear processes and procedures in place to regulate physical access to the equipment, document such access, and prevent tampering with the machines.[73] Included in these processes should be mechanisms that allow for any tampering to be evident (such as seals over data ports) and clear regulations outlining procedures to be followed if any unauthorized tampering is discovered. Voting materials and any data retained after the election must remain secure throughout the process, including during transportation.[74] E-voting technologies also require that technical security precautions be taken.

[68] PC: CoE Standards, art. 28

[69] PC: CoE, Standards, art. 35

[70] PC: CoE, Standards, art. 28

[71] PC: CoE Standards, arts. 31 and 29

[72] PC: CoE Standards, art. 72

[73] PC: CoE Standards, art. 32

[74] PC: CoE, Standards, art. 75

For example, firewalls must be set up, vote information must be encrypted and decrypted, and cyber attacks must be countered.

It is thus important that a robust security system be in place at all levels. To the degree possible, Carter Center observers should gain an understanding of all the technical security procedures in place. It is important that an EOM understand the chain of custody and physical security procedures in order to assess whether they can effectively prevent unauthorized interference with the technologies.[75]

THERE SHOULD BE A CONTINGENCY PLAN IN CASE OF TECHNOLOGICAL FAILURE, AND POLL WORKERS SHOULD BE TRAINED ON HOW TO IMPLEMENT THIS PLAN.

The preparation and dissemination of a carefully constructed contingency plan are critical to the success of an electronic election, even if it is never used. In order to ensure adequate protection for the electorate's suffrage rights, EMBs should have clear and consistent rules in place in case of machine failure. The plans should be designed to ensure that voting processes may promptly continue, either electronically or manually, in a manner that neither infringes upon equality or universality of suffrage nor impedes ballot secrecy and that no polling data is lost due to technical failure.[76] Further, contingency plans should clearly establish the process of allocating replacement technologies and provisions for their appropriate testing and certification so that they conform to the same standards and requirements as the original system.[77]

Any process for managing a contingency plan should involve a risk analysis in order to predict those events that could cause an interruption of e-voting as well as their probable impact on information security. The contingency plan should be clearly communicated to all poll workers and technicians as well as observers and party agents, and poll workers should receive training on it and be prepared to respond rapidly according to established procedures.[78] Where incidents that could threaten the integrity of the system do occur, poll workers should immediately inform the EMB, whose responsibility it is to mitigate the effects of the incident.[79]

A Carter Center EOM should assess whether the contingency plan is adequate for responding to a spectrum of potential technological failures, whether it would allow voters to continue to vote and exercise their franchise rights, and whether poll workers receive training in the plan. In addition to reviewing the legal framework and polling procedures, STOs might directly observe instances in which the contingency plan is put to use.

[75] PC: CoE, Standards, art. 33

[76] OB: UN, ICCPR, art. 25(b); CoE, Standards, arts. 75 and 77

[77] PC: CoE, Standards, art. 70

[78] PC: CoE, Standards, art. 71

[79] PC: CoE, Standards, art. 76

Voting Operations: Certification and Pre-election Testing

Certification and testing of e-voting technologies in the pre-election period provide an important means of identifying and addressing issues in advance of election day, thereby protecting the rights of the voters and candidates to participate in a genuine election. Completion of the relevant sections of the baseline survey should provide an EOM with an overview of the certification and pre-election testing procedures in place.

ASSESSMENT OF CERTIFICATION AND TESTING

Certification and testing of e-voting technologies in the pre-election period provide an important means of identifying and addressing issues in advance of election day, thereby protecting the rights of the voters and candidates to participate in a genuine election.

The key activities, responsible team members, and outputs of an assessment of the certification and testing of the technology are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- LTOs

Materials Needed:

- Certification guidelines
- Results of the certification process
- Information regarding the certification agencies and their methods
- Testing plans and procedures
- Poll worker manuals

Principal Activities:

- Direct observation of testing processes as well as certification processes (where possible)
- Review of relevant documents to determine whether security and contingency plans are adequate
- Interviews with key informants

Key Outputs:

- Completion of the relevant sections of the baseline survey, including analysis of the transparency and effectiveness of the certification and testing process.

States should engage in comprehensive processes of impartial, independent, and transparent certification as well as open pre-election testing.

Any deviations or malfunctioning by such technologies has the potential to undermine the quality of an election, impacting the accuracy of vote tabulation and equality of suffrage.[80] To negate the potential of such effects, states employing e-voting technology must engage in comprehensive processes of certification and pre-election testing. The purpose of certification is to verify independently, at the outset of the electoral process, that an e-voting system complies with all the specifications and requirements for the technology. Certification applies to hardware and software. Impartial, independent, and transparent certification measures should be in place to ensure that the system meets national or international standards, the requirements of the election jurisdiction, and the technological specifications outlined by the vendor.[81]

Observers should consider the process for inspecting and certifying the software used in e-voting systems, with particular focus on the independence of the certifying body and its relationship with other stakeholders in the process as well as the access to the certification process granted to domestic observers, candidates and their agents, and others.[82] The certification process may well be complete before the start of the EOM; however, analysis of data and interviews with key interlocutors and others may shed light on the certification process.

E-voting technologies should be tested prior to election day, and there should be adequate time after the tests to rectify any issues that arise.

In addition to certification, another important part of the preparation for an e-enabled election is testing the software, hardware, and administrative processes prior to the deployment of voting machines on election day. The type of testing needed will depend on the specifics of the e-voting system but should help ensure that the machines work as anticipated. During the testing phase, potential voters should be invited to test the system as it would be used in the real election.[83] There should be adequate time after tests to rectify any problems that may be identified in the testing process.

Carter Center observers may be able to observe several of the pre-election tests that take place prior to the election. In particular, observers should note the conditions under which the tests occur, who is involved in the testing process, what tests are required, and what they include.

[80] OB: UN, ICCPR, art. 25(b)

[81] PC: CoE, Standards, arts. 24, 25, 31, and 73

[82] See footnote 84 regarding the importance of transparency and openness before and during electoral processes.

[83] PC: CoE, Standards, art. 62

Observers and candidates and their agents should have access to certification and testing processes.

Because observers (both domestic and international) and candidates and their agents should have unimpeded access to all stages of the e-voting process, except those that would violate the secrecy of the vote, domestic and international observers should have adequate access to various phases of the certification and testing processes. Accordingly, these should be conducted in an impartial and open manner, with access for domestic observers, political parties, civil society organizations, and the public as appropriate.[84] As in a

ASSESSMENT OF ELECTION DAY PROCEDURES

Detailed election day procedures that are easily understood and followed by polling station workers are necessary to ensure proper administration of an e-voting process. Such procedures must respond adequately to the needs of the electorate, including the ability to vote independently and by secret ballot, cast votes for or against any candidate, and seek resolution for election-related disputes.

The key activities, responsible team members, and outputs of an assessment of election day procedures are summarized below.

***

Responsible EOM Staff:

- E-voting experts

Materials Needed:

- Polling station training manuals, sample voting machines and materials, handbooks, and relevant directives

Principal Activities:

- Review of polling station training manuals, handbooks, directives, regulations and other information to gain an understanding of election day procedures

Key Outputs:

- Written analysis of election day procedures related to voting technologies, contingency planning, and staff training (prior to election day), based on the relevant baseline survey questions
- Creation of STO checklist questions relevant to procedures for the use of voting technologies during the election

[84] Transparency and openness during pre-election testing and certification can ensure the fulfillment of obligations to allow for access to information and the prevention of corruption in public decision making. Further, it is recognized best practice that domestic observers may enhance all aspects of the voting process, serving to increase public confidence and credibility. (OSCE, Copenhagen Document - Second Conference on the Human Dimension of the OSCE, para. 8)

traditional, paper-based election, the physical security of electronic election materials is an essential measure for protecting the integrity of the election.[85]

International EOMs should be mindful to not certify electronic election technologies and should make clear to the authorities of the host country and the EOM that such responsibilities are beyond the mandate of international election observers. The role of the observer is to provide an impartial assessment of the electoral process as a whole.

Voting Operations: Election Day Procedures

Detailed election day procedures that are easily understood and followed by polling station workers are necessary to ensure proper administration of an e-voting process. Such procedures must respond adequately to the needs of the electorate, including the ability to vote independently and by secret ballot,[86] cast votes for or against any candidate, and seek resolution for election-related disputes.[87] The Election Day Procedures section of the baseline survey is intended to give observers a sound understanding of how the process should unfold on polling day.

In particular, observers should consider whether polling stations are set up to protect the secrecy of the ballot[88] and whether voters can remove evidence of how they voted from the polling place as a means of participating in vote buying.[89] The obligations that are relevant to paper-based elections remain relevant in elections that utilize e-voting. Carter Center observers should ensure that they are using the wide array of tools and resources developed for missions to assess this aspect of the process.

Vote Counting and Dispute Resolution: Ballot Counting, Audit, and Recount Procedures

The accurate and fair counting of votes is critical to ensuring the electoral process is democratic. International and regional agreements recommend that votes be counted by an independent and impartial electoral management body, with a counting process that is public, transparent, and free of corruption.[90]

[85] There is a widely recognized need to ensure election materials are stored securely both before and during election day. This requirement is equally applicable to systems of e-voting. See, for example, EISA and Electoral Commission Forum of SADC Countries, Principles for Election Management, Monitoring, and Observation in the SADC Region, p. 25; European Union, Handbook (2d edition), p. 70; OSCE/ODIHR, Legal Framework, p. 25.

[86] OB: UN, ICCPR, art. 25(b); UNHRC, General Comment 25, para. 20 (IN)

[87] OB: UN, ICCPR, art. 2(3); AU, African Charter on Democracy, Elections, and Governance (ACDEG), art. 17(2) (OB); ECOWAS, Protocol on DGG, art. 7 (OB)

[88] OS: SADC Parliamentary Forum Norms and Standards for Elections in the SADC Region (March 25, 2001) (SADC Parliamentary Forum Plenary Assembly Windhoek, Namibia, 2001), para. 9

[89] PC: CoE, Standards, art. 52

[90] OB: UNCAC, art. 18; ACDEG, adopted May 2007, art.17(1) (PC); UNHRC General Comment 25, para. 20 (IN)

THE VOTING PROCESS SHOULD BE TRANSPARENT AND FREE OF CORRUPTION, AND SAFEGUARDS SHOULD BE IN PLACE TO ENSURE THE ACCURACY OF THE VOTE COUNT.

Voting technologies often are employed as a means of eliminating human error in vote counting and tabulation and increasing the efficiency of these processes. However, the potential advantages must be weighed against the decreased transparency inherent in counting and tabulation by non-observable software. Strong audit and recount systems are therefore critical when using e-voting technologies. These procedures can enhance public confidence in the results and ensure that the rights to vote and to be elected

ASSESSMENT OF BALLOT COUNTING, AUDIT, AND RECOUNT PROCEDURES

The accurate and fair counting of votes is critical to ensuring the electoral process is democratic. International and regional agreements recommend that votes be counted by an independent and impartial EMB, with a counting process that is public, transparent, and free of corruption.

The key activities, responsible team members, and outputs of an assessment of the legal framework for the use of e-voting are summarized below.

***

Responsible EOM Staff:

- E-voting experts
- Legal analyst

Materials Needed:

- Relevant electoral law and electoral administration body directives, regulations, and other information regarding the process for recounts and auditing procedures

Principal Activities:

- Review of election law and directives to gain an understanding of the process for auditing and recount procedures
- Meeting with vendors and electoral administrators to gain an understanding of the process of vote tabulation and transmission, with particular regard to system security and prevention of illegal access
- Direct observation of the counting and election audit procedures

Key Outputs:

- Evaluation of VVPAT, auditing, and recount procedures focused on assessing statistical significance and potential impact on electoral results; and analysis of the impact of recount and audits on electoral dispute resolution systems as defined by law, all guided by the baseline survey

and the obligation of equal suffrage are duly respected for all voters and candidates.[91]

Particularly important is that the safeguards ensure the accuracy of the vote count, regardless of the form of balloting or counting used (manual, mechanical, or electronic),[92] and protect fundamental rights and freedoms. In addition, the system for balloting (paper, electronic, or otherwise) should ensure the secrecy of a voter's choice,[93] equal suffrage, and that no opportunity exists to falsify or to substitute ballot papers.[94] Regarding vote counting, the closing time for voting must be unambiguous, particularly when different types of voting are involved. Ballot counting should start as soon as possible after the close of the polls.

Carter Center EOMs should ensure adequate coverage of the vote counting process. Prior to the election, observers should consider whether the process has the potential to undermine fundamental rights and supplement this assessment with direct observation.

RESULTS OF THE COUNT SHOULD BE PUBLISHED IN A TIMELY MANNER,[95] BE PUBLICLY ANNOUNCED, AND BE POSTED AT THE COUNTING STATION.[96]

Transparent and timely publication of results is essential to strengthening public confidence in the electoral process. If posted precinct-level results do not match final precinct results or when VVPAT counts do not match the vote count produced by the machine-specific procedures, these discrepancies should be clearly conveyed to all stakeholders. Counting procedures should be verifiable, and votes must be preserved for review to ensure necessary evidence is available in case of complaints.[97]

Candidates and party agents as well as representatives of the election authority should have access to the polling stations and vote counting. All party agents and accredited observers should be given copies of all protocols and tabulation sheets from results centers.[98]

[91] OB: UNCAC, art. 13(a)

[92] PC: CoE, Standards, arts. 7 and 98; International IDEA International Electoral Standards: Guidelines for Reviewing the Legal Framework of Elections (International IDEA, Stockholm, 2002), p. 78

[93] PC: CoE, Standards, arts. 17 and 35

[94] OS: Commonwealth Secretariat, Good Commonwealth Electoral Practice: A Working Document (June 1997) (Commonwealth Secretariat, London, 1997) (Commonwealth Secretariat, Good Practice), para. 35

[95] OS: EISA and Electoral Commissions Forum of SADC, PEMMO, p. 26

[96] OS: EISA and Electoral Commissions Forum of SADC, PEMMO, pp. 26 and 27

[97] PC: CoE, Standards, art. 98

[98] OS: Norwegian Helsinki Committee Election Observation: An Introduction to the Methodology and Organization (Norwegian Helsinki Committee, Oslo, 2000), p. 14

Data should be protected during the transmission of results.

Integrity of data transmission is also critically important in the postelection period. Ballot tallies must be transmitted to higher levels in an open manner.[99] Steps should be taken to effectively protect the transmission of data and prevent illegal access,[100] and the observation mission should assess the extent to which steps have been taken to protect the integrity of the data transmission.

Data transmission is difficult to observe; however, Carter Center EOMs should consider deploying a team of observers to tabulation centers if possible. Tabulation center observers may be able to coordinate with teams deployed at polling stations to verify whether results transmitted match polling-station-level results.

The e-voting system must be auditable.[101]

An audit trail needs to be established for all aspects of the systems used in the election so that all changes and decisions can be explained and defended.[102] It is also important that audit procedures be in place for every part of the e-voting process, including the electoral voter register (if used), voting, counting, archiving, and destruction of votes. The audit system should provide the ability to cross-check and verify the correct operation of the e-voting system and the accuracy of the result in order to detect voter fraud and to prove that all counted votes are authentic and that all votes have been counted.[103]

When a recount is necessary, the electoral process must allow for it.[104] It is crucial that any recounts be performed in the most transparent way possible. In addition, the grounds and procedures for a recount should be communicated to all stakeholders.

Accordingly, observers should consider the size, scope, and methods of conducting audits or recounts of any paper records of votes cast during the use of e-voting, as well as whether the results of the paper count can be used as the basis for a legal challenge to the election results.[105] Carter Center observers should also assess the degree to which third parties are able to conduct audits independent of those conducted by the host government.

[99] OS: CoE, Handbook for Observers of Elections, para. 4.6

[100] OB: UN, UNCAC, art. 18

[101] PC: CoE, Standards, art. 56 and 100

[102] PC: CoE, Standards, art. 103

[103] PC: CoE, Standards, art. 107

[104] PC: CoE, Standards, art. 26

[105] It is internationally recognized good practice that the right to challenge electoral results be provided for by law. See, for example: SADC, Principles and Guidelines, para. 2.1.10 (OS); OSCE/ODIHR, Legal Framework, p. 36 (OS); UN, Human Rights and Elections, para. 112.

USING THE BASELINE SURVEY FOR OBSERVING ELECTRONIC VOTING

4

The Baseline Survey for Observing Electronic Voting has been the product of significant collaboration between The Carter Center and a number of peer organizations, experts, and staff. Recognizing the inherently fluid nature of electoral environments and the constant evolution of technologies, the survey is a working document, which is intended to be adaptable to the needs and focus of election observers and practitioners globally. While questions will always remain regarding the use, impact, and future of voting technologies, the baseline survey is intended to provide a framework for enhancing the knowledge of election observers in a particular country context.

The baseline survey has been designed to allow observation missions to use it in a variety of contexts and for a range of voting technologies. In response to the evaluations of the first draft of the baseline survey (tested in Venezuela, the United States, and the Philippines), revisions have been made. The survey now includes overarching analytical issues that the EOM should assess. These are supplemented by a number of subquestions or issues to help guide the EOM in its response to the analytical questions. Not all of the subquestions will be applicable in every country or to every e-voting technology, but they are designed to provide enough specificity to create a good understanding of the voting technologies in use and other relevant issues.

The baseline survey is one tool among a larger set of resources and guides at the disposal of Carter Center EOMs, reflecting the fact that an assessment of voting technologies is only one aspect of a larger process of observation focused on the fulfillment of fundamental rights throughout the election. The use of technologies has the potential either to enhance or curb protections of such rights and must be considered carefully in the context of the election as a whole. The Carter Center intends this methodology to be incorporated into larger observation efforts focused on assessing elections against public international law obligations and the good practices outlined in the previous chapter.

Appendix A, which follows, includes the Baseline Survey for Observing Electronic Voting. Appendix B offers a selection of examples of election day checklists developed by The Carter Center for use in assessing voting technologies in Venezuela, the United States, and the Philippines. These checklists are necessarily bound by their specific country context and do not represent questions appropriate to all missions.

APPENDIX A: BASELINE SURVEY FOR OBSERVING ELECTRONIC VOTING

A

Baseline Survey — Electronic Voting Systems[106]

Instructions for Completion

This baseline survey is intended to help observers collect and process relevant data associated with the use of e-voting technologies in this election. The information gathered by answering these questions should create a comprehensive picture of the voting system and thus allow a more thorough evaluation of its use.

The baseline survey provides a series of overarching, analytical questions for the EOM to answer. In addition, a nonexhaustive list of subquestions or issues to consider also are included. While not all of these questions will be relevant to every election, they may provide the e-voting expert and others on the team with food for thought and additional guidance when answering the analytical questions.

Information should be gathered through review of appropriate legislation, decrees, bylaws and rules, interviews with election administration officials, technical and legal experts, representatives of political parties, and domestic observation and civil society organizations.

Any supporting documentation should be retained, including the elections law, certification procedures, technological standards against which the technology is measured, reports on past processes, and so forth. Please be sure to include details on how, where, and when the information was attained and, particularly in the case of interviews, the name, title, and affiliation of the source of the data. It is anticipated that this process will occur over a number of weeks in the months leading up to election day.

After collecting as much data as possible regarding the use of the e-voting system, a synopsis of your findings will be written. This synopsis will provide an overview of the system that can be used by other observers (long-term, medium-term, and short-term) as a point of reference for their observations. In addition, data collected will be used to formulate election day (and other) checklists to capture information on the actual functioning of the system.

[106] The Carter Center would like to acknowledge the work of Verified Voting (www.verifiedvoting.org), whose work informed the Center's methodology.

Carter Center's Assessment Methodology: A Human-Rights-Based Approach

The Carter Center assesses elections on the basis of human rights obligations, determined by the domestic and international commitments of a state and the international community as a whole. Therefore, the impact of technology on the electoral process and the enjoyment of fundamental rights is a central concern of the baseline survey. While this baseline survey focuses only on the aspects of the electoral process dealing with electoral technology, it is critical that observers understand and assess such technology against these human rights commitments. Voting technologies can be an important tool to help fulfill obligations. This is particularly true given their ability to make voting accessible to historically disenfranchised communities. However, malfunctions or misapplication of such technologies can undermine such critical obligations.

The Carter Center has identified 21 obligations based in public international law that are of critical importance to the electoral process:

1. **The free expression of the will of the people shall form the basis of government.** That the will of the people shall form the basis of the authority of government was first established in the Universal Declaration of Human Rights and subsequently made legally binding in art. 25 of the International Covenant on Civil and Political Rights (ICCPR).
2. **Genuine elections.** The holding of genuine elections is an essential obligation. It is generally understood to mean that the election offers voters a real choice and that a wide array of other fundamental rights have been fulfilled.
3. **Periodic elections.** The obligation to hold periodic elections as established in the ICCPR and other treaties and instruments is generally understood to mean that elections must take place at reasonable intervals.
4. **The state must take necessary steps to ensure realization of rights.** Public international law requires that the state take steps to ensure effective realization of the rights contained in the relevant international instruments.
5. **The rule of law.** Implicit in the international human rights treaties and instruments is the obligation of the state to abide by the rule of law. While not explicitly articulated as an obligation in the ICCPR, the rule of law is recognized as an essential condition for the fulfillment of human rights and representative democracy.
6. **Universal suffrage.** The obligation to hold elections by universal suffrage requires that the state take measures to ensure that the broadest pool of voters be allowed to cast their ballots.
7. **Equal suffrage.** Similar to universal suffrage, equal suffrage is a collective

right that requires that every voter be granted a vote of equal value to that of other voters.

8. **Secret ballot.** Voting must be by secret ballot; that is, the cast ballot cannot be identified with the voter who cast it. That secrecy must be maintained throughout the entire electoral process.
9. **Prevention of corruption.** While recent anticorruption instruments lay the foundations for transparency, they also obligate the state to regulate the behavior of public officials.[107]
10. **Every citizen has the right to vote.** While universal suffrage establishes a collective right to vote and be elected, the right of every citizen to vote is an individual right.
11. **Every citizen has the right to be elected.** Similar to the right to vote, the exercise of this individual, focused obligation is limited to citizens.
12. **Every citizen has the right to participate in public affairs.** This obligation protects the ability of citizens to participate in the public affairs of their country, for example, by joining civil society organizations or serving as a domestic observer.
13. **Freedom of association.** Freedom of association has been recognized as essential to democratic elections for some time. This right is particularly relevant in the context of political parties and campaign activities and includes the ability to freely establish political parties.
14. **Freedom of assembly.** Similar to freedom of association, freedom of assembly has been recognized as essential to democratic elections for many years.
15. **Freedom of movement.** Freedom of movement is an essential right during the electoral process, not only for political parties and their supporters but also for poll workers, domestic and international observers, and, of course, voters.
16. **Equality before the law and absence of discrimination.** Many treaties establish the right to equality before the law, while separately calling for absence of discrimination in the exercise of human rights and fundamental freedoms. The latter obligation is explicitly tied to the rights enshrined in art. 25 of the ICCPR but is also, in fact, applicable to all of the obligations in the ICCPR.
17. **Freedom of opinion and expression.** Everyone has the right to freedom of expression. Free communication of information and ideas between voters and candidates is essential during the electoral process and

[107] UNCAC, entered into force Dec. 14, 2005; Inter-American Convention Against Corruption (IACAC), entered into force March 6, 1997; African Union Convention on Preventing and Combating Corruption (AU-CPCC); SADC Protocol Against Corruption.

extends to the right to make monetary contributions to political candidates or parties.

18. **Access to information.** Closely related to the right to freedom of opinion and expression and the obligation of transparency is the right of access to information. Everyone has the right to seek and receive public information. In addition to being an important right in and of itself, it is also a critical means of ensuring transparency and accountability throughout the electoral process.
19. **Right to security of the person.** The right to security of the person includes not only protection from arbitrary arrest, detention, and exile but, in the context of the electoral process, also the protection of voters, candidates and their agents, poll workers, and domestic and international observers from interference, coercion, or intimidation.
20. **Right to a fair and public hearing.** Everyone has the right to a fair and public hearing in the determination of their rights in a lawsuit. This right includes the ability to have your case heard publicly and expeditiously by an impartial tribunal, to have equal access to the judicial proceedings, and equality of arms.
21. **Right to an effective remedy.** International law requires that an effective and timely remedy by a competent administrative, legislative, or judicial authority be available for all violations of human rights included in the instruments.

Guidance on internationally accepted good practices, specifically with regard to e-voting, can be found in the Carter Center Handbook on Observing Electronic Voting. In the tables that follow, criteria to aid evaluation of the e-voting system have been extracted.

Incorporation in and Use with Other Observation Tools

As election observers, Carter Center staff must seek to understand the role of voting technologies within the larger electoral framework, assessing how they impact and are impacted by the process as a whole. As such, this baseline survey must be understood as one tool that contributes to a larger assessment methodology. Other reporting tools commonly used by The Carter Center include weekly narrative reports prepared by LTOs, legal framework and gap analyses prepared by legal experts, and election day checklists completed by STOs. At times, assessments are also informed by the findings of high-level political meetings as well as through analysis of the media environment, complaints procedures, and political finance systems.

The baseline survey has been designed to correspond with these other reporting tools, focusing on a general set of subjects relevant to the assessment of elections regardless of the use of technology (e.g., accessibility and voting operations). Upon completion, this survey should be used in light of other reports and findings to develop an overall picture of the electoral process.

Legal Framework

Please prepare a written analysis of the laws, with a focus on their impact on voting technologies. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance. Please note that Analytical Questions regarding the legal framework AND other parts of the survey can be found in this section.

Summary Criteria for Assessment

- The legal framework for e-voting technologies should ensure adequate protection of human rights. In particular, special consideration should be given within the legal framework of the impact of e-voting technologies on the rights to vote by secret ballot, to be elected, and to participate in public affairs.
- Systems should be designed to protect human rights from technical or other threats.
- The legal framework should be clear and consistent and any changes to the law made well in advance of election day.
- The role of key stakeholders in the process should be made clear within the legal framework.
- Observers, both domestic and international, should be granted access to the process by law, including e-voting technologies.
- The legal framework should determine the legal relationship between electronic and paper voting records as well as procedures to be followed in cases of discrepancy between them.
- The legal framework should include a clear calendar for the elections, including those aspects related to e-voting.

Analytical Questions	Issues to Consider
1. How does the legal framework for e-voting protect fundamental human rights and support obligations for democratic elections?	• Does the law (legislation and/or subsequent decisions, decrees, and regulations) require that appropriate technical steps be taken to ensure that the secrecy of the vote is guaranteed (e.g., measures to ensure that the voting sequence cannot be reconstructed or that the votes cast cannot be tied to a specific voter)? • Does the law include safeguards to protect fundamental rights from technical or other threats, such as showing the electronic ballot box to be empty at the beginning of the voting day? • Does the law (legislation and/or subsequent decisions, decrees, and regulations) provide guidance on how voter intent is to be determined by poll workers? • Do electoral offense provisions of the electoral law apply to the new technologies in use? • Does the law make special provisions for complaints and remedial actions based on the use of e-voting technologies? • Does the e-voting technology protect the rights of persons with disabilities? • Do voters in the following circumstances use e-voting technologies to cast their ballots? – Confined to a hospital – Confined to their home – In prison – Unable to get to a polling place – Outside their electoral district on election day • If voters in the circumstances described in the question above use e-voting technologies to cast their ballots, does this equipment undergo the same testing as the equipment deployed to polling places?

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2. Is the legal framework clear and consistent regarding the use of e-voting technologies?	• Is the use of e-voting technologies anticipated in the current electoral legislation, or has it been introduced via subsequent decree, regulations, or other ad hoc measures? • Does the legal framework prescribe the type of e-voting technology to be used? • Does the law state any outlined objectives for the introduction of the technology? • Has the law been fairly stable or subject to change in the last 12 months? If so, what changes have been made to the law? • What laws, rules, and regulations include provisions related to the use of e-voting technologies?
3. What are the key stakeholders related to the use of e-voting in this electoral process? What are their respective roles according to the law?	• Does the law outline the roles and responsibilities of public authorities, independent bodies, and vendors relating to the implementation of the e-voting system? • Does the electoral management body act in complete independence from other bodies? • Does the law require or provide for either or both a (i) technical subcommittee within the electoral commission or (ii) an outside technical advisory body for the EMB to consult? • Does the law provide a framework for contractual obligations between the state and the vendor or the independent certification bodies that is unique from standard contract law? • Are there any terms of the vendor agreement that violate the national laws or regulations governing elections?
4. Does the law allow independent, third party inspection of the system and observation by domestic and international observers and candidates, parties, and their agents?	• Does the law (legislation and/or subsequent decisions, decrees, and regulations) allow independent inspection of the software? Please provide further details, including any pertinent reports that might be available. • Does the law (legislation and/or subsequent decisions, decrees, and regulations) provide for security and/or transparency promotion measures, such as the use of an independent certification body and/or pre-election and postelection audits that are open to party agents and observers? • Does access of party agents and observers to the audit process appear adequate? • Does the law allow independent inspection of the software by civil society or other actors outside of the official auditor and the EMB? If so, does the law state when and how the software is available for review?

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5. Does the law require a VVPAT, and what is the legal relationship of this record to other records of the vote?	• Is a VVPAT required by law? • If the machines produce aVVPAT, does the paper ballot appear in such a format that it is clear to illiterate or disabled voters that their vote has been correctly cast? • What is the ballot of record, according to law? • According to the law (legislation and/or subsequent decisions, decrees, and regulations), what procedures are in place if there is a discrepancy between the paper ballot count and the electronic tally? Which vote record takes precedence? • Is a postelection audit part of established procedures? Does the law stipulate the sample size for the audit and how the sample is selected? • Does the law stipulate what triggers a recount? Consider the following: – Voter application – Candidate application – Narrow margin of victory – Automatic random recount – None of the above – Other
6. Please describe the electoral calendar, including those aspects related to e-voting.	• Does the electoral calendar allow enough time for all aspects of the process, including pre-election testing, certification, voter education, etc., to be completed and any necessary changes to the system to be made? • Does the law state the process and deadline for the certification of results?

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7. What tests or certification of the system is legally required?	• Is certification of the voting technology required by law? • Does the law require that acceptance testing take place? • Does the law require that pre-election testing take place? • Who is responsible for pre-election testing, and does the law require that tests be conducted by an independent body? • Does the law (legislation and/or subsequent decisions, decrees, and regulations) require that pre-election testing include the following? – Testing the power-up of every machine – A simulation of likely voting orders, patterns, and ranges – Stress testing with large numbers of votes – Vote tally checking – Correct date and time information testing – Date set to election day run-throughs – Simulations of error conditions in order to evaluate system response to problems and mistakes – Reboot/restart functionality testing – Testing equipment recovery from system crashes – Testing for unexplained flashing or otherwise inconsistent or potentially suspicious behavior – Checking for complete list of candidate names, party affiliations, ballot initiatives, or proposition options – Testing the use of an independent log to compare the system count and the selections made by the voter – Testing the use of an independent log to compare the paper ballots (if used) produced with the system count and the selections made by the voter – Testing of display calibration – Testing of audio ballot functionality – Testing of the security and authentication techniques used in connecting the voting machines to the network (if applicable) – Testing to ensure that the ballot information for each precinct is correct – Other (please describe) • Do the legal provisions regarding certification, tests, and audits create a meaningful accountability mechanism?
8. Please describe the election day procedures as outlined in law.	• Please describe the intricacies of election day procedures as specified by the election law and/or the rules and regulations of the EMB. Consider the following: – Poll opening and setup of all equipment (including production of zero tape, ensuring that all items are present and accounted for) – Connectivity of equipment during the course of the day (including when, why, and how long the machines are connected to a network and what security and authentication measures are in place) – The voting process – Storage of spare equipment – Poll closing procedures – Vote counting and tabulation procedures – Storage and transportation of polling place results • Does the law require that IT technicians be present at polling stations? If so, what are the qualifications for such technicians? • What is the relationship between such technicians and the poll workers?

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9. What security and contingency plans are prescribed by law?	• Does the law (legislation and/or subsequent decisions, decrees and regulations) require that poll workers complete incident reports or file minutes for the polling place? If so, in what circumstances are they required? – What information is collected in the report? How is information collected? – What happens to that information at the end of the election? • Does the law or official rules and regulations require the following? – Contingency plans are in place in case of equipment failure – Replacement equipment is available in the event of malfunctions (same model as the technology it replaces, deployed from a central location, kept at each polling place…please elaborate) – Substitute technology is subject to the same testing and evaluation procedures as equipment originally deployed to polling places – Chain of custody procedures are in place for equipment taken out of service during an election (chain of custody documented, documents available to the public...please elaborate) – A process for documenting malfunctions, failures, or errors is in place – A process for obtaining election day performance records (e.g., errors, malfunctions) of specific equipment is in place • Contingency plans and procedures for partial or total power outage are in place
10. What provisions are in place for the resolution of electoral disputes regarding the use of e-voting technologies?	• Do electoral offense provisions of the electoral law also apply to the new technologies in use? • Does the law (legislation and/or subsequent decisions, decrees, and regulations) make special provision for complaints and remedial actions based on the use of electronic technologies? Please provide a detailed description of the provisions and how they are related to the standard complaints procedures. Consider the following: – What triggers a recount – Voter application – Candidate application – Narrow margin of victory – Automatic random recount – None of the above – Other (please describe)
11. Are there major gaps or flaws in the legal framework regarding the use of e-voting?	

Cont. next page

Technology Overview

Please provide an analysis of the e-voting system in use. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance.

Summary Criteria for Assessment

- The way in which voters cast a ballot should not influence how they vote.
- The e-voting system should function correctly throughout the electoral process and should resist malfunctions, breakdowns, and denial-of-service attacks. Where there are multiple components to the e-voting system, they should interoperate.
- The e-voting system should perform regular checks to ensure that it is functioning according to specifications.
- The e-voting system should include technical safeguards to ensure the eligibility of voters and should ensure that only the appropriate number of votes per voter is cast and that all votes are stored in the electronic ballot box.
- The e-voting system should ensure that the voter's choice is accurately recorded and sealed in the electronic ballot box.
- Ballots should be designed to optimize the voting options for voters.

Analytical Questions	Issues to Consider
12. What is the background to the introduction of the e-voting technology?	• Is this the first time these technologies have been used? Consider the following: – How long e-voting systems have been used, in which previous elections they were used, how the system performed in previous elections, if there is a consensus opinion on the success of the system in previous elections – If e-voting systems have been recently introduced, why they were introduced – Who made the decision to introduce e-voting systems • Are these technologies used throughout the country? If no, please attach maps indicating where different technologies are used. • To what degree were political parties consulted during the technology procurement process?
13. Does the e-voting system, including balloting, in use as a whole protect fundamental human rights and promote obligations for democratic elections?	• Does the system protect the secrecy of the ballot? • Can cast votes be linked to voters? • Are there any requirements that the system be usable by those with disabilities? • What steps have been taken to ensure that the system is usable by voters? • If necessary, are alternative means of voting provided? • What steps have been taken to ensure the accuracy of the vote count? • Are ballots (and the text on screens) available in minority languages? • If applicable, how are write-in votes processed? Who is responsible for processing write-ins? • Can a voter's ballot be spoiled? If so, how? Please describe how a vote can be spoiled and what happens to such ballots. • Can a voter cancel a vote prior to casting a ballot? If yes, what is the process of cancellation? • Can a voter cast a blank ballot? • Can cast ballots be linked to a voter? • Is the ballot interface user friendly? • Does the electronic ballot replicate any paper ballots being used (e.g., same order of candidates)?

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14. How does the e-voting system work?	• Which types of voting system technology are used? – Direct recording electronic device (DRE) – Precinct count optical scan equipment – Central count optical scan equipment – Lever machines – Electronic poll book – Ballot marking devices • What version or versions of all hardware and software (vendor and model number) are deployed in the voting system technologies, including but not limited to any version of: – Smart card devices – Firmware used in touch-screens – Vote-counting server – Other (please describe) • Does the system perform regular checks to ensure that it is functioning correctly? • Please include a diagram, detailed descriptions, and where possible, photographs of the election office components, how they are connected to one another, and their respective roles in the election process. • Please include detailed descriptions of the devices used in the polling place (e.g., DREs, supervisor's cards, voter's cards, memory cards), including physical descriptions, photos (if possible), diagrams, and descriptions of how they work and when and how they interact with one another.
15. If the system produces a VVPAT, please describe how it works.	• Does the technology produce a VVPAT or have a paper ballot? If yes, please describe how the VVPAT works, including whether or not the voter is able to verify that the paper ballot matches his/her choice before the vote is cast. Consider the following: – What happens to the paper trail during and after voting (please describe) – What rules and regulations there are to ensure that the VVPAT does not undermine the secrecy of the ballot and that voters are not able to remove evidence of how they have voted from the polling station

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Voter Education: Public Awareness, Confidence, and Voter Accessibility

Please provide a written evaluation of the efficacy and comprehensive nature of electoral education efforts, focused on the adoption of voting technologies, in all relevant regions of the country (assisted by long-term observers) and analyze the public's understanding and familiarity with the voting technologies in use. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance.

Summary Criteria for Assessment:

- The use of e-voting should be introduced gradually and after a process of inclusive public debate.
- Information regarding the process should be available throughout the electoral cycle.
- Voter education campaigns that are accessible to all voters, including those with special needs, should be provided by the state.
- Voters should have the opportunity to interact with the voting technology prior to participating in an election.
- Voters should be informed in advance of the election of how the election will be organized, the software and equipment used, and how and when they can participate in the process.
- Observers (domestic and international) and candidates and their agents should be able to provide an independent assessment of the technology, thereby promoting confidence in the process.

Analytical Questions	Issues to Consider
16. How was the e-voting system introduced, and is there a vibrant public discourse regarding the technology? If so, what is the tone of this debate?	• Was the system introduced gradually after a process of public debate? What form did the debate take? • Are civil society organizations reporting on issues related to e-voting? If so, please attach any pertinent documentation. • Is the media reporting on issues related to e-voting? If so, please provide a sample of relevant pieces. • What has been the response of the election commission and/or vendor to these reports? • Have any opinion polls been conducted related to the use of electronic election technology? If so, what are their results? • Does there appear to be a sense of concern among the general public about the transparency of e-voting systems, and if so, has the state responded to these concerns at all? Please explain. • Are there any political parties or individual candidates who are campaigning on issues related to the use of e-voting? Please provide further details. • Have there been any high-profile legal cases regarding the use of the technology? If yes, what were the issues, and what is the status of the case?

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17. What do voter education campaigns (regarding the use of technology) include, and who are the target audiences?	• Are there public information drives about the use of e-voting by either the EMB or civil society organizations (CSOs)? If so, how widespread are these drives? • Have voters, political party agents, domestic observers, and/or others received training on the electronic system in use? • Are simulations of the opening, voting, closing, and counting procedures provided and open to the public? If so, please provide further information about location, timing, and attendance of the simulations.
18. Is information regarding the technology publicly available to voters, observers, and candidates or their agents throughout the cycle?	• Are there any websites through which the EMB or CSOs are disseminating information about e-voting? If so, please list them. • Is information available at local election commission offices? • Have any organizations or individuals sought information (using access to information laws or otherwise) regarding the technology? What was the result?

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Election Management: Administration of Electronic Voting and Procurement of Technology

Please evaluate the ability of electoral administrators to implement voting technologies in a timely and effective manner, while ensuring the fulfillment of fundamental human rights relevant to elections. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance.

Summary Criteria for Assessment

- EMBs are responsible for taking the steps necessary to ensure the fulfillment of fundamental rights and must ensure the e-voting technologies protect these rights.
- The responsibilities of the EMB and other stakeholders (such as technology vendors) should be clearly established in law.
- EMBs must ensure the reliability and security of the technology and take all steps necessary to prevent fraud and unauthorized interference with the system throughout the electoral process.
- Technologies introduced must be responsive to the needs of the electorate, and this must be reflected by an open and competitive tendering and procurement process.
- Criteria for procurement should be established well in advance of the election.

Analytical Questions	Issues to Consider
19. What steps has the EMB taken to ensure that the use of the technology fulfills and protects fundamental human rights?	• Does the EMB have access to technical expertise, either in-house or external, when assessing e-voting systems and associated technical options? • Has the EMB played a central role in ensuring that certification, tests, audits, and checks and balances are in place to protect human rights? • Were issues related to fundamental rights (e.g., secrecy of the ballot, the right to vote and be elected) considered in the specifications for the technology released as part of the procurement and tendering process?

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20. What is the role of the EMB, vendor, and/or other stakeholders in the administration of e-voting?	• Please provide an overview of the institutions responsible for the administration of the e-voting systems, including the vendor, any certification and/or testing bodies, organizations responsible for maintenance or election official training, etc. • Do these organizations provide checks and balances on one another? If so, please explain how they do so. • What is the role of the EMB in the administration of e-voting? • What vendors provide which components of the e-voting systems? Please describe. • Have the vendors described made contributions to political parties or campaigns? If so, please describe and attach any relevant documentation. • Are any of the following services included in the contract with the vendor? If so, please explain in greater detail. – Timely supply of equipment – Pre-election and postelection testing – Regular physical maintenance – Regular software upgrades – Replacement of equipment in case of failure – Ballot design – Ballot printing – Warranties – Logistical arrangements for delivery of election equipment (and postelection return) – Other (please describe) • Please describe the plans in place for troubleshooting during each element of the process. • What, if any, penalty or reimbursement provisions are triggered by technical problems with the technology?
21. To what extent was the tendering process competitive, open, and transparent and conducted according to established procedure?	• Who designed and developed the e-voting system? • What were some of the factors taken into consideration when choosing and designing this technology? • Is this technology leased or purchased? Who owns the equipment? • What are the terms of any lease, and are there clauses allowing for the election authorities to purchase the equipment for future elections? • Who owns the source code for the technology? • Did the process follow good practice guidance for tendering? Consider the following: – Having open and transparent processes – Using clearly established criteria for the product, including performance requirements, expected outputs, and functionality and identifying measurement tests for these criteria – Seeking multiple bids through an open call for tenders – Providing clear guidelines on what an application should include and the timetable for response

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VOTING OPERATIONS: SECURITY MEASURES AND CONTINGENCY PLANNING

Please provide an analysis of the security and contingency plans in place for this election. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance.

SUMMARY CRITERIA FOR ASSESSMENT

- Responsibility for the security and reliability of e-voting equipment lies with the election authorities, and they should satisfy themselves that the technology operates correctly.
- EMBs should take steps to prevent unauthorized interference with the technology.
- The e-voting system should include access controls so that only authorized users can access the equipment and should require effective user authentication for any action carried out. Authentication data should be protected to prevent unauthorized access to the technology.
- E-voting equipment should be checked and approved prior to each election to ensure it complies with technical specifications.
- Clear processes and procedures should be in place to regulate and document physical access to the machines.
- Voting materials, including data retained after the election, should remain secure at all times.
- There should be a contingency plan in the event of technological failure.
- Contingency plans should clearly establish when and how replacement technology will be allocated.
- Poll workers should receive training on how to implement the contingency plan.

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Analytical Questions	Issues to Consider
22. Who has access to the e-voting technology, and how is access regulated and recorded?	• Please provide a detailed description of the technologies in place to ensure the physical security of the e-voting system before, during, and after election day, including who is allowed physical access to the equipment, what measures are taken to prevent physical tampering (i.e., tamper-evident seals) with the election equipment, whether or not physical access is documented, and who maintains those records. • Who has access to the software used in this electronic system? • Are vendors permitted access to the voting systems after they have been delivered? If so, for what purposes, and when are they permitted access? Is this access controlled and documented? • Are vendors permitted to access the voting systems after they have been delivered to the polling station? • Are records kept of all upgrades and repairs that are made to voting equipment? • Is there a cutoff date after which no further changes or updates may be made to the voting system? What is that date? • Is any equipment used for any purpose other than election administration, such as a personal computer? If so, please provide further details of the other uses of the equipment, including the purpose, who has physical access, other software that is required for this secondary use, etc. • Who has physical access to the central tabulating computer, and what measures are taken to prevent physical tampering with election equipment? • Are vendors permitted access to the central tabulating computer? If so, for what purposes and when are they permitted access? Is this access controlled and documented? • Is physical access documented, and if so, who maintains these records? • Are records maintained of all upgrades and repairs made to the central tabulating computer? • Is the central tabulating computer used for any purpose other than election administration? Is any extraneous software installed on the central tabulating computer? If so, please provide further details of the other uses of the equipment, including the purpose, who has physical access, other software that is required for this secondary use, etc.

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23. What measures are in place to ensure that materials and data are secure throughout the process?	• Who is responsible for transporting the machines from their storage location to testing centers and polling places? Please provide relevant documentation, including the chain of custody during transportation. • When will transportation of the equipment from central storage to the polling places take place? • Who has access to the delivery plan? • Who will accompany the equipment? • Will equipment be shipped separately from other election paraphernalia? • Who pays for the transportation of the equipment? • Where and how are machines to be stored in the period immediately around election day? • Are any components of the system stored in escrow? For example, in Georgia, USA, the source code is stored in escrow by a university. • Are there written procedures and requirements regarding the storage of voting system software stored in escrow? If so, please provide further details on these requirements and who has access to the software.
24. How is data transmitted?	• What is the method of transmission of information between the components of the system? Please describe. • If possible, please provide a detailed description and diagram of all of the data paths in and out of the components of the system. • How is access to the data ports secured? • How are transmissions secured from alteration and interference? Please provide a detailed description. • When is this computer networked to the other hardware in use? • How are transmissions verified? • Are digital signatures employed to verify data transmissions? If so, who provides the key pairs, and who is the verifying authority?

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25. What inspection and audit procedures are in place to ensure that the system complies with specifications?	• Is any of the voting system software open source software? If yes, please include information on location and availability. • Who is responsible for inspecting the software used in this electronic system? • Who has access to the software used in this electronic system? • Under what conditions does the official software inspection take place? Please provide a detailed description of the software inspection process, including the length of time allotted for the inspection and the means of inspection. • Does the law require that the results of the official software audit be made public? Who has access to the results of the audit? • What was the response of the EMB to the results of the software audit? Were any changes made? • Does the software inspection (either by an independent body or the official organization responsible) include checking the source code against the executable code? • Who is responsible for creating the executable code from the source code, and is this process (above) subject to independent verification? • Under what conditions are independent software inspections (including representatives of political parties and civil society) conducted? Please provide a detailed description of the inspection process, including the length of time allotted for the inspection and the tools that inspectors are allowed to use. • Does the law specify whether independent software inspections are conducted by a guided walk-through, such as on an LCD screen with the mouse controlled by an election official, or by a hands-on review? • Are there any conditions civil society and political party representatives must fulfill in order to be allowed to conduct a software review? • Have the civil society and political party representatives made public the results of their software review? What are their technical qualifications?
26. What contingency plans have been made, and have they been appropriately disseminated?	• What contingency-planning training is in place for polling officials? Please describe and attach any pertinent information. • What contingency plans are in place in case of technical failures on election day? • What plans are in place for training polling officials on these contingency procedures? Please describe and attach any pertinent information. • How do polling places and central offices communicate in case of technical issues with equipment or external emergencies, such as power outages, telecommunications failure, etc. Is there a hotline number available for polling staff to call? Who staffs the response center? • What happens if a machine is found to have been tampered with? Please describe any contingency plans that may be in place for such an event. • What contingency plans are in place in the event of failure of the central tabulating computer? Please describe.

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27. What measures are in place to ensure that the system is independently verifiable?	• Are there procedures in place that encourage independent verification of the transmission of data, such as printing of polling place election results prior to transmission to the central tabulating computer, which can then be compared to the final or interim results? • If there are printouts of the results at the polling station level, how many? Who is designated to receive copies of the results? Is there any local promulgation of the results, such as a sign on the wall at the polling center?

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Voting Operations: Certification and Pre-election Testing

Please assess the transparency and effectiveness of the certification and testing process. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance.

Summary Criteria for Assessment

- States must engage in comprehensive processes of certification and pre-election testing.
- Impartial, independent, and transparent certification measures should be in place to ensure that the system meets national and international standards as well as the requirements of the election jurisdiction and the specifications laid out by the vendor.
- E-voting technologies should be tested prior to the deployment of the machines on election day.
- Potential voters should be able to interact with the equipment.
- There should be adequate time after tests to rectify any problems that may arise.
- Domestic and international observers should have access to the certification and testing processes.

Analytical Questions	Issues to Consider
28. What is the certification process?	• Is the EMB required to assert that systems are ready and certified? • Does certification occur before or after the procurement process? • What standards are applied to the certification of e-voting technologies? Please attach relevant documentation. • Is the technology recertified after every upgrade and repair? • What are the weaknesses of the certification standards?
29. How independent, impartial, and transparent is this process?	• Who is responsible for certification? • What is the relationship between the certification body and the organization whose technology is being certified? • Who pays for the certification of the technology?

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30. What pre-election tests, including acceptance testing, mock elections, etc., are required, and what do they include?	• Does the state have recommended procedures for the testing and use of each type of election equipment? If so, please describe these procedures and attach any supporting documentation. • What is the timetable for pre-election tests, and where are they conducted (in a central location, provincial locations, or elsewhere)? Please provide further details and any relevant documentation. • How many machines are tested? Please provide details of the sampling method used to conduct the pre-election tests. • Who designs and who conducts the pre-election tests? • Is equipment to be retested after every upgrade and repair? If not, why not? • Please attach any relevant documentation outlining the regulations and procedures for pre-election testing. • Please describe the acceptance testing process, including the location and conditions under which the tests are conducted, who is responsible for the testing, who designs the testing, how often/when testing occurs, who pays for acceptance testing, and what was done with machines that did not meet specifications. • Is there an expected failure rate of machines during election day? • Are mock election exercises required by law? • Were the election simulation exercises an overall success, or were serious issues revealed? • What failures or breakdowns, if any, occurred? • What percentage of ballots were rejected or spoiled? • Did the exercise include transmission of results to tabulating centers? If so, what was the transmission time? • What aspects of the exercises deviated from conditions in an average polling station? Were expert technicians on hand to help resolve technical hiccups? Was the roster of mock voters cherry-picked from relatively educated people? How many mock voters took part? The same as at an average polling station? Were they instructed to come at staggered times? • What was the purpose of the mock election? Consider the following: – To conduct a real live-fire test – To carry out a test in a limited and controlled environment from which some lessons might still be drawn – Voter education • Were polling officials and voters systematically interviewed for their observations and inputs on the process and how it could be improved? • Are voting machines available for voters to interact with at any other point in the pre-election period? If yes, of what does this interaction consist? • Is there time after the tests to rectify any problems that may have arisen?
31. Are certification and testing observable?	• Is the certification process accessible to the public, political party agents, domestic observers, or international observers? • Are the acceptance tests open to any of the following? – The public – Political party agents – Domestic observers – International observers • Are pre-election tests open to the general public, political party agents, domestic observers, or international observers? Please attach relevant documentation.

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Voting Operations: Election Day Procedures

Please complete a written analysis of election day procedures related to voting technologies, contingency planning, and staff training (prior to election day).The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance during this process.

Summary Criteria for Assessment

- The obligations that are relevant to paper-based elections remain relevant in elections that utilize e-voting. Carter Center observers should ensure that they are using the general observation tools and resources to assess this aspect of the process.

Analytical Questions	Issues to Consider
32. How will e-voting technologies be used on election day?	• What is the election day process? • Are there any population segments not using the automated system? • Are there plans to field technology specialists at polling stations? How will they be recruited, and what will their scope of responsibility be? How many will be deployed? What kind of training will they receive? • How are votes conveyed to the next level of tabulation? • What tests or audits, if any, are required on election day? Please describe in detail and attach any relevant documentation outlining regulations and procedures for election day auditing/testing.
33. Does the voting environment on election day protect fundamental rights?	• Where will polling take place? – Schools – Religious buildings – Public buildings – Other (please provide details) • When selecting polling locations, have election administrators taken into account the specific demands posed by the use of e-voting, such as the availability of electrical outlets and polling station layout? • Are provisions made to ensure that polling places are generally accessible, including to those with disabilities?

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Vote Counting and Dispute Resolution: Counting, Tabulation, Audits, and Recounts

Please provide a written evaluation of VVPAT, auditing, and recount procedures focused on assessing statistical significance and potential impact on electoral results as well as an analysis of the impact of recount and audits on electoral dispute resolution systems as defined by law. The overarching analytical questions and issues to consider, outlined below, are intended to provide general guidance during this process.

Summary Criteria for Assessment

- Votes should be counted by an independent and impartial EMB.
- The counting process should be transparent and free of corruption.
- Safeguards should be in place to ensure the accuracy of the vote count.
- Results should be published in a timely manner and announced and posted at the polling station.
- Results should be transmitted to the next level of tabulation in an open manner, and steps should be taken to protect the data during the transmission process.
- Votes must be preserved for review to ensure that necessary evidence is available in case of complaints.
- Domestic observers, candidates, and their agents should be able to observe the counting process and receive copies of the results.
- The e-voting system must be auditable.
- Audits should provide the ability to:
  - Cross-check and verify the correct operation of the system
  - Verify the accuracy of the results
  - Detect voter fraud
  - Prove that all ballots are authentic
  - Prove that all votes have been counted

Analytical Questions	Issues to Consider
34. What is the vote-counting process?	• Does the EMB bear responsibility for all aspects of the vote-counting process? • How and where are ballots (taking into account the different kinds of ballots that may be in use) counted at the end of the election? Please describe. • Are paper ballots or VVPAT counted at the end of election day? If so, is the tally compared to the electronic-result tally produced by the voting machine? • Are paper ballots or VVPAT from all machines counted, or is this process conducted on a statistical sample? If so, what is the sampling method used? • Are multiple ballot databases in use (i.e., separate ballot databases for absentee and in-person votes)? If so, how are they aggregated? • Who is responsible for the aggregation of these databases? • Are results printed and publicized prior to their transmission to the central tabulation system?

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35. Does the counting process protect fundamental rights?	• Can a cast ballot be linked to a voter during the counting process? • What measures are in place to ensure the accuracy of the count and prevent tampering with the results? • Are the results to be released in a timely manner? • Are the results to be publicly posted? • Is the counting process open to observation? • Are observers, candidates, and their agents given copies of the results protocol?
36. How are results transmitted and tabulated?	• What is the procedure for the transmission of results? • Are there separate transmittal paths for unofficial and official results?
37. What is the process for conducting postelection audits?	• What are the procedures for a postelection audit? • If the audit is conducted on a sample of machines, how is that sample created (e.g., with dice, computer algorithms)? • When does the postelection audit occur relative to the certification of results? • Are the public, party agents, and observers allowed to observe the postelection audit? • Is public notification given of the time and place of the postelection audit, and if so, how? • What personnel conduct a postelection audit? • If a discrepancy is revealed by a postelection audit, which results—original or audited—take precedence? • What legal standing does an audited result hold? • Can a discrepancy affect proclamation of a candidate? Can it trigger an automatic recount? • Provide the URLs of the key institutions involved in the implementation and oversight of the elections.

Glossary of Terms

Acceptance testing A series of tests run on an operating system to test particular features of the system prior to launch of the product

Audio ballot functionality The working capacity of the audio verification component of automated election machine technology

Ballot database The electronic database within a server that maintains records of all votes recorded

Central count optical scan (CCOS) A voting system that tabulates ballot results from multiple precincts in one location and, depending on the technology, creates either/both a printed report or/and an electronic report

Central tabulating computer A single server that collects all precinct polling data and tabulates the results together at a national level

Certification Also known as product qualification, a process by which a certain product (in this case an e-voting machine) is ascertained to have passed certain previously stipulated qualification requirements

Certification body An independent and administrative authority that determines whether the voting equipment has met the set of preapproved standards through a process of certification

Chain of custody Chronological documentation of the seizure, custody, and transfer of an item

Cold audit An audit of electoral results completed sometime after election day, used as a way to verify that all technology was functioning correctly but generally not intending to impact the electoral results

Direct recording equipment (DRE) A voting machine system technology that records votes by means of a touchscreen or keyboard-user interface

Election audit A verification process, ideally through the keeping of a paper record of e-voting data, used to authenticate results and verify the validity of the electoral contest

Executable code Contains instructions or commands for a computer processing unit or its software (as opposed to a file that contains only data)

Firmware The programmed instructions that compose the circuitry of an electronic device

Functionality test A type of testing that determines whether or not the data entry interface correctly recognizes and records data entry inputs

Hardware The physical and tangible components of a computer system

Hot audit An audit of electoral results conducted simultaneously with vote counting and tabulation, generally on election day

Independent log Hard-copy record of votes, which can be used to substantiate and audit electronic results (see also, VVPAT)

Open source software Software whose source code falls under a software license that allows it to be open to the public domain

Optical mark reader (OMR) A voting machine system technology that electronically records votes from a human-marked document

Precinct count optical scan (PCOS) A voting system that tabulates ballot results at the polling place (with the involvement of electronic technology, records may be stored electronically at each polling place and transmitted to a central location)

Smart card A small card with built-in circuitry that enables it to store and process data

Software Digitally stored data, sometimes in the form of a computer program

Source code The mechanism, normally a human-readable text file, through which programmers specify the actions to be taken by a particular program

Stress test A type of testing that determines the stability of a system by testing it beyond normal operational capacity

Testing An investigative process that examines the integrity and quality of the software and hardware at issue

Testing body Often associated directly with the software/hardware developer, oversees and conducts the testing of a particular technology

Vendor The provider of a good or service (in this case, the e-voting machine)

Vote counting server The component of the voting machine wherein voting data is stored and tabulated

Voter application Document that determines voter's capability of participating in an electoral contest

Voter-verified paper trail (VVPAT) Also known as a voter-verified paper audit trail, a printed record of electronically tabulated votes intended to serve as independent verification of e-voting data

Write-in vote Space on a ballot for voters to write in a choice other than the preprinted selection specified on the ballot

Zero tape A printout produced by e-voting machines prior to the commencement of voting, which should indicate zero votes are stored in memory at that time

APPENDIX B: EXAMPLE ELECTION DAY CHECKLISTS

B

POLL OPENING – VENEZUELA 2006

Instructions:
If you cannot answer the question because you have not observed this aspect of the electoral process, please mark the "Not Observed" box. If the question is not relevant, write "n/a". If you answered "no" to any asterisked (*) question, or violations of irregularities occurred, please provide details on the back of the form.

When possible ask domestic observers and/or political party agents for their observations during the period prior to your arrival. When it is applicable, fill out both the "direct observation" and the "reported to the Carter Center team" column, even if the responses are different.

Polling Station No:_____
Team No: _____ Time of Arrival: _____
City/district: _____ Time of Departure: _____
Province: _____ Date: _____

1. What technology is used in this polling station:

a. Smartmatic SAES 3000 voting machine (small DRE)	
b. Smartmatic SAES 3300 voting machine (larger DRE)	

2. How many machines are located in this polling station? _____
3. What is the number of registered voters in this polling station? _____
4. Where were these machines stored in the lead-up to the election?
   _____
   _____
5. When did the equipment arrive at the polling station?
   _____
   _____
6. Who delivered the equipment to the polling station?
   _____
   _____
7. Was this chain of custody documented? Yes/No

8. If yes, who maintains the documentation?

_____

_____

POLL OPENING

	Direct Observation		Reported to Our Observers		Not Observed
9. Are electronic voting machines positioned:					
a. With enough distance between them, at such an angle and with shields to ensure privacy?	Yes	No	Yes	No	
b. To plug into an electrical outlet?*	Yes	No	Yes	No	
10. Are the polling officials and support technicians properly accredited and identified?*	Yes	No	Yes	No	
11. Did the polling officials perform diagnostics and print the diagnostic report for all machines?*	Yes	No	Yes	No	
12. Was the setup of the machines completed without problems? *	Yes	No	Yes	No	
c. If no, could the polling station technicians resolve the problem within the specified 30 minutes?	Yes	No	Yes	No	
d. If technicians could not resolve the problem, was the machine replaced with another machine within the maximum of 120 minutes (counting from occurrence of the problem)? *IF YES, PLEASE START A NEW FORM FOR THE REPLACEMENT MACHINE	Yes	No	Yes	No	
e. If the machine was not replaced within the 120 minutes, did the polling station change to manual voting? *IF YES, DON'T CONSIDER THIS MACHINE / BALLOT BOX ANY FURTHER	Yes	No	Yes	No	
13. Did anybody at any time connect an external keyboard, or any other device (except the standard release button or the standard ballot tablet) to any of the voting machines?	Yes	No	Yes	No	

14. Before voting can begin, did each machine produce a zero tape? * ("ACTA CERO")	Yes	No	Yes	No
15. Did the polling officials store the diagnostic reports and the zero tapes in the corresponding envelopes?	Yes	No	Yes	No
16. Did polling officials log the identification number of each machine as it was opened and prepared for the election?*	Yes	No	Yes	No
17. Did you observe the official tamper-proof tape sealing the case in which the voting machines arrived?*	Yes	No	Yes	No
18. Did the case contain all the required machine components?*	Yes	No	Yes	No
19. Did you observe tamper-proof seals or tamper-tape covering the ports of the machines prior to the machine being set up?*	Yes	No	Yes	No
20. Did polling staff receive all the equipment needed?*	Yes	No	Yes	No
21. If applicable, did polling staff receive an adequate number of paper ballots in case of failure of the machines?*	Yes	No	Yes	No
22. Are the machines set up so as to be accessible to disabled voters who may need special equipment or be in a wheelchair or have other restrictions on their movement?	Yes	No	Yes	No
23. Did polls open on time?	Yes	No	Yes	No

POLL OPENING – ELECTRONIC POLLBOOK OBSERVATIONS

24. Is an electronic pollbook going to be used at the polling station? (Fingerprint System - SAV / "Captahuellas")	Yes	No	Yes	No
25. Did any problems occur during setup of the fingerprint system? *IF YES, PLEASE COMMENT BELOW	Yes	No	Yes	No

COMMENTS

ELECTION DAY OBSERVATION – VENEZUELA 2006

Instructions:
If you cannot answer the question because you have not observed this aspect of the electoral process, please mark the "Not Observed" box. If the question is not relevant, write "n/a". If you answered "no" to any asterisked (*) question, or violations of irregularities occurred, please provide details on the back of the form.

When possible ask domestic observers and/or political party agents for their observations during the period prior to your arrival. When it is applicable, fill out both the "direct observation" and the "reported to the Carter Center team" column, even if the responses are different.

Polling Station No:_____
Team No: _____ Time of Arrival: _____
City/district: _____ Time of Departure: _____
Province: _____ Date: _____

1. What technology is used in this polling station:

a. Smartmatic SAES 3000 voting machine (small DRE)	
b. Smartmatic SAES 3300 voting machine (larger DRE)	

2. How many machines are located in this polling station? _____

3. What is the number of registered voters in this polling station? _____

4. Where were these machines stored in the lead-up to the election?
_____
_____

5. When did the equipment arrive at this polling station?
_____

6. Who transported the equipment to the polling station?
_____
_____

7. Was this chain of custody documented? Yes/No

8. If yes, who maintains this documentation?

_____

_____

AFTER POLLS OPEN

	Direct Observation		Reported to Our Observers		Not Observed
9. Do electronic ballots seem complete and contain all appropriate candidates and races?*	Yes	No	Yes	No	
10. Do the screens appear to be properly calibrated?*	Yes	No	Yes	No	
11. Have all ballots operated properly?*	Yes	No	Yes	No	
12. Does the ballot touchpad appear to be properly calibrated?*	Yes	No	Yes	No	
13. Are voters on electronic systems made aware by the machine that they might be undervoting?*	Yes	No	Yes	No	
14. Do voters seem to find the instructions for casting a ballot clear?*	Yes	No	Yes	No	
15. Do accessibility devices appear to be working properly?*	Yes	No	Yes	No	
16. Do voters casting ballots in other languages appear to have complete and clear ballots, and clear instructions on how to cast their vote?*	Yes	No	Yes	No	
17. Do election officials keep a running tally on a regular basis through the day to ensure the number of votes on the machine is consistent with the number of voters who have voted?	Yes	No	Yes	No	
18. Are voters able to verify their vote?*	Yes	No	Yes	No	
19. Are voters able to verify their vote printout before the vote is electronically recorded?	Yes	No	Yes	No	
20. Are illiterate voters able to verify their vote?*	Yes	No	Yes	No	
21. Are paper ballot receipts handled according to the established procedure?*	Yes	No	Yes	No	

22. Are the machine's ports physically closed and inaccessible during voting?	Yes	No	Yes	No
23. Is the equipment networked at any point during your observation? (if yes, please explain why)	Yes	No	Yes	No

HANDLING EXCEPTIONS

	Direct Observation		Reported to Our Observers		Not Observed
24. Are poll workers aware of contingency plans in case of equipment or system failure?*	Yes	No	Yes	No	
25. Is replacement voting equipment (machines, cards, card programmers, etc.) available in the event of failure?*	Yes	No	Yes	No	
26. Did replacement equipment go through the same testing as the equipment initially deployed to the polling place?*	Yes	No	Yes	No	
27. Has any equipment been taken out of service at this polling station? (if yes, please explain why)	Yes	No	Yes	No	
28. Is the chain of custody for the removed equipment documented?*	Yes	No	Yes	No	
29. If voting equipment is taken out of service during election day, are votes and other relevant information extracted from it?*	Yes	No	Yes	No	
30. Is there documentation outlining the failure that has occurred and recording the chain of custody for:					
a. The machine?*	Yes	No	Yes	No	
b. The information drawn from the machine?*	Yes	No	Yes	No	
31. In case of power loss can the equipment operate on a battery?*	Yes	No	Yes	No	
32. If yes, do polling officials:					
a. Have sufficient batteries?*	Yes	No	Yes	No	
b. Know the average life of the battery?*	Yes	No	Yes	No	

POLLING STATION OFFICIALS

	Direct Observation		Reported to Our Observers		Not Observed
33. Have polling station officials received training specific to the equipment in use, including trouble-shooting in case of technical difficulties?*	Yes	No	Yes	No	
34. Are polling station officials adequately instructing voters on how to cast their ballot?	Yes	No	Yes	No	

ELECTION DAY AUDITING

	Direct Observation		Reported to Our Observers		Not Observed
35. Did polling officials conduct parallel testing?*	Yes	No	Yes	No	

COMMENTS

POLL CLOSING OBSERVATION - VENEZUELA 2006

Instructions:
If you cannot answer the question because you have not observed this aspect of the electoral process, please mark the "Not Observed" box. If the question is not relevant, write "n/a". If you answered "no" to any asterisked (*) question, or violations of irregularities occurred, please provide details on the back of the form.

When possible ask domestic observers and/or political party agents for their observations during the period prior to your arrival. When it is applicable, fill out both the "direct observation" and the "reported to the Carter Center team" column, even if the responses are different.

Polling Station No:_____
Team No: _____ Time of Arrival: _____
City/district: _____ Time of Departure: _____
Province: _____ Date: _____

1. What technology is used in this polling station:

a. Smartmatic SAES 3000 voting machine (small DRE)	
b. Smartmatic SAES 3300 voting machine (larger DRE)	

2. Which communication method is being used in this polling station?
   a. Fixed Line Telephone ☐
   b. Cellular Telephone ☐
   c. Satellite Telephone ☐
   d. No transmission, but transport of memory stick to nearest transmission center ☐
   (if so, which center is that?_____)

3. How many machines are located in this polling station? _____

4. What is the number of registered voters in this polling station? _____

5. Where were these machines stored in the lead-up to the election?
   _____
   _____

6. When did the equipment arrive at this polling station?
   _____

7. Who transported the equipment to the polling station?

_____

_____

8. Was this chain of custody documented? Yes/No

9. If yes, who maintains this documentation?

_____

_____

POLL CLOSING

	Direct Observation		Reported to Our Observers		Not Observed
10. Once voting has finished for the day, do poll workers follow procedures to complete the process and close the polls?	Yes	No	Yes	No	
11. If there is a running tally of ballots cast on the touch screen or other voting machine, are the numbers of this tally the same as the tally tape and precinct totals?	Yes	No	Yes	No	
12. Is the memory card containing the voted ballots removed from the port?	Yes	No	Yes	No	
13. If so, are the port doors resealed?	Yes	No	Yes	No	
14. Were the polling place totals successfully printed?	Yes	No	Yes	No	
15. If not, were the proper contingency procedures followed?*	Yes	No	Yes	No	
16. Do polling officials print polling place totals before sending any electronic communications out of the polling place via connection to a network?	Yes	No	Yes	No	
17. Was the transmission method as originally planned for this polling station used?	Yes	No	Yes	No	
18. Did the transmission to the central tally server complete?*	Yes	No	Yes	No	

19. Was transmission successful at first attempt?*

20. If transmission was not performed locally, but instead the memory sticks transported to the nearest transmission center, were the prescribed security measures followed?* Yes No Yes No

21. Is a copy of the printed polling place totals available for public review at the end of the day? Yes No Yes No

22. If paper ballots are produced by the equipment, are those ballots counted and compared to the printed totals? Yes No Yes No

23. Is transportation of equipment and voting materials including memory cards and polling place total tapes done by no fewer than two poll workers? Yes No Yes No

24. Is the chain of custody during the transportation process documented?* Yes No Yes No

25. Do election officials appear to understand and adhere to the required procedures? Yes No Yes No

26. Were there any complaints arising from the use of election equipment? If so, please provide details including their resolution. Yes No Yes No

HOT AUDIT

27. Was a hot audit conducted? Yes/No

28. Who conducted the hot audit?

_____

_____

_____

29. How many machines in your polling place were audited?

_____

_____

_____

30. How were the audited machines selected to be audited?

_____

31. Did the count of the paper receipts match the electronic tally of the votes?

_____

_____

32. If no, please explain what happened and how polling officials handled the discrepancy.

_____

_____

_____

33. What was the discrepancy and how was it explained?

_____

_____

_____

_____

POST ELECTION AUDITS

	Direct Observation		Reported to Our Observers		Not Observed
34. Are all removable memory devices removed from the equipment?	Yes	No	Yes	No	
35. Has all data been removed from the machines?	Yes	No	Yes	No	
36. Who retains the saved data?					
37. Is there a clear and documented chain of custody for the equipment and the saved data?	Yes	No	Yes	No	
38. Is all equipment appropriately secured in preparation for storage until the next election?	Yes	No	Yes	No	

COMMENTS

_____

_____

_____

_____

_____

Study Mission - U.S. Elections 2008

Poll Opening Form

Instructions: Please read the questions carefully. Put an "X" in the appropriate box. If you cannot answer the question, because you have not observed this aspect of the electoral process, please mark the "Not Observed" (N/A) box. If you answered "no" to any question, or if you noted irregularities, please provide details in the comments section of the form. If a question refers to "published procedures" and "regulations" please refer to auxiliary documents provided, such as poll worker handbook describing these different procedures for each county.

		Observer Names
Arrival Time:		
Polling Station Location/No.		
Arrival Time:		
Departure Time:		

POLL OPENING	Yes	No	N/A
1 Were poll workers and the poll manager ("Inspector") at the station in time to set up the polling place, and for poll opening?			
2 Were poll workers duly sworn in?			
3 Did poll workers appear to understand the opening procedures?			
4 Was all equipment sealed according to published procedure when setup began?			

The following questions will require that you interview a poll worker. Please ensure that you do not disturb them, or prevent them from doing their job.

5 When did election materials arrive at the polling place?			
6 Where and how (for example cages, locks, tamper-evident seals) were election materials stored and secured in the lead-up to the election?			
7 Who delivered the election materials to the polling place?			
8 Did all election materials arrive (eg. paper ballots, machine equipment, poll books etc.)?			
9 Was a record maintained of who had access to the election materials?			
10 Did serial numbers (on seals or election material / machines itself) match those provided to poll workers? (If there were broken seals, or non-matching serial numbers, what reasons were given and what actions taken to remedy the situation?)			
11 Where required by regulation, did poll workers apply new seals to machine parts (e.g. DRE printer, DRE door) as specified after completed installation and write down the number on the seal?			

MACHINE SET-UP			
12 Are voting machines positioned to ensure secrecy?			
13 Are voting machines positioned in a way that would make it difficult for a potential attacker to access them unnoticed?			
14 Were all ballot boxes/bins of optical scanners empty? (each scanner may have up to three bins)			
15 Before voting began, did each machine produce a zero tape?			
16 Was that tape checked by poll workers and signed?			
17 Are machines set up so as to be accessible for disabled voters?			
18 What time did polls open?			

COMMENTS

Study Mission - U.S. Elections 2008

Polling Place Observation Form

Instructions: Please read the questions carefully. Put an "X" in the appropriate box. If you cannot answer the question, because you have not observed this aspect of the electoral process, please mark the "Not Observed" (N/A) box. If you answered "no" to any question, or violations or irregularities occured, please provide details in the comments section of the form. If a question refers to "published procedures" and "regulations" please refer to auxiliary documents provided, such as poll worker handbook describing these different procedures for each county.

City: _____

Polling Station Location/No. _____

Arrival Time: _____

Departure Time: _____

Observer Names

General

1 Where is this polling place located (please circle)?
- School
- Church
- Public building
- Garage
- Other

2 What technology is used in this polling place (please circle all that apply):
- Direct Recording Equipment
- Optical Scan Equipment
- Ballot Marking Device (Automark)
- Paper Ballots

3 How many machines (of each type if several types) are located within this polling place?

_____

4 What is the number of voters registered at this polling place?

_____

5 What is the ratio of voters to machine (No. of voters/No. of machines)? _____

Polling Environment	Yes	No	N/A
6 Was the polling place free from long lines, both inside and out?			
7 Was the polling place free from intimidation and interference?			
8 Was the polling place clear of campaign materials, campaigning or other attempts to influence voters around the polling place?			
9 Were party agents able to observe the voting process? (please circle all that apply) Democrats Republicans Other			

Election Materials and Equipment	Yes	No	N/A
10 Were machines positioned in such a way as to discourage unauthorized interference with them and to protect voter privacy?			
11 Where required by procedure, did machine parts and election materials remain sealed/secure throughout election day?			

The following questions will require that you interview a poll worker. Please ensure that you do not disturb them, or prevent them from doing their job.

12 Where were election materials stored in the lead-up to the election?

_____

_____

13 When did election materials arrive at the polling place?

_____

14 Who delivered the election materials to the polling place?

15	Was a record maintained of who had access to the election materials?			
16	Were sufficient election materials available?			
Voting Processes		**Yes**	**No**	**N/A**
17	Were voter IDs checked against the voters list where required by procedure (first-time voters in a federal election who registered by mail)?			
18	Were any provisional ballots issued? If so, why?			
19	Were all voters able to cast their ballot free from challenge regarding their right and ability to vote?			
20	Using a sample of five voters, how long, on average, did it take them to vote on the optical scanner?			
21	Using a sample of five voters, how long, on average, did it take them to vote on the DRE?			
22	If a DRE was used, did more than 5 voters vote on the machine (minimum of 5 votes must be cast on a DRE if used, this is required for privacy reasons by CA SOS)			
23	If a "ballot transfer" (ballots are removed from a full scanner ballot box during election day, and securely stored to allow continued use of the scanner) occurred was it free from incident?			
24	Was the voting process free from incident and/or delays?			
25	Did poll workers provide clear and accurate instructions to voters on voting process?			
26	Was provision made for disabled voters to cast their ballot and were they able to do so without incident?			
27	Were ballots and voting instructions available in minority languages, and did voters casting ballots in other languages receive clear and accurate instruction on the voting process?			
28	Did poll workers follow established procedures throughout the process?			
Machine specific issues		**Yes**	**No**	**N/A**
29	Did the voting machines and their components appear to be functioning correctly?			
30	Was the process free from voter complaint regarding the ballot marking, optical scan and/or DRE (including, where applicable, the VVPAT) equipment?			
31	Did DRE voters appear to actually check the VVPAT printout to see if it compares correctly with their touchscreen vote?			
Handling Exceptions		**Yes**	**No**	**N/A**
32	Are poll workers aware of procedures to follow in case of equipment or system failure?			
33	Is replacement voting equipment available in case of failure?			
34	Was any equipment taken out of service in the polling place?			
35	If so, were all procedures followed re:			
	documenting equipment failure			
	documenting chain of custody of equipment?			
	equipment replacement?			
COMMENTS				

Study Mission - U.S. Elections 2008

Poll Closing and Vote Counting Form

Instructions: Please read the questions carefully. Put an "X" in the appropriate box. If you cannot answer the question, because you have not observed this aspect of the electoral process, please mark the "Not Observed" (N/A) box. If you answered "no" to any question, or violations or irregularities occured, please provide details in the comments section of the form. If a question refers to "published procedures" and "regulations" please refer to auxiliary documents provided, such as poll worker handbook describining these different procedures for each county.

City: _____

Polling Station Location/No. _____

Arrival Time: _____

Departure Time: _____

Observer Names

	POLL CLOSING	Yes	No	N/A
1	What time did polls close? _____			
2	Were all voters in line at the close of polling able to cast their ballot?			
3	Were voters who arrived after the official close of the polls turned away?			
4	Was the poll closing peaceful and free from incident / complaint?			
5	Did poll workers follow published procedure closing the polls, including those regarding the application of seals and the chain of custody?			
6	Were election materials put in a secure location after polls were closed?			
7	Were all polling officials present during poll closing?			
8	Were party agents able to observe poll closing? (please circle all that apply) Democrats Republicans Other			
	VOTE COUNTING	**Yes**	**No**	**N/A**
13	Where were ballots counted (please circle)?: Central Location Polling Place			
14	Was the counting location free from intimidation, campaigning and interference?			
15	Were all poll workers present during the counting process?			
16	Were party agents able to observe the counting process? (please circle all that apply) Democrats Republicans Other			
17	Was the counting process open to the public?			
18	Did poll workers follow published procedures to determine the validity of ballots?			
19	Did poll workers follow published procedures to determine voter intent?			
20	If counting takes place in the polling place, was a copy of the polling place totals available for review by party agents at the end of the counting process?			
21	Were all election materials secured safely at the end of the count and stored according to procedure?			
22	Was the transportation of election materials conducted by no fewer than two poll workers?			
23	Was the count process free from complaint?			

COMMENTS

Testing and Sealing

THE CARTER CENTER

PHILIPPINES
GENERAL ELECTION
MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):** ☐☐:☐☐
Barangay:		**Departure Time (24 hr):** ☐☐:☐☐
Polling Center:		**Clustered Precinct #:** ☐☐☐☐
# of precincts at clustered precinct	**# of registered voters at clustered precinct**	

Note: Questions 1-3 require you to speak directly to polling officials and domestic observers. Please do so only when this will not disrupt voting.

	Please note the following:	PCOS	CF card
1	Date of delivery		
	Delivered by		
	Storage prior to precinct		
	Chain of custody kept by		

		YES	NO	N/A
2	Did the Election Officer post a notice listing the scheduled date of testing and sealing for the clustered precinct?			
3	Did the testing and sealing package include the main CF memory card?			
4	Which of the following groups are present (check all that apply)? ☐ PPCRV ☐ Party/candidate representatives ☐ At least 10 members of the general public ☐ PCOS Technician			
	TESTING			
5	Did the BEI explain the procedure for testing and sealing to those present?			
6	Was the PCOS box properly sealed?			
7	If YES, does the serial number match that from the central warehouse?			
8	Did the BEI Chair insert a new CF card in the POLL WORKER card slot, and apply a new seal in the presence of observers?			
9	What did the BEI do with the old flash card and seal? _____			
10	Did the BEI set up the PCOS without any difficulty? If NO, please list difficulties in comments.			
11	Did the BEI run diagnostics and feed a diagnostic ballot through the PCOS?			
12	Did the PCOS print a diagnostics report stating "Machine is ready for use"? If NO, please list reasons in comments.			
13	After the BEI entered their PINs, was an initialization report printed, checked and signed by the BEI and watchers?			
14	Were 10 voters selected at random to complete ballots?			
15	How many ballots were **returned then accepted**? _____ How many ballots were **rejected?** _____			
	If any ballots were returned/accepted or rejected, did the BEI determine the reason?			
	SEALING			
16	Did the BEI close the polls and print 8 copies of the election returns?			
17	Did the BEI decline the option to transmit results electronically?			
18	Was the PCOS re-zeroed?			
19	Did the BEI count the paper ballots and compare the manual election return to the printed election return?			
20	Did the election return results match? If NO, please describe in comments.			
21	Did the BEI have any difficulty shutting down the PCOS?			
22	Did the BEI insert the backup CF card in the ADMINISTRATOR card slot and apply a plastic seal?			
23	Did the BEI place the iButton key in the printer compartment and apply a plastic seal?			
24	Were the following materials placed inside the PCOS box? ☐ PCOS ☐ Keys to ballot box ☐ PINS for BEI and rezeroing ☐ Copies of minutes			
25	Was the PCOS box sealed and serial number recorded in the minutes?			
26	Where was the PCOS box stored? _____			
27	Are any of the following watching the PCOS until election day? (select all that apply)? ☐ PPCRV ☐ Other Poll Watchers ☐ PNP ☐ Political Party/Candidate reps ☐ BEI ☐ Other _____			

COMMENTS

Instructions: In the box below, please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/or attach additional sheets of paper to the report form.

Opening

THE CARTER CENTER

PHILIPPINES GENERAL ELECTION MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):**
Barangay:		**Departure Time (24 hr):**
Polling Center:		**Clustered Precinct #:**
# of precincts at clustered precinct:	**# of registered voters at clustered precinct:**	**# of ballots received at clustered precinct:**

		YES	NO	N/A
	OUTSIDE THE POLLING CENTER/CLUSTERED PRECINCT			
1	Was the environment around the **polling center** (please check one): ☐ calm ☐ somewhat calm ☐ tense ☐ violent			
2	Are there long lines outside the **precinct**? If YES, describe this line (check one below): ☐ orderly ☐ somewhat orderly ☐ disorderly ☐ very disorderly			
3	Is the **precinct** accessible to all voters, including those with disabilities?			
	INSIDE THE CLUSTERED PRECINCT			
	Note: Questions 4 - 12 require you to speak directly to polling officials and domestic observers. Please do so only when this will not disrupt voting			
4	On what date was the PCOS delivered to the precinct? **MAY ☐☐ 2010**			
5	Who delivered the PCOS to the precinct? _____			
6	Where was the PCOS machine stored prior to delivery to the precinct (check one below)? ☐ COMELEC hub/warehouse ☐ Municipal Treasurer's Office ☐ Other _____			
7	Was a record/chain of custody of the PCOS delivery kept? If YES, who maintained this documentation? ☐ BEI ☐ COMELEC ☐ Smartmatic ☐ Other _____			
8	On what date was testing and sealing performed? **MAY ☐☐ 2010**			
9	Were there any problems with the PCOS during testing and sealing? (If YES, please indicate in comments)			
10	Who has been watching the PCOS since testing and sealing took place (select all that apply)? ☐ PPCRV ☐ Other Poll Watchers ☐ PNP ☐ Political Party/Candidate reps ☐ BEI ☐ Other _____			
11	Are all members of the BEI present and accredited? If NO, who was absent/not accredited (check all that apply)? ☐ BEI Chair ☐ Poll Clerk ☐ Support Staff ☐ IT-capable BEI member			
12	Is a PCOS Technician present at the polling center?			
	OPENING THE PCOS BOX			
13	Is the PCOS case sealed?			
14	Do the numbers on the seal match the serial number recorded during testing and sealing?			
15	Is the package of ballots sealed?			
16	Have the correct ballots been delivered to the precinct?			
17	Is the ballot box shown to be locked and empty?			
18	Are all the correct materials inside the PCOS box? If NO, what was missing (check all that apply)? ☐ Checklist of contents ☐ PCOS (w/ correct serial number) ☐ Envelope with spare iButton ☐ Power cord ☐ PINs for BEIs ☐ 2 copies of testing and sealing minutes ☐ 3 thermal paper rolls ☐ Other _____			
19	Where is the transmission device for this precinct located? ☐ Inside precinct ☐ At another precinct in the polling center ☐ Other _____			
20	What type of transmission device will be used? ☐ Modem ☐ BGAN ☐ Other _____			
21	Upon removing the PCOS from the box, did the BEI complete the following procedures:			
	a. Break printer cover seal and remove iButton key?			
	b. Leave memory card slots and transmission ports sealed?			
	c. Install PCOS on ballot box?			
	d. Connect battery and plug in power cord?			
	PCOS SET UP	**YES**	**NO**	**N/A**
22	Did the BEI chair enter the iButton key and select 'Open Voting"?			
23	Did two members of the BEI enter their PINs?			
24	Did PCOS perform diagnostics successfully?			
25	Did the BEI print, sign and thumbprint the zero reports and put them in the corresponding envelopes?			
26	Does the PCOS screen indicate 'Ballots Cast: 0"?			

27	At any time during set up, did anyone connect an external device (modem, etc.) to the PCOS machine?				
28	Is the PCOS machine positioned:				
	a. With enough distance to ensure voter privacy?				
	b. As to be accessible to disabled voters?				
29	Did the precinct open on time? If NO, please check one of the following: ☐ 07:00 - 07:15 ☐ 07:15 - 7:30 ☐ 7:30 - 8:00 ☐ 8:00 - 9:00 ☐ after 9:00 ☐ did not open today				
	If precinct did not open on time, please check one of the following reasons that explains why it opened late: ☐ Polling staff/lack of understanding of procedures ☐ Insufficient/missing materials ☐ Insufficient number of polling staff ☐ Insecurity ☐ Other _____				
30	Did the BEI encounter any problems during setup of the PCOS? If YES, please describe in comments, explaining what issue arose and how long it took to resolve the issue.				
31	If you answered YES to Question 30, which of the following occurred (check all that apply): ☐ BEI resolved issue on its own ☐ PCOS Technician resolved issue with no PCOS replacement ☐ PCOS Technician replaced PCOS ☐ Manual voting took place				
	OTHER PERSONS PRESENT				
32	Were domestic observers present? If so, from which organizations (check all that apply)? ☐ PPCRV ☐ NAMFREL ☐ Kontra Daya ☐ Other _____				
33	Were political party agents present? If so, from which parties (check all that apply)? ☐ Liberal ☐ Nacionalista ☐ NPC ☐ Lakas Kampi CMD ☐ PMP ☐ Other _____				
	OFFICIAL COMPLAINTS				
34	Were any objections or complaints related to the use of the PCOS machines reported to BEI staff?				
35	If objections or complaints reported to BEI staff, was staff responsive to these complaints?				
	OVERALL ASSESSMENT OF OPENING PROCESS				
Instructions for this Section: Put an 'X' next to the statement that best describes your assessment of the opening process for this precinct. If your response is "poor" or "very poor," please elaborate in comments.					
Very Good - No significant incidents or irregularities					
Good - A few incidents or some minor irregularities, but none that had a significant effect on the integrity of the process					
Poor - Incidents or irregularities that significantly affected the integrity of the process					
Very Poor - Incidents or irregularities of such magnitude that the integrity of the process is in doubt.					
	COMMENTS				
Instructions: Please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/ or attach additional sheets of paper to the report form.					

Voting

THE CARTER CENTER

PHILIPPINES GENERAL ELECTION MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):**
Barangay:		**Departure Time (24 hr):**
Polling Center:		**Clustered Precinct #:**
# of precincts at clustered precinct:	**# of registered voters at clustered precinct:**	**# of ballots received at clustered precinct:**

		YES	NO	N/A
	OUTSIDE THE POLLING CENTER/CLUSTERED PRECINCT			
1	Was the environment around the **polling center** (please check one): ☐ calm ☐ somewhat calm ☐ tense ☐ violent			
2	Are there long lines outside the **precinct**? If YES, describe this line (check one below): ☐ orderly ☐ somewhat orderly ☐ disorderly ☐ very disorderly			
3	Is the **precinct** accessible to all voters, including those with disabilities?			
	INSIDE THE CLUSTERED PRECINCT			
	Note: Questions 4 - 12 require you to speak directly to polling officials and domestic observers. Please do so only when this will not disrupt voting			
4	On what date was the PCOS delivered to the precinct? **MAY** ☐☐ **2010**			
5	Who delivered the PCOS to the precinct? _____			
6	Where was the PCOS machine stored prior to delivery to the precinct (check one below)? ☐ COMELEC hub/warehouse ☐ Municipal Treasurer's Office ☐ Other _____			
7	Was a record/chain of custody of the PCOS delivery kept? If YES, who maintained this documentation? ☐ BEI ☐ COMELEC ☐ Smartmatic ☐ Other _____			
8	On what date was testing and sealing performed? **MAY** ☐☐ **2010**			
9	Were there any problems with the PCOS during testing and sealing? (If YES, please indicate in comments)			
10	Who has been watching the PCOS since testing and sealing took place (select all that apply)? ☐ PPCRV ☐ Other Poll Watchers ☐ PNP ☐ Political Party/Candidate reps ☐ BEI ☐ Other _____			
11	Are all members of the BEI present and accredited? If NO, who was absent/not accredited (check all that apply)? ☐ BEI Chair ☐ Poll Clerk ☐ Support Staff ☐ IT-capable BEI member			
12	Is a PCOS Technician present at the polling center?			
	PCOS SET UP			
13	Is the PCOS connected to: ☐ Power cord ☐ Battery ☐ Both			
14	Are the memory card slots closed and sealed?			
15	Are the transmission ports closed and sealed?			
16	Is the PCOS machine positioned:			
	a. With enough distance to ensure voter privacy?			
	b. As to be accessible to disabled voters?			
	VOTING PROCESS			
17	Does the BEI instruct voters how to fill out the ballots correctly?			
18	Does the BEI use the UV lamp to demonstrate ballot authenticity to the voter?			
19	Do voters use the secrecy folder effectively when feeding the ballots into the PCOS?			
20	Does the PCOS display "CONGRATULATIONS YOUR VOTE HAS BEEN REGISTERED" after accepting ballots?			

		YES	NO	N/A
21	How long, on average, does it take each voter to mark their ballot and feed it through the PCOS successfully? (Observe 5-10 voters and take an average) _____ minutes			
22	How many times, on average, do voters attempt to feed the ballot before it is accepted by the PCOS? ☐ 1 ☐ 2 ☐ 3 ☐ 4			

	Did any of the following take place (please count):	Reported to our observers	Observed	YES	NO	N/A
23	a. Ambiguous marks (ie. less than 50% of oval shaded):					
	b. Misread ballot (ie. inserted incorrectly):					
	c. Invalid ballot (ie. wrong precinct):					
	d. Scanner/paper jams:					

	f. Other _____:					
24	Does the BEI explain to voters how to handle returned ballots?					
25	Is voter privacy maintained when ballots are returned by the PCOS?					
26	Did you observe any disabled voters casting ballots?					
	If YES, did they receive assistance in voting?					
27	While you were present in the precinct, approximately how many voters cast ballots? ☐ 0-10 ☐ 11-30 ☐ 31-50 ☐ more than 50					
28	Did you observe any serious problems with the PCOS during voting? If YES, please describe in the comments, explaining what issue arose and how long it took to resolve the issue.					
29	If you answered YES to Question 28, which of the following occurred (check all that apply): ☐ BEI resolved issue on its own ☐ PCOS Technician resolved issue with no PCOS replacement ☐ PCOS Technician replaced PCOS ☐ Manual voting took place					
	OTHER PERSONS PRESENT					
30	Were domestic observers present? If so, from which organizations (check all that apply)? ☐ PPCRV ☐ NAMFREL ☐ Kontra Daya ☐ Other _____					
31	Were political party agents present? If so, from which parties (check all that apply)? ☐ Liberal ☐ Nacionalista ☐ NPC ☐ Lakas Kampi CMD ☐ PMP ☐ Other _____					
	OFFICIAL COMPLAINTS					
32	Were any objections or complaints related to the use of the PCOS machines reported to BEI staff?					
33	If objections or complaints reported to BEI staff, was staff responsive to these complaints?					
	OVERALL ASSESSMENT OF VOTING PROCESS					
Instructions for this Section: Put an 'X' next to the statement that best describes your assessment of the election environment and voting process for this precinct. If your response is "poor" or "very poor," it is important that you provide further explanation in the comments section.						
Very Good - No significant incidents or irregularities						
Good - A few incidents or some minor irregularities, but none that had a significant effect on the integrity of the process						
Poor - Incidents or irregularities that significantly affected the integrity of the process						
Very Poor - Incidents or irregularities of such magnitude that the integrity of the process is in doubt.						
	COMMENTS					
Instructions: Please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/ or attach additional sheets of paper to the report form.						

Closing

THE CARTER CENTER

PHILIPPINES
GENERAL ELECTION
MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):** ☐☐:☐☐
Barangay:		**Departure Time (24 hr):** ☐☐:☐☐
Polling Center:		**Clustered Precinct #:** ☐☐☐☐
# of precincts at clustered precinct:	**# of registered voters at clustered precinct:**	**# of ballots received at clustered precinct:**

		YES	NO	N/A
	CLOSE OF POLLS			
1	Was this precinct selected for a random manual audit?			
2	How many voters were in line at 6pm? ☐☐☐☐			
3	Were all voters in line within 30 meters of the precinct at 6pm allowed to vote?			
4	Time last ballot cast: ☐☐:☐☐ 'BALLOTS CAST' displayed on PCOS LCD at closing: ☐☐☐☐			
	ELECTION RETURNS			
5	Did the BEI Chair tap their iButton key and close voting?			
6	Did the BEI Chair decline the option to apply their digital signature when prompted by the PCOS?			
7	Did the PCOS print 8 copies of the national returns, followed by the local returns?			
8	Does the number of ballots cast on the election return match the number of ballots cast on the LCD screen at close?			
9	Were the returns signed and thumbprinted by the BEI and watchers and placed in the appropriate envelopes?			
10	Did the poll clerk post a copy of the ER in the premises? (Please take a picture of the results if possible)			
	TRANSMISSION			
11	Did the BEI Chair attach the transmission device without difficulty? (select which device was used): ☐ Modem ☐ Broadband Global Area Network (BGAN) ☐ Other _____			
12	How many attempts were made to transmit results successfully			
	Municipal/City Board of Canvassers ☐ 1 ☐ 2 ☐ 3 ☐ Failed to transmit			
	COMELEC Central Server ☐ 1 ☐ 2 ☐ 3 ☐ Failed to transmit			
	KBP/Citizens Arm/Parties ☐ 1 ☐ 2 ☐ 3 ☐ Failed to transmit			
13	After disconnecting the transmission medium, did the PCOS print a transmission report?			
	CLOSING PROCEDURES			
14	Did the PCOS print 22 copies of the national and local returns?			
15	Did the PCOS print 2 copies of the statistics report and 1 audit log?			
16	At at anytime during the printing process, was the thermal paper replaced?			
17	Did the BEI and watchers sign the returns and place in appropriate envelopes?			
18	Did the PCOS LCD screen display 'automatic back up and write protect' of the election data?			
19	Did the PPCRV obtain 2 copies of the ER and a statistics report?			
20	Were the following items placed in the ballot box? ☐ **Printed election returns** ☐ Copies of BEI minutes ☐ Torn half of unused ballots ☐ Rejected ballots			
21	Did the BEI Chair seal the ballot box with a seal and padlocks?			
22	Was **the PCOS** turned over to the support technician in the polling center?			
23	Were the following materials prepared for delivery to the Election Officer at the Board of Canvassers? ☐ Envelope containing **initialization/zero report, audit log, stats report** ☐ Envelope containing copies of **election returns for BOCs and COMELEC** ☐ Voters lists, book of voters, torn half of unused ballots, ballot box keys, minutes, rejected ballots			
24	Was **the main memory card** of the PCOS placed inside an envelope labeled 'Transmitted' or 'Not Transmitted' and delivered to the Reception and Custody Group (RCG) for the Board of Canvassers?			
25	Did representatives from the following accompanied the BEI to deliver the materials (check all that apply)? ☐ PPCRV ☐ PNP/AFP ☐ Political party/candidate representatives ☐ Other _____			
26	What time did the BEI leave the precinct with the election materials? ☐☐:☐☐			
		YES	**NO**	**N/A**
27	Did you observe any serious problems with the PCOS during closing and transmission? If YES, please describe in the comments, explaining what issue arose and how long it took to resolve the issue.			
28	If you answered YES to Question 27, which of the following occurred (check all that apply): ☐ BEI resolved issue on its own ☐ PCOS technician resolved issue with no PCOS replacement ☐ PCOS Technician replaced PCOS ☐ Moved to another PCOS for counting/transm. ☐ Manual count took place			
	OTHER PERSONS PRESENT			
29	Were domestic observers present? If so, from which organizations (check all that apply)? ☐ PPCRV ☐ NAMFREL ☐ Kontra Daya ☐ Other _____			
30	Were political party agents present? If so, from which parties (check all that apply)? ☐ Liberal ☐ Nacionalista ☐ NPC ☐ Lakas Kampi CMD ☐ PMP ☐ Other _____			

OFFICIAL COMPLAINTS				
31	Were any objections or complaints related to the closing of the PCOS machines reported to BEI staff?			
32	If objections or complaints reported to BEI staff, was staff responsive to these complaints?			
OVERALL ASSESSMENT OF CLOSING PROCESS				
Instructions for this Section: Put an 'X' next to the statement that best describes your assessment of the election environment and closing process for this precinct. If your response is "poor" or "very poor," it is important that you provide further explanation in the comments section.				
Very Good - No significant incidents or irregularities				
Good - A few incidents or some minor irregularities, but none that had a significant effect on the integrity of the process				
Poor - Incidents or irregularities that significantly affected the integrity of the process				
Very Poor - Incidents or irregularities of such magnitude that the integrity of the process is in doubt.				
COMMENTS				
Instructions: Please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/ or attach additional sheets of paper to the report form.				

Random Manual Audit

THE CARTER CENTER

PHILIPPINES GENERAL ELECTION MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):** ☐☐:☐☐
Barangay:		**Departure Time (24 hr):** ☐☐:☐☐
Polling Center:		**Clustered Precinct #:** ☐☐☐☐
# of precincts at clustered precinct:	**# of registered voters at clustered precinct:**	

		YES	NO	N/A
	RMAT TEAM - BEFORE END OF VOTING			
1	At what time did the Random Manual Audit Team (RMAT) arrive at the precinct? ☐☐:☐☐			
2	How was the RMAT informed which precinct they would be auditing? _____			
3	Upon arrival at the precinct, did the RMAT inform the BEI?			
4	Was the RMAT in a separate room while voting and counting was taking place?			
	TRANSFER AND COUNTING OF BALLOTS			
5	At what time did the RMAT take custody of the ballot box? ☐☐:☐☐			
6	Did the BEI leave the precinct after handover?			
7	Was the ballot box closed with a seal and 3 padlocks?			
	If YES, did the serial numbers match those recorded in the minutes retrieved from the ballot box?			
8	Did the number of ballots retrieved from the ballot box match the number recorded in the BEI minutes?			
	If NO, did the RMAT recount the ballots?			
9	If, after recounting, the ballots still did not match, did the RMAT complete the following: ☐ return ballots to box ☐ randomly remove correct number of excess ballots ☐ place in sealed envelope			
	APPRECIATION OF BALLOTS			
10	Did the RMAT position themselves as to give watchers and the public an unimpeded view of the ballot being read, and the Audit Return and Tally Boards being accomplished?			
11	Did the RMAT Chair announce the votes cast for President, VP, House of Representatives, Governor and Mayor?			
12	Did the RMAT Secretary and Member record each vote by a single line in the Audit Return and Tally Board?			
13	When counting ballots, did the RMAT:			
14	**Count** checkmarks, x's, partially shaded ovals, etc?			
15	**Reject** overvotes?			
16	**Reject** unshaded ovals with 'voter intent' marks (ie. Candidate name circled)?			
17	Did you observe any disagreements among the RMAT over how to interpret marks? If YES, please describe in comments.			
	CLOSING			
18	After all ballots were read, did the Secretary record, in words and figures, the total number of votes obtained by each candidate in the Audit Return and Tally Board?			
19	Did the Chair enter the AES (automated election system) and RMA results for the correct races?			
20	Did the RMAT note down the variance and probable reasons for the variance? (If YES, please note the variance and probable reasons in the comments.)			
21	Did the Chair immediately notify the Provincial Election Supervisor (PES) of the RMA results? If NO, how long after the RMA was the PES notified? _____			
22	Did the RMAT return all materials to the ballot box? If NO, what was missing? ☐ All BEI reports, documents, forms, minutes ☐ Audit Return & Tally Board in sealed envelope ☐ Ballots			
23	Did the BEI Chair seal the ballot box with a seal and padlocks?			
24	Did representatives from the following accompany the BEI to deliver the materials (check all that apply)? ☐ PPCRV ☐ PNP ☐ Political party/candidate representatives ☐ Other _____			
25	What time did the BEI leave the precinct with the election materials? ☐☐:☐☐			
	OTHER PERSONS PRESENT			
26	Were domestic observers present? If so, from which organizations (check all that apply)? ☐ PPCRV ☐ NAMFREL ☐ Kontra Daya ☐ Other _____			
27	Were political party agents present? If so, from which parties (check all that apply)? ☐ Liberal ☐ Nacionalista ☐ NPC ☐ Lakas Kampi CMD ☐ PMP ☐ Other _____			
	COMMENTS			

Instructions: Please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/or attach additional sheets of paper to the report form.

Board of Canvassers

THE CARTER CENTER

PHILIPPINES GENERAL ELECTION MAY 10 2010

Observer Team Number:		**Date (mm/dd):**
City/Muni.:	**Province:**	**Arrival Time (24hr):** ☐☐:☐☐
BOC Level: ☐ Municipal/City ☐ District ☐ Provincial ☐ National		**Departure Time (24 hr):** ☐☐:☐☐
# of clustered precincts/BOCs reporting to this BOC:	**How many attempts were made at your BEI before a successful transmission to the M/CBOC was made?** ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Failed to transmit	

		YES	NO	N/A
	OUTSIDE THE BOC			
1	Was the environment around the BOC (please check one): ☐ calm ☐ somewhat calm ☐ tense ☐ violent			
2	Are there long lines outside the BOC? If YES, describe this line (check one below): ☐ orderly ☐ somewhat orderly ☐ disorderly ☐ very disorderly			
	HANDOVER OF ELECTION MATERIALS			
3	At what time did you observe the BEI handing over the envelope labeled 'Transmitted' or 'Not Transmitted'? ☐☐:☐☐			
4	Did the Reception and Custody Group (RCG) note the serial number and precinct of the envelope?			
5	**If your results were not transmitted electronically from the BEI**, did the RCG forward the envelope labeled 'Not Transmitted' to the BOC?			
	Did you observe the RCG forwarding *other* envelopes labeled 'untransmitted' to the BOC?			
	INSIDE THE BOC			
6	Is the BOC laptop attached to a projector displaying the results on a large screen?			
	If NO, are watchers able to see the laptop screen?			
7	Please select which transmission device was connected to the laptop: ☐ USB Modem ☐ GPRS Modem ☐ Broadband Global Area Network (BGAN) ☐ Other _____			
	MONITORING RESULTS			
8	If your results were **successfully transmitted** from the BEI, were they already displayed in the canvassing system?			
9	If your results were **not transmitted** from the BEI, at what time did they appear in the canvassing system? (If they did not appear while you were at the BOC, please mark 'DNA.) ☐☐:☐☐			
10	Were the results 100% accurate? If YES, please indicate which method you used to verify: ☐ Photo taken of election returns at precinct ☐ PPRCV ☐ BEI ☐ Other _____			
11	Did you observe any results being entered manually?			
	If YES, were the correct procedures followed (see attached page)?			
12	How often did the CCS operator update the monitoring option? _____			
	TRANSMISSION (if you are not observing transmission, skip to question 25)			
13	If less than 100% of results were received when transmission took place, did the BOC obtain permission to transmit?			
14	Did the BOC successfully transmit all results (monitor will display "SUCCESSFULLY TRANSMITTED")?			
	PRINTING OF COCs, SOV, COCPs			
15	Did the BOC print 22 copies of the Certificate of Canvass and 4 Statement of Votes?			
16	Did the BOC print a copy of the Certificate of Canvass and Proclamation for each position?			
17	In the event of a tie, were lots drawn and the order of winners moved on the screen in a manner transparent to the public and watchers?			
18	Did the BOC print an audit log?			
19	Did the BEI and watchers sign the documents and place in appropriate envelopes?			
20	Did the BOC back up the CCS files to 3 CDs?			
21	Was 1 copy of the CD placed inside an envelope labeled 'Transmitted' or 'Not Transmitted'			
22	Was the laptop and equipment turned over to the support technician in the polling center?			
23	What time did the BOC chair leave the precinct to deliver the materials to the PBOC/NBOC? ☐☐:☐☐			
	OTHER PERSONS PRESENT	**YES**	**NO**	**N/A**
24	Were domestic observers present? If so, from which organizations (check all that apply)? ☐ PPCRV ☐ NAMFREL ☐ Kontra Daya ☐ Other _____			
25	Were political party agents present? If so, from which parties (check all that apply)? ☐ Liberal ☐ Nacionalista ☐ NPC ☐ Lakas Kampi CMD ☐ PMP ☐ Other _____			
	OFFICIAL COMPLAINTS			
26	Were any objections or complaints related to the CCS reported to BOC staff?			
27	If objections or complaints reported to BOC staff, was staff responsive to these complaints?			
	OVERALL ASSESSMENT OF CANVASSING			

28	Did you observe any serious problems during canvassing? If YES, please describe in the comments, explaining what issue arose and how long it took to resolve the issue.			
29	If you answered YES to Question 28, which of the following occurred (check all that apply): ☐ BOC resolved issue on its own ☐ BOC technician resolved issue with no CCS replacement ☐ BOC Technician replaced BOC ☐ Issue was not resolved			
COMMENTS				
Instructions: In the box below, please provide details of any complaints or irregularities that occurred at the polling station that you observed. If additional space is required, please continue to the back of the form and/or attach additional sheets of paper to the report form.				

APPENDIX C: DRAFT GUIDELINES ON OBSERVING ELECTRONIC VOTING

C

Fifth Meeting on the Implementation of the Declaration of Principles for International Election Observation

The Carter Center—Atlanta, Georgia
October 13–14, 2010

Observing Electronic Voting[108]

Revised November 2010[109]

The Declaration of Principles for International Election Observation (Declaration) provides some guidance for observers on issues related to the technology, most notably in paragraphs 12 (b), 14, and 15, which outline the need for international observers, domestic monitors, and political contestants to have access to all aspects of the electoral process, including the functioning of electronic and electoral technologies.

However, this guidance is limited. The purpose of this discussion paper, therefore, is to expand upon the provisions of the Declaration related to e-voting and to provide a set of draft principles on observation of e-voting to guide observer organizations in their efforts to develop methodologies for the observation and assessment of elections with an e-voting component. The discussion paper draws on documents and handbooks previously published by various international organizations (see Appendix G).

Background

E-voting, while controversial, continues to receive attention, and new technologies are being used or are under consideration for use in a number

[108] This document was prepared by Jonathan Stonestreet and Avery Davis-Roberts, on behalf of The Carter Center, and incorporates discussions from past Declaration of Principles implementation meetings as well as key points included in the handbooks and efforts of other endorsing organizations.

[109] Revisions were made based on comments received during the Fifth Meeting on the Implementation of the Declaration of Principles for International Election Observation, Oct. 13–14, 2010, as well as comments received from meeting participants between Oct. 15 and Dec. 1, 2010.

of countries around the world.[110] On the one hand, these technologies[111] have the potential to facilitate and improve electoral processes and are adopted for a number of reasons, including the perceived advantages in increasing voter access, the possibility of decreased costs (in the long term), facilitation of the conduct of simultaneous or complex elections, earlier announcement of results, potentially limiting opportunities for retail fraud, and reducing errors by both voters and poll workers.

On the other hand, however, these technologies pose risks to the integrity of the electoral process that can quickly erode public confidence. Such risks include the possibility of technical failure, external interference with the system, internal malfeasance, and the loss of oversight by and accountability of the election management bodies. These threats have the potential to violate fundamental electoral rights and to subvert the will of the people on a large scale and in an undetectable manner.

Faced with the reality of e-voting technologies, observers must respond to the very real challenges they pose to observation itself. There are aspects of e-voting systems that are inherently unobservable. While observers can directly observe that the secrecy of the vote is respected, that the ballot is cast, and that vote counting takes place according to procedures in paper-based elections, this is not always the case in e-enabled elections. In addition, intellectual property concerns and the need to ensure the security of the system may prevent observers (both international and domestic) from having full access to it.

The introduction of e-voting also poses quite practical challenges. It requires specialized knowledge and technical expertise of the different technologies and methods of conducting e-voting that are used. Like all technologies, automated voting solutions will continue to evolve and will do so rapidly, and observers likewise will have to continue to develop and adapt their observation methodologies.

While the election management bodies (EMBs) and other relevant authorities have a special responsibility to balance the pros and cons of introducing e-voting technologies, it is critical that the electoral process continue to belong to the citizens of the country upon whose will the authority of government is based. Election observation organizations, therefore, have a responsibility to respond to the challenges that such technologies pose to our work so that

[110] E-voting can be defined as the use of electronic means to cast, record, and count votes.

[111] E-voting devices may include those in polling stations, Internet voting, mixed systems, voting by mobile telephone, etc. Within the category of voting machines in polling stations, there are DREs, DRE devices with a VVPAT, optical scan devices, and others. In some of these systems, votes are recorded on each voting machine; in others, all votes are stored on a single device in the polling station; and in some, the votes are sent to a central server exterior to the polling station.

we may continue to promote the rights of citizens to genuine democratic elections. Endorsers of the Declaration must ensure that observation continues to serve as an effective tool to promote the transparency, credibility, and integrity of electoral processes, regardless of the technology used.

Finally, although international obligations and commitments for democratic elections apply to electronic as well as paper-based elections, there are few international obligations and commitments specific to e-voting that would provide a clear basis for assessment (for instance, regarding requirements for a VVPAT, audits, open source code, and certification).[112] However, in addition to those obligations and commitments that do exist, a number of critical, overarching principles may be identified based on the collective experience of international election observation organizations that are relevant to the introduction of such technologies, regardless of the specificities of the system. These include:

- inclusivity of the public and all stakeholders in the process of choosing and using the system and ownership of the electoral process as a whole by the citizenry
- proportionality of introducing a new technology to solve problems that would otherwise not have existed
- transparency in all aspects of the decision-making process with regard to the technology
- accountability for the impact of the technology on the integrity of the electoral process and for the average voter's understanding of what kind of personal data is processed by the system
- accuracy and speed in the voting and vote counting process
- sustainability and cost-effectiveness of the system based on the realities of the country in which it is being introduced
- security of the system

In addition, collective experience has shown that there are a number of good practices that, if implemented in the introduction and use of the technology, can help to uphold these principles. This document goes some way to articulate these principles and practices.

Discussion of E-voting at Previous Meetings

The observation of e-voting was discussed at the first and second meetings on the Implementation of the Declaration of Principles, hosted by the Commonwealth Secretariat in London and the Organization of American States

[112] The CoE 2004 Recommendation on Legal, Operational, and Technical Standards for E-Voting sets nonbinding standards for its member states.

in Washington, D.C., respectively. In each case, the challenges presented by the use of election technologies, both for the electoral process itself and for election observation, were raised. In addition, the earlier meetings also considered the impact of e-voting on the practicalities of observation, for example the impact on the duration of the mission and how to best ensure that members of the EOM have the skills necessary to assess electronic electoral technologies.

In previous meetings, some initial recommendations were made on how endorsers of the Declaration of Principles might begin to address the challenges posed by the use of e-voting technologies. First and foremost among these recommendations was the suggestion that groups continue to harmonize their approaches (per Art. 19 of the Declaration) to the observation of e-voting. In Washington, steps were taken toward highlighting points of agreement regarding the use and observation of e-voting. This conversation was continued during the working session at the Fifth Meeting on the Implementation of the Declaration of Principles for International Election Observation.

Principles for Observing E-voting

The following draft principles on observing e-voting complement and expand upon the text of the Declaration of Principles, which remains fully applicable for elections involving the use of e-voting. Points 1–8 focus on the broad responsibilities of the state when introducing and using an e-voting system. Subsequent points provide guidance to international election observation organizations on issues to be considered when observing e-enabled elections.

Guiding Principles on Use of E-voting Technologies in Controlled Environments

1. The introduction of technology into the electoral process should be a response to an identified need and be to the benefit not only of the election administrators but also the voters and candidates. Before introducing new technologies into the electoral process, states should consider ways in which these needs may be met using alternative mechanisms (i.e., electoral reforms) that may be more cost-effective and beneficial to voters and candidates.
2. If a state decides to introduce e-voting, this process should be gradual and undertaken only after thorough public consideration of the potential risks, legal implications, and technical issues involved in its introduction. Emphasis should be placed on ensuring an inclusive and transparent public debate on the technology prior to its introduction and throughout its use. In addition, there should be broad agreement among political parties regarding the introduction of e-voting so as to promote public confidence in the election process.

3. Elections conducted by means of e-voting must respect all international obligations and commitments for democratic elections, including the secrecy of the ballot, the ability of citizens to vote free from intimidation or coercion, the honest and accurate reporting of results, the equality and universality of the vote, and nondiscrimination against political parties or candidates contesting the election.[113] Systems should be designed with these obligations, commitments, and fundamental rights in mind and should provide safeguards to protect them from technical or other threats.

4. Given the complexities of e-voting and the potential risks to electoral integrity, it is important for there to be public confidence in the EMB before introducing e-voting, and the EMB should ensure that it has the technical capacity to implement an e-enabled election. Careful consideration also should be given to the cost and sustainability of the election technologies by the EMB and others.

5. Voter education is essential to the effective exercise of voting rights. When new technologies are introduced into the electoral process, it is essential that voters receive adequate education to ensure they can use the voting technologies to cast their ballot.

6. All aspects of e-voting should be independently and publicly verifiable. Steps should be taken to ensure that it is possible to verify that the secrecy of the vote has been maintained during the use of the technology and that election results are an accurate representation of votes cast by the electors.

   Thorough and consistent verification of the secrecy and accuracy of the vote is the responsibility of official bodies. Verification processes should be completely open to citizens and election stakeholders as well as to international and domestic observers and should provide evidence that the system has functioned as purported. International and domestic observers should have full access to any audit or other reports or protocols issued as part of the verification process and be permitted to make copies of these documents.

7. Verified paper trails are the most effective means of ensuring electoral integrity with respect to the storing and counting of ballots, especially since software alone cannot reliably and effectively guarantee that the votes have been accurately counted. The paper record may be produced by the voter and recorded by the electronic device (i.e., optical scan technologies), or it may be printed by the device and verified by the voter (i.e., VVPAT). In

[113] Declaration of Principles for International Election Observation (DoP), para. 3 "The will of the people of a country is the basis for the authority of government, and that will must be determined through genuine periodic elections, which guarantee the right and opportunity to vote freely and to be elected fairly through universal and equal suffrage by secret ballot or equivalent free voting procedures, the results of which are accurately counted, announced, and respected."

either case, the paper record should be retained in the polling station for immediate review and then securely stored for subsequent audits that take place prior to the announcement of official results, if needed, and pending the conclusion of any potential complaints.

Such a system can ensure the integrity of the electronic results only if the paper record is counted as a cross-check against the electronic results or, at a minimum, if a statistically valid and randomly selected sample of the record is audited prior to the announcement of results.

Adding a paper record can, however, increase the cost and complexity of the process as well as the potential for error, technical failures, and discrepancies in results.

8. The legal framework should determine the legal relationship between electronic and paper records as well as what constitutes the legal record of the vote (the electronic ballot vs. a paper ballot). It should provide clear and consistent guidance on the steps to be taken in the event that verification processes find discrepancies or anomalies between election results and other records of the vote. In addition, open and fair dispute resolution processes that provide effective remedy for rights violations resulting from the use of the technology should be in place.

Guiding Principles on the Observation of E-voting Technologies

9. Observers should have unimpeded access to all stages of the e-voting process without discrimination. This includes access to the certification process, testing, and audits and to all reports and documentation on the system. Election observation organizations must not be required to enter into confidentiality or other nondisclosure agreements in order to obtain access.[114]

10. As in all elections, the international election observation mission must follow the laws of the country and must not interfere in the election process.[115] In this context, international election observation missions may examine and test devices and software outside the voting period for the purposes of understanding their design and functioning, but they should not attempt to reverse engineer, hack, or otherwise tamper with any device or software.

[114] DoP, para. 12(b) "Guarantees unimpeded access of the international election observer mission to all stages of the election process and all election technologies, including electronic technologies, the certification processes for e-voting, and other technologies, without requiring election observation missions to enter into confidentiality or other nondisclosure agreements concerning technologies or election processes."

[115] DoP para. 9 "International election observation missions must respect the laws of the host country…" DoP para. 4 "International election observation should offer recommendations for improving the integrity of and effectiveness of the electoral and related processes, while not interfering in and thus hindering such processes."

11. International election observation missions should not certify electronic election technologies and should make clear to the authorities of the host country and the EMB that such responsibilities are beyond the mandate of international election observers, which is to provide an impartial assessment of the electoral process as a whole.[116]

12. Partisan[117] and nonpartisan domestic observers and other civil society organizations as well as the media play a crucial role in long-term assessment and monitoring of elections that use e-voting, especially as they are present before the deployment of international election observation missions. International election observation missions should assess the extent to which domestic organizations can meaningfully observe e-voting, are granted access to all parts of the process, are free to make statements regarding the process, and are able to respond to the potential challenges posed by e-voting.[118]

13. Internet voting poses additional challenges to observation, because, like postal voting, it generally occurs in an uncontrolled environment, such as people's homes, where it is difficult to ensure the secrecy of the vote and that voters have been able to express their choices freely. International organizations invited to deploy a mission in a country in which remote e-voting (i.e., Internet voting) is used should carefully consider the value of their presence versus the risks of legitimizing a potentially nontransparent process.[119]

[116] DoP, para. 12(b) "…international election observation missions may not certify technologies as acceptable."

[117] DoP, para. 14 "Political contestants (parties, candidates, and supporters of positions on referenda) have vested interests in the electoral process through their rights to be elected and to participate directly in government. They, therefore, should be allowed to monitor all processes related to elections and observe procedures, including among other things the functioning of electronic and other electoral technologies inside polling stations, counting centers, and other electoral facilities…"

[118] DoP, para. 16 "Citizens have the right to associate and a right to participate in governmental and public affairs in their country. These rights may be exercised through nongovernmental organizations monitoring all processes related to elections and observing procedures, including among other things the functioning of electronic and other electoral technologies inside polling stations, counting centers, and other electoral facilities… International election observation missions should evaluate and report on whether domestic nonpartisan election monitoring and observation organizations are able, on a nondiscriminatory basis, to conduct their activities without undue restrictions or interference…"

[119] DoP, para. 11 "A decision by any organization to organize an international election observation mission or to explore the possibility of organizing an observation mission does not imply that the organization necessarily deems the election process in the country holding the elections to be credible. An organization should not send an international election observation mission to a country under conditions that make it likely that its presence will be interpreted as giving legitimacy to a clearly undemocratic electoral process, and international election observation missions in any such circumstance should make public statements to ensure that their presence does not imply such legitimacy."

While international election observation missions can assess some aspects of remote e-voting—including context, legal framework, design, certification, testing, voter education, access of domestic observers, and public confidence—they may not be able to reach definitive conclusions about the degree to which the process meets international obligations and commitments for democratic elections. If they choose to deploy a mission in such a context, the mission should include multiple experts with relevant expertise, especially in Internet security where Internet voting is allowed.

14. Organizations conducting international election observation should additionally consider the following as they develop their methodologies for the observation of e-voting:

    a. *The context in which the technology was introduced.* Observers should consider, for example, the reasons for the introduction/use of e-voting, potential advantages over the previous system, the method of choosing the system, and any previous legal challenges. International election observation missions should seek to hear the views of all major political parties, political contestants, civil society organizations, and academics with regard to the introduction and use of e-voting technologies and the degree to which there is public confidence in the system.

    b. *The extent to which the legal framework adequately regulates the e-voting process.* When reviewing the legal framework, observation missions should determine whether it includes adequate provision for certification of the technology, data protection, audits, access by observers and political contestants, recounts, and adjudication of disputes and potential remedies. Consideration also should be given to how changes to the system are accommodated in law and in certification procedures.

    c. *The extent to which checks and balances exist.* In addition, observers should consider whether a system of checks and balances exists that, in practice, promotes and strengthens electoral integrity when e-voting technologies are used. Such a system could be, but does not necessarily have to be, regulated by law.

    d. *The degree to which the system upholds international obligations and commitments for democratic elections.* Observers should seek to understand the impact that the hardware, software, and processes of the e-voting system may have on the secrecy of the vote, the protection of voters from intimidation or coercion, and the honest counting of the votes. In addition, observers should consider whether the accurate reporting of results is ensured and can be verified by the host

government and independent third bodies. Observers must understand the security measures in place to protect against potential internal and external threats and should assess the usability of the system, the impact of the technology on ballot design and vice versa, and voter accessibility. The use of an electronic voter register or other electronic technologies should be considered in this context, particularly with respect to secrecy of the vote.

e. *Procurement.* The use of e-voting technologies may increase observer interest in understanding the procurement process. While observers often arrive after procurement is complete, consideration may still be given to the extent to which the process was open and transparent and followed recognized good practice in tendering.

f. *Documentation related to the use of e-voting technologies.* International election observation missions should review official documentation related to the e-voting system as well as reports made by certification and testing authorities. Consideration also should be given to assessments of the system made by others, whether partisan, nonpartisan, academic, or official. International election observer missions must be careful to reach their own conclusions based on the evidence gathered.

g. *The source code.* While it is unlikely that international observers will have the time, resources, or access necessary to conduct a thorough review of the source code, international election observation missions should determine whether domestic observers or others have meaningful access to the source code and have reviewed it and whether it is possible to verify that the reviewed source code is identical to that used on election day.

h. *Certification and testing of e-voting devices.* Certification should be performed by an independent, qualified body. Certification requirements should be carefully written to adequately cover all aspects of the e-voting process, including security against external and internal threats and accessibility for observers. Certification should be done prior to each election after any software or hardware changes have been made to the system. There should be a cutoff point defined, after which no changes to the software should be made. Certification reports should be fully available to international and domestic observation organizations, academics, and other interested parties. Testing should be comprehensive and conducted with adequate time to respond to any errors or anomalies that may arise. Domestic observation organizations should have the opportunity to conduct their own tests.

i. *The role of election management bodies.* Observers should scrutinize the division of responsibility and accountability between election officials and vendors, particularly in cases where the vendor continues to play an active role throughout the electoral process, such as providing technical assistance. The capacity of the EMB at all levels to fulfill its function when implementing an e-enabled election is of paramount importance, and so observers should assess the efficacy of training programs for election officials. In addition, missions should consider the procedures related to e-voting and their implementation before, during, and after election day (e.g., updating, distribution, storage, operation of devices). The accuracy and extent of voter education also should be considered.

j. *Tabulation and reporting of results.* Observers should consider the impact that technologies may have on the tabulation and reporting of results, including the steps taken to ensure that the results reported at each level of tabulation are accurate and open to verification by domestic and international observers and political contestants.

k. *The conduct of verification and audit procedures.* Observers should consider the size, scope, and methods of conducting audits or recounts of any paper records of votes cast during the use of e-voting as well as the means used to determine statistical samples (if used). Observers should have sufficient access to assess such verification and audit processes themselves, but they should also assess the degree to which third parties are able to conduct audits independent of those conducted by the host government. Where appropriate, observers may consider conducting their own audits or other statistical analyses.

l. *Complaints, appeals, or lawsuits concerning the e-voting system.* Electoral dispute resolution processes can be complicated by the introduction of e-voting technologies. Observation of disputes should include consideration of whether, in law and in practice, effective remedies are available to candidates and citizens who seek redress for violations caused by the introduction of the electronic system.

m. *The integration of paper and e-voting systems.* In electoral processes using both paper and e-voting systems, the relationship between the systems may have an effect on citizens' rights and electoral integrity, and observers should be cognizant of this fact in their assessments. This is increasingly important in more sophisticated democracies, where multiple voting channels (postal voting, advance voting, voting abroad, to name a few) are present. The conciliation becomes a major challenge to proper election administration.

n. *Other issues that an election observation mission may identify as significant.* These may include the use of technologies in aspects of the electoral process beyond voting, such as the use of biometric data gathering technologies in the voter registration process.

15. International election observation missions should include relevant experts when e-voting is assessed.[120] In some cases, different aspects of e-voting may require different expertise, and more than one expert may be necessary in order to understand fully the impact of the technology on the electoral and political process. Moreover, given that specialized expertise is required, multiple experts can provide a collective opinion and corroborate facts, thereby enhancing confidence in the assessments and conclusions of the mission regarding e-voting.

16. International election observation missions making assessments of e-voting will do so in accordance with the Declaration of Principles and will base their assessments on international obligations, principles, and commitments for democratic elections.[121]

    In making assessments, international election observation missions should bear in mind that e-voting is only one element of the broader election process, and an election must be assessed in this light. International election missions must report their findings and conclusions fully and impartially, taking care not to overstate or minimize shortcomings.[122] If the mission finds serious shortcomings in an e-voting process, especially in terms of public confidence, transparency, or verifiability, the mission may recommend that the use of e-voting be reconsidered or the technology withdrawn.

[120] DoP, para. 20 "The intergovernmental and international nongovernmental organizations endorsing this Declaration recognize that international election observation missions should include persons of sufficiently diverse political and professional skills and standing and proven integrity to observe and judge processes in light of: … comparative election law and administration practices (including the use of computer and other election technology."

[121] DoP, para. 18 "The intergovernmental and international nongovernmental organizations endorsing this Declaration recognize that substantial progress has been made in establishing standards, principles, and commitments concerning genuine democratic elections; commit themselves to use a statement of such principles in making observations, judgments, and conclusions about the character of elections processes; and pledge to be transparent about the principles and observation methodologies they employ."

[122] DoP, para. 6 "International election observation missions are expected to issue timely, accurate, and impartial statements to the public (including providing copies to electoral authorities and other appropriate national entities), presenting their findings, conclusions, and any appropriate recommendations they determine could help improve election related processes."

17. In line with the commitment to share approaches and harmonize methodologies, international election observation missions will undertake to publish their methodologies on observation of e-voting and will provide sufficient training to long-term and short-term observers.[123]

[123] DoP, para. 19 "The intergovernmental and nongovernmental organizations endorsing this Declaration recognize that there are a variety of credible methodologies for observing election processes and commit to sharing approaches and harmonizing methodologies as appropriate." DoP, para. 21(d) "The intergovernmental and international nongovernmental organizations endorsing this Declaration commit to:… instruct all participants in the election observation mission concerning the methodologies to be employed…"

APPENDIX D: AN OVERVIEW OF VOTING TECHNOLOGIES

D

Direct Recording Electronic Voting Machine (DRE)

DREs are fully computerized systems in which voters complete and cast their ballots in an electronic format. A DRE consists of a software program that provides voters with a digital ballot image, which may be marked by voters either via touch-screen technology or using appropriate machine prompts.

After completion of a ballot, the voter may prompt the machine to cast the ballot. Following appropriate verification procedures,[124] the voter's choice will be recorded via the DRE's internal memory. In order to ensure the security and integrity of such systems, DRE machines commonly require physical sealing of all ports and openings in the machine as well as visual confirmation by observers, polling station staff, and the public that the machine is in no way connected to an external network or the Internet.

Election observers and practitioners increasingly recognize the need for DREs to provide a VVPAT. A VVPAT consists of a paper copy of the voter's choices, which may be reviewed for correctness but must remain in secure possession of the polling station. This VVPAT allows for the conduct of audits to ensure the accuracy of electronic vote tabulations and may serve as the vote of record in election disputes, dependent upon the electoral law.

Internet-Based Voting

Although not widely employed to date, countries have begun exploring the potential of allowing eligible voters to cast their ballot via the Internet. Internet voting may occur either in polling stations or assigned kiosks, where voters are asked to cast their ballots on machines directly connected to the election commission's main server via the Internet, or through remote Internet voting, where voters may cast ballots from any personal computer with an active Internet connection.

Generally, supporters of such technology argue that the increased convenience of being able to vote from any computer will lead to higher voter turnout and in consequence more representative elections. However,

[124] Many DRE machines allow voters to review their choice prior to casting a ballot or require confirmation of the intent to cast.

Internet voting poses questions regarding security, particularly regarding the potential for Internet elections to be subject to hacking or other influences. Additionally, the ability to verify voter identity and thus dissuade voter fraud is significantly decreased by remote Internet voting options. The development of systems for auditing votes absent any securely maintained VVPAT is also of particular importance for countries considering the adoption of Internet voting systems.

Optical Mark Recognition (OMR) Technology

OMR systems are designed to recognize predetermined marks on a physical ballot.[125] Generally, OMR systems require voters to fill in a set of predetermined indicators when designating their choice of candidate or issue.[126] Upon completion, the voter may cast this ballot into an OMR machine, which employs software to read the marks and record the voter's choice in an electronic format. Concerns about OMR technology generally focus on the ability for voters to over- or undervote unknowingly. In addition, concerns exist that ambiguous marks may make votes unreadable to the OMR machine despite the fact that voter intent is clear.[127]

Similarly to DRE machines, OMR technology often requires physical security measures, including the sealing of ports to increase voter confidence. Procedures also often require verification that the OMR system is not attached to any Internet connection or external network until time for vote tabulation, at which time systems may be connected to the Internet to transmit vote counts to predetermined election commission tabulation centers. In OMR systems, the physical ballot marked by voters is retained to serve as a VVPAT in auditing and recount procedures as necessary.

Optical Character Recognition (OCR) Technology

OCR technology is similar to OMR technology. However, OCR systems consist of a computerized program that reads and recognizes written words and figures. Generally, OCR systems consist of a paper ballot that is completed by a voter who then casts the ballot by feeding it into an OCR machine. Such systems are generally used for write-in ballots, where voters are expected to fill in their choice of candidate rather than make a predetermined mark to indicate their candidate preference.

Critically, there is wide recognition that OCR systems are fallible in their ability to recognize written characters. Deviations in handwriting and numbering

[125] A commonly recognized form of OMR technology is the use of "Scantrons" in multiple-choice testing.

[126] In punch-card systems, rather than filling in a set of predetermined markers, voters punch holes to indicate their choices. The OMR machine is thus designed to recognize these vacant spaces as indications of voter choice.

[127] While cognizant of these concerns, observers should remember that over- and undervoting is similarly possible in manual voting processes. If OMR technology is employed, the legal framework should make clear whether manual assessment of voter intent may serve to validate votes that are unreadable by machine.

may increase system failure due to nonrecognition and require increased auditing and review to ensure accuracy. The paper ballots cast by voters may, therefore, necessarily serve as a VVPAT, against which the accuracy of electronically recorded votes may be assessed.

Voting Technologies During Voter Registration

Voting technologies are not limited to election day. In fact, many countries employ voting technologies in the pre-election period, while still using a system of manual balloting on election day. Electronic voter registration systems may include either Internet-based registration or the use of OCR technology to enter voter registration data and match it with relevant biometric data or images of the voter.

Such systems are generally employed as a means of decreasing voter fraud by providing security measures to ensure the identity of eligible voters. However, the use of biometric data in many contexts has presented either obstacles to implementation and institutional capacity or concerns about an infringement of voter secrecy. Where in use, electronic voter registration systems should be considered carefully by observers, to assess the potential impact these systems may play in voter confidence, the deterrence of fraud, and the fulfillment of relevant suffrage rights.

APPENDIX E: ACKNOWLEDGMENTS

E

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APPENDIX F: TERMS AND ABBREVIATIONS

F

CoE	Council of Europe
DoP	Declaration of Principles for International Election Observation
DRE	Direct recording electronic device/equipment
ECOWAS	Economic Community of West African States
EMB	Election management body
EOM	Election observation mission
E-voting	Electronic voting
ICCPR	International Covenant on Civil and Political Rights
LTO	Long-term observer
OCR	Optical character recognition
ODIHR	Office for Democratic Institutions and Human Rights
OMR	Optical mark recognition
OSCE	Organization for Security and Cooperation in Europe
STO	Short-term observer
UN	United Nations
VVPAT	Voter-verified paper trail

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