

SLEIGHT IS RIGHT: CYBER CONTROL AS A NEW BATTLEGROUND FOR AFRICAN ELECTIONS

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ABSTRACT

Sleight of hand in manipulating the computation of results has become the new might for deciding who wins presidential elections. It appears that whoever controls the computation exercises a right to take advantage and win, and whoever loses or relinquishes control of the computation loses the election. As incumbents do not wish to be identified with direct interference or rigging, hacking has become an alternative means. This raises a serious challenge for election management bodies and a new frontier for international observation. As electronic data management has become a key battleground, international observers cannot restrict their monitoring to the manual process alone. However, individual states may have data sensitivity concerns about granting electronic monitoring access to partisan international observers. Institutionalizing internationally agreed protocols that would allow real time monitoring of election management bodies' computer systems by international observers or forensic audits of any stage of the electoral process to investigate interference, manipulation, hacking and counter claims, are now a necessity. At the same time, the extent to which international monitors can be trusted to be non-partisan is of equal importance and could reduce forum shopping over time.

CAMPAIGNING, VOTE-BUYING AND RIGGING all count towards winning elections, which have become sophisticated and complicated over time. We also note from Nazar Boyko and Erik Herron, that the effects of technical parties and partisan election management bodies (EMBs) on voting outcomes have become a real and increasing threat to election administration.¹ Thus, election management demands further measures of scrutiny. The electoral process constituting the main tool for political transitions across the globe has justifiably generated a heightened role for international observers, alongside the unavoidable reality of foreign influence. At the same time, academia has made clear that institutional change in individual states is not driven entirely by local factors but also by regional or international influences.² Susan Hyde's observation of increased scholarly attention to international influences on democratization and the role of international observers remains

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¹ Nazar Boyko and Erik Herron, 'The effects of technical parties and partisan election management bodies (EMBs) on voting outcomes', *Electoral Studies*, 40 (2015), pp. 23-33.

² Kristian Gleditsch and Michael Ward, 'Diffusion and the international context of democratization', *International Organization* 60, 4 (2006), pp. 911-933.

apt.³ Furthermore, Nicholas Kerr and Anna Luhrmann have highlighted the importance of EMB autonomy and media freedom, and their roles or significance in ensuring the integrity and legitimacy of elections for the purposes of maintaining public trust.⁴

Douglas Anglin discussed African elections from the 1990s and the participation of international observer teams, highlighting how their role evolved over emerging political contexts and alongside periodic reappraisals for quality of service.⁵ We find ourselves at a new frontier whereby developments relating to computer hacking pose a major challenge for international monitors who do not as yet have the necessary electronic access to monitor EMB data management processes. As opposition politics have attained vigilance with manual voting processes and compilation of results, incumbents have now resorted to hacking and interfering with EMB central computer systems to ensure that the final results emerge as they wish. This article draws attention to the fact that control over the electronic aggregation process has become a new battleground and decider for who wins an election.

The role of EMBs has always been under the spotlight.⁶ However, the emerging pattern is that whoever has control of the rigging apparatus, in this case the EMB's computer systems, has the upper hand in winning the election, and if unmonitored or unchecked, could win by sleight of hand. The phenomenon poses a challenge for international observers and to what extent they can exert influence on electronic data handling processes within individual states.

International election monitors can provide an objective assessment of the quality of elections; however, they carry their own biases, which also has implications. They may at times endorse fraudulent elections, a phenomenon which has fomented the rise of a shadow market: a supply of lenient monitoring organizations or friendlier monitors. The wide array of monitoring organizations facilitates forum shopping by incumbents to pick and choose their preferred ones.⁷ As Judith Kelley points out, 'no organization is 100 percent credible all the time'⁸ nor has a perfect track record, each with varying propensities to criticize elections. Moreover, they are closely tied to states and are run by intergovernmental organizations, so that 'member states have a significant say in the organizations' international election monitoring activities', as with the European Union for example.⁹ Some intergovernmental organizations such as the Commonwealth of Independent States, the African Union and the Commonwealth Secretariat are less critical of elections than nongovernmental organizations, hence it becomes harder for them to openly condemn fraudulent practices. Therefore, 'the notion that one could deploy monitors to just any election and expect improvements is probably misguided'.¹⁰ As Svitlana Chernykh and Milan Svolik point out, although third party actors such as electoral commissions, courts, local or international monitors play a

³ Susan D. Hyde, 'The observer effect in international politics: Evidence from a natural experiment', *World Politics*, 60, 1 (2007), pp. 37-63.

⁴ Nicholas Kerr and Anna Luhrmann, 'Public trust in manipulated elections: The role of election administration and media freedom', *Electoral Studies*, 50 (2017), pp. 50-67.

⁵ Douglas G. Anglin, 'International election monitoring: The African experience', *African Affairs*, 97, 389 (1998), pp. 471-495.

⁶ Boyko and Herron, 'The effects of technical parties'.

⁷ Judith G. Kelley, *Monitoring democracy: When international election observation works, and why it often fails* (Princeton University Press, Princeton, NJ, 2012).

⁸ Kelley, *Monitoring democracy*, p. 158.

⁹ *Ibid.*, p. 101.

¹⁰ *Ibid.*, p. 99.

mitigating and counterbalancing role, the incumbent's access to and monopoly of electoral results – referred to as the incumbent's informational advantage - is a key political advantage. This advantage underpins rigging motivation and endures the opposition's probing and protest, a posture which even 'limits the credibility of the opposition's threat to confront the incumbent in a post-election protest'.¹¹

The key issue therefore is what happens after the ballots have been cast, in particular the vote aggregation process by the EMB's computer systems and the threat of hacking. Michael Callen and James Long examined whether electoral 'candidates exploit connections to elections officials to add fraudulent votes during the aggregation process'.¹² They note that in a clean election, the photo quick count technique (explored in Afghanistan in 2010), which records the same vote totals both before and after aggregation, ensures that the numbers are identical. Their study concluded that photo quick count is even 'cost-effective relative to traditional international election monitoring' and suggested institutional reforms to improve the effectiveness and sustainability of monitoring.¹³ This throws the ball straight into the court of government institutions or EMBs to make this happen. Photo quick count or its equivalent in other countries can prevent aggregation fraud, but where it is banned, taken out of the equation, or interfered with by a determined incumbent, how does one ensure that the truth prevails in the end? To this end, a further study by Michael Callen and colleagues made clear that 'international observers seldom harness innovations in ICT', and suggested that 'ICT intervention can improve electoral integrity in emerging democracies'.¹⁴

Hence, this article formulates a theoretical framework supported by case studies to highlight the problem of the computational battleground. It points out the necessity for ICT intervention that grants local and international monitors both *de jure* and *de facto* access to all EMB procedures. It suggests adopting an international protocol or procedure that is actionable by all countries or has global applicability, and which can be followed by the international community should any state fall into a disputed election that requires international intervention.

Political stakes, EMB models and potential for political interference in electronic aggregation of election results

Where the political stakes have been very minimal, or where the playing field was already so heavily tilted in favour of the incumbent that it was obvious the incumbent was the winner even before the vote would be held (e.g. Angola, Rwanda, Uganda, Cameroon, Congo-Brazzaville, Equatorial Guinea, Sudan), the incumbent did not expend much effort over the

¹¹ Svitlana Chernovykh and Milan Svolik, 'Third-party actors and the success of democracy: How electoral commissions, courts and observers shape incentives for electoral manipulation and post-election protests', *Journal of Politics* 77, 2 (2015), pp. 407–420.

¹² Michael Callen and James D. Long, 'Institutional corruption and election fraud: Evidence from a field experiment in Afghanistan', *American Economic Review*, 105, 1 (2015), pp. 354–381.

¹³ Callen and Long, 'Institutional corruption and election fraud', p. 379.

¹⁴ Michael Callen, Clark Gibson, Danielle Jung and James D. Long, 'Improving electoral integrity with information and communications technology', *Journal of Experimental Political Science*, 3, 1 (2016), pp. 4–17, p. 4.

computation of results. In some cases such as Uganda, Cameroon, Congo-Brazzaville, Gabon, and Gambia, the authorities shut down internet and social media facilities in order to frustrate alternative means of compiling the results in real time. However, where the stakes have been very high, to the point of a tight two-horse race for example, and the playing fields were almost level because each country was split into nearly equal halves of incumbent versus opposition (e.g. Gabon, Ghana and Kenya), there were efforts at controlling the EMB's computer systems in order to win the election. These cases posed practical and policy challenges for the international monitors. In Gambia, where both internet and international monitors were banned and yet the incumbent failed to take control of the EMB's computer systems, the incumbent lost the election and had no international back-up.

The International Institute of Democracy and Electoral Assistance (IIDEA) has categorized three models in which EMBs can be designed to be independent, governmental or mixed, whereby the EMB is independent and autonomous from the executive branch of government, or organised and managed by the executive branch of government through a government ministry, or a combination of the two models working in tandem.¹⁵ The institutional design or model indicates the extent to which the incumbent can go to exert influence on EMB operations, and therefore contributes to the likelihood of incumbent manipulation of the election results tabulation. Sometimes the so-called autonomy of the EMB is not that independent from political manipulation and control, particularly in high staked two-horse race scenarios, and especially in winner-take-all political systems, as highlighted by Kelley.¹⁶ Indeed Carolien van Ham and Staffan Lindberg confirm that, where the institutions are controlled by authoritarian incumbents, 'the particular institutional design of EMBs should make little difference'.¹⁷ Sarah Birch and Carolien van Ham have also noted that de jure independence does 'not always translate into de facto impartiality, and electoral commissions can fall under the sway of incumbent political forces'.¹⁸

This article therefore explores the theory that high-staked presidential elections in winner-take-all political systems tend to generate enormous potential or propensity for incumbent interference in EMB operations. Incumbents would therefore seek the political advantage to influence a winning or favourable result if not prevented, so that where the incumbent has control of the EMB electronic aggregation process, the incumbent could guarantee itself a win, or suffer a loss if the situation was to the contrary. It does this through examining four case studies of presidential elections: Gabon, Ghana and the Gambia in 2016, and Kenya in 2017.

For each country case, the article examines the respective election management processes, institutional design and conduct of their EMBs, the election results, the hacking claims where alleged and role of international observers where allowed, and the appraisal of Supreme Court and Constitutional Court verdicts in the applicable circumstances. Statistical data on

¹⁵ International IDEA, *Electoral management design: The International IDEA handbook revised edition* (International IDEA, Stockholm, 2014), pp. 6-26.

¹⁶ Kelley, *Monitoring democracy*, p.142.

¹⁷ Carolien van Ham and Staffan Lindberg, 'When guardians matter most: Exploring the conditions under which electoral management body institutional design affects election integrity'. *Irish Political Studies* 30 ,4 (2015), p. 460.

¹⁸ Sarah Birch and Carolien van Ham, 'Getting away with foul play? The importance of formal and informal oversight institutions for electoral integrity, *European Journal of Political Research*, 56 (2017), p. 489.

election results were obtained from the official results published by the electoral commissions of the respective countries or the relevant government ministry as the case may be, supported by the author’s own data analysis and credible media sources.

Gabon’s presidential election of 2016

The 2016 Gabonese presidential elections were held on 27 August 2016, in a vote where the winning candidate simply needed to poll the most votes without an absolute majority required, hence only one round. The president is elected for a seven-year term, and the incumbent Ali Bongo Ondimba stood for a second term, having already done seven years from August 2009 when he first became president. His predecessor and father had been the president of Gabon for 38 years. Of the ten candidates on the ballot paper, the election became a two-horse race between Ali Bongo and Jean Ping, as depicted in Tables 1 and 2.

The IIDEA categorizes Gabon’s EMB design as mixed, where the National Autonomous and Permanent Election Commission is supposed to operate in tandem with the Ministry of Interior.¹⁹ The election is run by the Commission, but the results are declared by the Ministry, as occurred on 31 August 2016. The stakes were very high, especially as Gabon has a winner-take-all political system, and so was the potential for incumbent interference.²⁰ For example, internet and social media were disabled during the voting and counting, thereby preventing or frustrating any alternative real-time computation of results by opposition parties, international monitors, civil society organizations and social media platforms. Jean Ping had already declared for himself a presumptive win by 59 percent against 38 percent for Bongo, based on statistics independently compiled by the opposition Union of Forces for Change (UFC). However, the official results declared by the Ministry of Interior, gave a close margin of 49.8 percent for Bongo and 48.23 percent for Ping. The Ping camp complained of foul play, government hacking and manipulation, but without any analytical evidence to counter what they thought was spurious.

Table 1 Election Results by Candidate

Candidate	Party	Votes	%age
Ali Bongo Ondimba	Gabonese Democratic Party	177,722	49.80
Jean Ping	Union of Forces for Change	172,128	48.23
Bruno Ben Moubamba	Independent	1,896	0.53
Raymond Ndong Sima	Independent	1,510	0.42
Pierre Claver Maganga Mousavou	Social Democratic Party	1,130	0.32
Paul Mba Abessole	National Woodcutters’ Rally – Rally for Gabon	761	0.21
Gérard Ella Nguema	Independent	583	0.16

¹⁹ IIDEA, *Electoral management design*, p. 380.

²⁰ Kelley, *Monitoring democracy*, p. 142.

Augustin Moussavou King	Gabonese Socialist Party	553	0.15
Dieudonné Minlama Mintogo	Independent	393	0.11
Abel Mbombe Nzoudou	Independent	214	0.06
Invalid/blank votes		16,420	–
Total		373,310	100
Registered voters/turnout		627,805	59.46

Source: Gabonese Ministry of Interior

An obvious sign of institutional manipulation of the data emerged from the result in Haut Ogooué province, Bongo's native stronghold, where the incumbent polled 68,064 votes or 95.46 percent of the ballot, as shown in Table 2. Voter turnout is a recurring theme in academic debate, and we note the analytical importance of voter turnout to election results, observer guidance and decision-making, as detailed by Mark Schelker and Marco Schneider.²¹ However, in all probability, even if we maximised voter turnout by compulsory voting,²² it was practically impossible to achieve the minimum 99.77 percent voter turnout by the wildest stretch of empirical analysis²³ or even by the most loyal voting habits²⁴, which the Commission claimed to underscore the 95.46 percent vote for Bongo in Haut Ogooué. Hence, the Haut Ogooué result became a key standpoint from which to question the integrity of the official data presented, especially as the national voter turnout was as low as 59.46 percent (Table 1).

Table 2: Election Results by Province

Province	Ali Bongo Ondimba (PDG)		Jean Ping (UFC)	
	Votes	%age	Votes	%age
Estuaire	44,064	37.33	71,868	60.88
Haut-Ogooué	68,064	95.46	3,071	4.31
Moven-Ogooué	4,689	30.51	10,247	66.68
Ngounié	14,173	41.76	18,248	53.76
Nyanga	6,135	44.07	7,250	52.08

²¹ Mark Schelker and Marco Schneider, 'The elasticity of voter turnout: Investing 85 cents per voter to increase voter turnout by 4 percent', *Electoral Studies*, 49 (2017), pp. 65-74.

²² Arend Lijphart, 'Unequal participation: Democracy's unresolved dilemma', *American Political Science Review*, 91, 1 (1997), pp. 1-11.

²³ Benny Geys, 'Explaining voter turnout: a review of aggregate-level research', *Electoral Studies*, 35, 4 (2006), pp. 637-663.

²⁴ Maciej Gorecki, 'Electoral context, habit-formation and voter turnout: A new analysis', *Electoral Studies*, 32, 1 (2013), pp. 140-152.

Ogooué-Ivindo	12,131	65.96	5,977	32.5
Ogooué-Lolo	9,713	53.25	8,193	44.65
Ogooué-Maritime	7,983	29.67	18,363	68.26
Woleu-Ntem	8,818	24.81	25,914	72.9
Overseas	1,952	37.38	3,047	58.35
Total	177,722	49.8	172,178	48.23

Source: Gabonese Ministry of Interior

Jean Ping appealed against the result on 8 September 2016 and the Constitutional Court convened to reassess the vote count. The court was presided over by Marie-Madeleine Mborantsuo, the former mistress of the first president Omar Bongo Ondimba,²⁵ with whom she had three children. In the recount process, the court revised the Haut Ogooué poll to 83.2 percent and a voter turnout of 98 percent, but also annulled the votes of 21 polling stations in Libreville that was Ping's stronghold. The final result of 50.66 percent for the incumbent and 47.24 percent for Ping was announced surreptitiously at midnight on 23-24 September 2016.²⁶ By this stage the entire dynamics of the election management process²⁷ had already undermined the perceptions of integrity,²⁸ as was the view of the European Union Election Observer Mission (EU EOM) who had already announced that the recount process conducted by the Constitutional Court lacked transparency.²⁹

The role of international observers has traditionally been restricted to monitoring the manual electoral process, and observer teams are not accorded electronic access to EMB computer systems. As no pre-existing protocols or laws were in place to guarantee monitoring access to the Commissions's data management systems, the EU observers were denied observation and electronic access to the recount process in order to investigate properly and confirm the result. The EU EOM's firm verdict was that the court 'failed to resolve anomalies',³⁰ and that the Gabonese intelligence wire-tapped their conversations, with the observer mission chief being the prime target.³¹ More importantly, the court notified that a physical recount was impossible because the balloted papers had already been destroyed. Therefore, in the absence

²⁵ *AllAfrica*, 'Gabon: AU will send observers to help with election appeal', 15 September 2016, <<http://allafrica.com/stories/201609150802.html>> (22 January 2018).

²⁶ *Viral World News*, 'The constitutional court of Gabon upholds incumbent President Ali Bongo's election victory, rejects opposition' 24 September 2016, <<http://educationpingler.blogspot.co.uk/2016/09/the-constitutional-court-of-gabon.html>> (22 January 2018).

²⁷ Richard Frank and Ferran Coma, 'How election dynamics shape perceptions of electoral integrity', *Electoral Studies*, 48 (2017) pp. 153-165.

²⁸ Kerr and Luhrmann, 'Public trust in manipulated elections'.

²⁹ Abdur Shaban, 'Gabon polls "lacked transparency" – EU observer mission'. *AfricaNews*, 29 August 2016 <<http://www.africanews.com/2016/08/29/gabon-polls-lacked-transparency-eu-observer-mission/>> (22 January 2018).

³⁰ Conor Gaffey, 'EU observers blame Gabon court as Bongo victory upheld', *Newsweek*, 26 September 2016, <<http://www.newsweek.com/eu-observers-slam-gabon-court-bongo-re-election-upheld-502757>> (17 January 2018).

³¹ *The Guardian*, 'EU observers wiretapped during Gabon vote', 3 October 2016, <<http://guardian.ng/news/eu-observers-were-wiretapped-during-gabon-vote/>> (17 January 2018).

of the hard evidence (the paper ballots), the establishment quoted unsupportable and unverifiable computer data to declare a winning result for the incumbent. The incumbent's disabling of internet and social media prevented alternative ways of accounting for the tally in real time. In effect, the incumbent maintained control of the rigging apparatus—the Commission's computer systems—and ensured that the establishment emerged victorious and remained in power.

Ghana's presidential election of 2016

The 2016 Ghanaian presidential election resulted in a 53.72 percent win for the opposition candidate Nana Akufo-Addo and 44.53 percent for the incumbent president John Mahama,³² the first time that an incumbent president of Ghana had failed to win a second term. The background to this was the 2012 presidential election results that were challenged in court,³³ of which the Supreme Court pronounced a panel ruling of 5:4 in favour of the incumbent to uphold the result of 50.7 percent for John Mahama and 47.74 percent for the opposition candidate Nana Akufo-Addo.³⁴ The main opposition New Patriotic Party (NPP) had learnt thorough lessons from the eight-month long court case, and made sure that all practical and procedural loopholes had been sealed in the preparations towards the 2016 elections. What remained unpredictable was the electronic transfer of results from polling stations to the Electoral Commission, and subsequent aggregation of votes on the Commission's computer servers. Ghana's Electoral Commission has been classified by IIDEA as an independent EMB.³⁵ However, as the stakes were very high for a two-horse race in a winner-take-all polity,³⁶ the potential for incumbent interference with the Commission's independence was also high.

Elections in Ghana are eagerly monitored by local, sub-regional, regional and international observers across the globe, partly due to heightened international interest in the country's reputation as a beacon of democracy on the African continent. The 2016 elections were swamped with international observers, as was the case for the 2012 elections and the preceding December 2008 elections, which incidentally occurred in the wake of the disastrous December 2007 Kenyan elections and the March 2008 Zimbabwean elections, both of which resulted in violence and unworkable power sharing agreements.³⁷ Observer teams present at the 2016 general elections included the Coalition of Domestic Elections Observers (CODEO), the Economic Community of West African States (ECOWAS) observer team, the African Union (AU) Observer Mission, EU EOM, and the Carter Centre. Traditionally, all political parties had representatives in the Electoral Commission's computer "strong room" to

³² Electoral Commission of Ghana, '2016 presidential results', 12 December 2016, <<http://www.ec.gov.gh/election-results/2016-presidential-results.html>> (17 January 2018).

³³ Sarah Brierly and George Ofori, 'The presidential and parliamentary elections in Ghana, December 2012'. *Electoral Studies*, 35 (2014), pp. 382-385.

³⁴ Paul Pryce and Raphael Oidtmann, 'The 2012 general election in Ghana', *Electoral Studies*, 34 (2014), pp. 330-334.

³⁵ IIDEA, *Electoral management design*, p. 380.

³⁶ Kelley, *Monitoring democracy*, p. 142.

³⁷ Michael Amoah, 'The most difficult decision yet: Ghana's 2008 presidential elections', *African Journal of Political Science and International Relations*, 3, 4 (2009), pp. 174-181.

verify votes as they trickled in, but not international observers.³⁸ Despite the amount of observation covering the electoral process as a whole, there were anomalies in the 2012 election results that could not be resolved in court, as the Supreme Court verdict had proved.

The NPP therefore sought the services of Joseph Anokye, a Ghanaian geodetic engineer and technology manager who had worked with the US National Aeronautics and Space Administration as a telecommunications service manager. The party hired Joe Anokye for their own electoral data management and communications purposes for the 2016 elections.³⁹ Anokye set up a parallel system of collating countrywide election results in real time, so that the NPP could compile alternative results as back-up to the national grid, having learnt their lessons that they could not rely on a court of politicized judges to adjudicate on evidence. The NPP announced results of the 2016 elections in real time, which offset any potential attempt by the Electoral Commission to announce something else, or use a computer virus attack as an excuse to cover up for potential anomalies.

There was public discussion of a cyber war that occurred during the 2016 presidential election. It is alleged that there was government sponsored hacking or manipulation of the Electoral Commission's data systems, and then the use of a neutralizing algorithm programmed by a counter agent to offset the doctoring of the election results.⁴⁰ Neither of the political parties admitted to hacking. The Commission complained publicly of hacking and counter hacking, even though the website was restored within 24 hours.⁴¹ Confessions made by top officials at the Commission reveal there was more to the drama than was reported on the Commission's website regarding the live cyberwar. Whereas some analysts have opined that Anokye prevented the elections from being rigged, his role in the saga remains in the arena of public debate.⁴² International observers were not in a position to access or verify the integrity of the Commission's electronic data, as there is no legislation for it. The Commission resorted to the manual counting of paper ballots allowed within 72 hours of the vote. Eventually, the incumbent president had to concede within the 72-hour window, having realized that it would no longer be possible to do anything about the real results. In sum, when the incumbent could not have utter control of the rigging apparatus—the Commission's computer servers and database, the incumbent lost the election.

³⁸ Ghana News Agency, 'EC's "strong room" structure needs reviewing', *News Ghana*, 21 September 2014, <<https://www.newsghana.com.gh/ecs-strong-room-structure-needs-reviewing/>> (17 January 2018).

³⁹ Enoch D. Frimpong, 'How Joe Anokye helped NPP to tally election results ahead of EC', *Graphic Online*, 12 December 2016, <<https://www.graphic.com.gh/news/general-news/how-joe-anokye-helped-npp-to-tally-election-results-ahead-of-ec.html>> (31 January 2019).

⁴⁰ Rockson Adofo, 'Did NPP employ a NASA computer analyst to hack into the E.C.'s computers?', *Modern Ghana News*, 25 December 2016, <<https://www.modernghana.com/news/745346/did-npp-employ-a-nasa-computer-analyst-to-hack-into-the-ecs.html>> (17 January 2018).

⁴¹ *BBC News*, 'Ghana election commission website hit by attack', 8 December 2016, <<http://www.bbc.co.uk/news/world-africa-38247987>> (17 January 2018); *GhanaWeb*, 'Our figures changed when keyed into the system – EC', 15 December 2016, <<http://ghanaelection2016.ghanaweb-news.com/2/post/2016/12/our-figures-changed-when-keyed-into-the-system-ec.html>> (17 January 2018); *AllAfrica*, 'Ghana: Electoral commission wards off cyber attack', 15 December 2016, <<http://aa.com.tr/en/africa/ghana-electoral-commission-wards-off-cyber-attack/702274>> (17 January 2018).

⁴² Sydney Casefly-Hayford, 'The non-rigged election', *Modern Ghana News*, 13 December 2016, <<https://www.modernghana.com/news/742826/the-non-rigged-election.html>> (17 January 2018).

Kenya's presidential election of 2017

The 2017 Kenyan general elections occurred on 8 August. The presidential ballot was held under a two-round system, whereby failure of a leading candidate to win more than 50 percent of the vote plus at least 25 percent each in a minimum 24 out of the 47 counties, automatically generated a second round. According to the Independent Electoral and Boundaries Commission, Uhuru Kenyatta of the incumbent Jubilee Alliance polled 54.27 percent of the presidential vote, whilst Raila Odinga of the opposition National Super Alliance (NASA) polled 44.74 percent, as shown in Table 3. There was high anticipation from both sides and an impressive voter turnout of 77.5 percent.

Kenya's Commission has been categorized by the IIDEA as an independent EMB.⁴³ However, Kenya also has a history of ethnic clashes and post-election violence following the 2007 presidential election in the context of the winner-take-all political system.⁴⁴ It was therefore not unexpected when the losing candidate refused to accept the results and alleged voting irregularities, particularly hacking by state agents both within the Commission and outside of it. Odinga appealed to the Kenyan Supreme Court to investigate. It should be noted, that one week before the vote, the top official at the Commission in charge of the computerization of results was tortured for his password to the EMB's data management system and murdered.⁴⁵ On 1 September, the Kenyan Supreme Court nullified the election results after unearthing, among other things, 3,395 failed login attempts and 3,851 successful login attempts on the Commission's servers, including from unidentified strangers.⁴⁶ This was the first time in African politics that a court had nullified the electoral result of an incumbent's win. The court ordered a repeat election within 60 days, which occurred on 26 October, but by which time other issues including insufficient time for the printing of revised ballot papers and the invocation of a fresh nominations process to involve the original candidates or even new ones, had frustrated the opposition candidate to withdraw from the race. Uhuru Kenyatta was declared the automatic winner of the repeat vote that took place.

Table 3: Presidential election results by candidate

Candidate	Votes	%age	Counties with minimum 25% of valid votes cast
John Aukot	27,311	0.18	
Mohamed Dida	38,093	0.25	

⁴³ IIDEA, *Electoral management design*, p. 382.

⁴⁴ Kelley, *Monitoring democracy*, p. 142.

⁴⁵ *BBC News*, 'Kenyan election official Chris Msando "tortured to death"', 2 August 2017, <<http://www.bbc.co.uk/news/world-africa-40807425>> (17 January 2018).

⁴⁶ *Kenya Today*, 'Report by ICT experts appointed by supreme court on IEBC server and system – Raila was right, system was hacked!' 30 August 2017, <<https://www.kenya-today.com/opinion/report-ict-experts-appointed-supreme-court-report-iebc-server-system>> (17 January 2018).

Shakhalaga Jirongo	11,705	0.08	
Japheth Kaluyu	16,482	0.11	
Uhuru Kenyatta	8,203,290	54.27	35
Michael Mwaura	13,257	0.09	
Joseph Nyaga	42,259	0.28	
Raila Odinga	6,762,224	44.74	29
Total Valid Votes	15,114,621	100	

Source: Independent Electoral and Boundaries Commission.

Table 4: Voter statistics of the 2017 Kenyan elections

National	Tally	%age
Total valid votes	15,114,621	77.07
Rejected ballots	81,685	0.42
Voter turnout	15,196,306	77.49
Absentees	4,415,117	22.51
Registered voters	19,611,423	100

Source: Independent Electoral and Boundaries Commission.

There were high profile international observer teams in Kenya, from the AU, East African Community, the EU EOM, Cater Centre and the Commonwealth Observer Group. Academics and policy makers noted that international observer missions present in Kenya, with the exception of the AU team which did not want to be implicated, made vociferous media representations that the entire electoral process was free and fair even when there was stark evidence of falsified statistics coming from the Commission's computers, including email attachments with unsigned forms.⁴⁷ The rubber-stamping announcements from international

⁴⁷ Nic Cheeseman, Todd Moss and Jeffrey Smith, 'It's time for international election monitors to do their job', *The Washington Post*, 15 November 2017, <<https://www.washingtonpost.com/news/democracy->

observers indicated their support for the incumbent, which showed when the Supreme Court nullified the vote and publicized the evidence.⁴⁸ It became an open question that if the most elitist international observer teams were at the scene and could not get it right, then the future of public trust in international observation as a means of legitimation was at stake.⁴⁹

The evidence unearthed by the Supreme Court was quite damning. Benefiting from the forensic analyses led by University of Michigan Professor of Statistics and Political Science Walter Mebane,⁵⁰ the court examined 41,451 forms 34A, 291 forms 34B and one form 34C that represented all three stages of vote collection, and found out that 10,438 forms 34A were missing when the winning result was declared. Among the forms 34B, ten were illegible, 236 had no watermark and 56 did not bear the security feature.⁵¹ The account of the Commission's chairperson had 9,945 transaction logs from an internet provider address that was not one of the Commission partner addresses. Among the strangers who hacked into the Commission were vendors and anonymous users with gmail accounts.⁵² The court verdict did not encounter any opposition, and the incumbent had to accept it. In the Kenyan case, when the rigging apparatus (the Commission's computer systems) came under the adjudication of the Kenyan Supreme Court, the incumbent lost the verdict.

Following the Supreme Court verdict, there were widespread and overwhelming calls for reform, including the printing of revised ballot papers. However, these reforms could not take place before the repeat election within 60 days, which rather defeated the point of the Supreme Court verdict, in that the country headed straight into the repeat election without reform and the ballot papers unrevised. The opposition NASA candidate threatened a tactical boycott of the repeat election, with the hope that it would generate a fresh nominations process to include the original candidates instead of the top two, but this was not guaranteed either. In the absence of the proposed reforms or fresh nominations, the point had already been established that the repeat election was automatically rigged in advance.

Fears of facing a similar scenario whereby the repeat rigging could be challenged in court once more, moved the ruling party to take steps to eliminate avenues that could lead to a second court challenge. The government initiated moves in five ways: (1) to undermine the Commission chairperson's status by amending the criteria for their replacement; (2) to reduce the quorum for the Commission's conduct of business from 5 to 3 and make the panel easier to manipulate; (3) to delegitimize electronic results so that they had no legal or binding status; (4) to eliminate the Supreme Court's right to investigate and void an election, and (5) to make sure the withdrawal of an opposition candidate signalled their official exit from the race with no option to generate a fresh nominations process. On 22 September 2017, the majority party in parliament sponsored the proposed amendments and pushed the legislation

post/wp/2017/11/15/its-time-for-international-election-monitors-to-start-doing-their-job/?utm_term=.dec41e447663> (22 January 2018).

⁴⁸ Helen Epstein, 'Kenya: The election and the cover-up', *The New York Review of Books*, 30 August 2017, <<http://www.nybooks.com/daily/2017/08/30/kenya-the-election-and-the-cover-up/>> (20 January 2018),

⁴⁹ Kerr and Luhrmann, 'Public trust in manipulated elections'.

⁵⁰ Epstein, 'Kenya'.

⁵¹ Kamau Muthoni and Paul Ogemba, 'Presidential petition: What scrutiny of key IEBC forms revealed', *Standard Digital*, 31 August 2017, <<https://www.standardmedia.co.ke/article/2001253102/presidential-petition-what-scrutiny-of-key-iebc-forms-revealed>> (31 January 2019).

⁵² *Kenya Today*, 'Report by ICT experts appointed by supreme court'.

through before the repeat election took place. The practical nuances of the proposals are hereby explained.

The amendment to the Commission chairperson's replacement procedure took the following form. Previously, article 250(2) of the existing Kenyan constitution⁵³ had set out the operational distinction between the chairperson and the other commissioners so that Article 250(10) then provided for a vice chair to replace the chairperson as and when necessary. The proposed amendment stipulated that any member of the commission could be elected from amongst the commissioners to act as chairperson and exercise the respective powers and responsibilities whenever the chair was no more, thereby setting the scene for any chair who disagreed with the government's agenda to be easily moved aside and replaced with a government lackey. The amendment to the Commission's original quorum stipulated in Schedule 2(5) of the Independent Electoral and Boundaries Commission Act 2011 occurred in order to make it easier to push through specific agendas so that the Commission board did not need too many commissioners to carry out moves required by the incumbent, in anticipation of a court challenge.⁵⁴

The amendment to relegate electronically transmitted results to a non-binding status took shape as follows. Article 86(b) of the 2010 constitution required that election results be announced by the presiding officer at each polling station and then transmitted, in order to fulfil Article 86(a) of the constitution that the result should be accurate, verifiable, accountable and transparent. The proposed amendment stated that:

Where there is a discrepancy between the electronically transmitted and manually transmitted results, the manually transmitted results shall prevail. Any failure to transmit or publish the election results in an electronic format shall not invalidate the result as announced and declared by the respective presiding and returning officers at the polling station and constituency tallying centre, respectively. The Commission shall, to facilitate public information, establish a mechanism for the live-streaming of results as announced at polling stations, and the results so streamed shall be for purposes of public information only and shall not be the basis for a declaration by the Commission.⁵⁵

The amendment was aimed to deny the original tally that would be streamed from the polling station their due right of equal status to be declared by the Commission as the result, and effectively undermined Article 86(a). Electronically transmitted results therefore lost their due relevance. Mitigating submissions made by the Institute for Social Accountability stated:

The elections should be managed that there are no discrepancies between the manual and the electronic results. The house should not legislate to legitimize irregularities in the transmission of results. To say if technology fails the manual system supersedes is just to say that the election is manual ... These amendments completely destroy the threshold provided by Article 86 (a) (that the

⁵³ National Council for Law Reporting, *The constitution of Kenya, 2010*, 27 August 2010.

⁵⁴ National Council for Law Reporting, *The Independent and Electoral Boundaries Commission Act*, p. 27.

⁵⁵ *Mzalendo*, 'The Election Laws (Amendment) Bill, 2017', 3 October 2017, <<https://dokeza.mzalendo.com/bills/election-laws-amendment-bill-2017/>> (22 January 2018).

voting system should be accurate, verifiable, secure, accountable and transparent) and achieved in the Elections Act 2011 as amended by the 11th Parliament.⁵⁶

The government proposals also tampered with Article 83 of the Kenyan Elections Act 2011 by amending the premise for the voiding of election results and the provision for the Supreme Court to adjudicate the results as valid or nullified.⁵⁷ In effect, not only would the proposals stop the court from invalidating results declared by the Commission if the electronic process failed to work smoothly, but would also prevent the court from voiding an election on the grounds of non-compliance with the law, provided the poll was held in line with the broad constitutional principles, and that any “non-compliance” did not affect the general trajectory of the result of the election.

Finally, the amendment on electoral candidate boycott took place in the following context. As it became quite clear that 60 days would not be sufficient to implement the long list of wide-ranging reforms sought by the opposition, the opposition leader Raila Odinga threatened to withdraw from the race altogether, so as to trigger a fresh nominations process. In order to undermine any attempt by the opposition to stretch the reform process beyond the 60 days limit for a repeat election provided for in Article 140(3), after which period there was potential for the Speaker of the National Assembly to assume the presidency and preside over the election as provided in Article 146 (2)(b), the government legislative proposals included the following wording:

The Commission shall not conduct fresh nominations for a fresh election pursuant to Article 140(3) of the Constitution. An eligible candidate for an election pursuant to Article 140(3) of the Constitution may withdraw from the election by notice in writing to the Commission, and - where there are more than two remaining candidates in the election after the withdrawal, the election shall proceed as scheduled; where only one candidate remains after the withdrawal, the remaining candidate shall be declared elected forthwith as the President-elect without any election being held.⁵⁸

Eventually, Odinga withdrew from the race, verbally but not in writing, leaving citizens to vote for the incumbent Uhuru Kenyatta, who was subsequently declared the winner of a ballot.

In sum, even the rare opportunity that existed for a Kenyan Supreme Court to nullify the cyber rigging machine was eliminated when the incumbent engaged its parliamentary majority to change the electoral laws overnight. It must also be noted that Joe Anokye, the Ghanaian the cyber technologist who set up a parallel vote collating system for the 2016 Ghanaian elections, was invited by the Kenyan opposition NASA coalition for a similar assignment in Kenya, but was deported at the airport.⁵⁹ Also by sheer coincidence, the

⁵⁶ The Institute for Social Accountability (TISA), ‘Memorandum on the Election Laws (Amendment) Bill 2017’ (TISA, Nairobi, 2017).

⁵⁷ National Council for Law Reporting, *The Elections Act, 2011*, 27 August 2010.

⁵⁸ *Mzalendo*, ‘The Election Laws (Amendment) Bill, 2017’.

⁵⁹ Abu Mubarak, ‘How Mac Manu was prevented from entering Kenya’, *Pulse*, 6 August 2017, <<http://www.pulse.com.gh/news/former-npp-campaign-chairman-how-mac-manu-was-prevented-from-entering-kenya-id7102659.html>> (17 January 2018); *Ghana News Online*, ‘Director general of NCA Joe Anokye also deported from Kenya’, 9 August 2017, <<http://ghananewsonline.com.gh/director-general-nca-joe-anokye-also-deported-kenya/>> (31 January 2019).

Ghanaian incumbent president who lost the 2016 Ghanaian election to Joe Anokye's vigilance, happened to be leading the Commonwealth Observer Group in the 2017 Kenyan elections.

The Gambia's presidential election of 2016

The Gambian 2016 general elections occurred on 1 December. The original results released by the Independent Electoral Commission and published the next day by both the BBC and Al Jazeera English are shown in Table 5.⁶⁰ The incumbent Yahya Jammeh conceded by a public announcement and promised a smooth handover. Subsequent to Jammeh's concession, the Commission admitted a serious and inadvertent error, and organized a press conference to announce a revised result, which sparked controversy and a retraction of the incumbent's concession followed by a forthright demand for a full investigation. Gambia's Commission has been classified by the IIDEA as an independent EMB.⁶¹

Table 5: The original election results by candidate

Candidate	Votes	%age
Adama Barrow	263,515	45.5
Yahya Jammeh	212,099	36.7
Mama Kandeh	102,969	17.8
Total	578,583	100

Source: BBC and Al Jazeera English.

Table 6: The revised election results by candidate – final announcement

Candidate	Party	Votes
Adama Barrow	Coalition 2016	227,708
Yahya Jammeh	Alliance for Patriotic Reorientation and Reconstruction	208,487
Mama Kandeh	Gambia Democratic Congress	89,768
Total		525,963

⁶⁰ *BBC News*, 'Gambia's Jammeh loses to Adama Barrow in shock election result', 2 December 2016, <<http://www.bbc.co.uk/news/world-africa-38183906>> (17 January 2018); *Al Jazeera English*, 'Yahya Jammeh loses to Adama Barrow in Gambia election', 2 December 2016, <<http://www.aljazeera.com/news/2016/12/gambia-yahya-jammeh-loses-election-adama-barrow-161202130519550.html>> (17 January 2018).

⁶¹ IIDEA, *Electoral management design*, p. 380.

Registered voters	886,578
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Source: Independent Electoral Commission – The Gambia⁶²

Table 7: Revised election results by candidate for Basse Administrative Area

Constituency	Adama Barrow Coalition 2016	Yahya Jammeh APRC	Mama Kandeh GDC	Total
	Votes	Votes	Votes	Voter Turnout / Votes Cast (inc invalid)
Basse	28,102	24,490	11,289	63,909

Source: Independent Electoral Commission - The Gambia

The original results that were announced and captured by the BBC and Al Jazeera disappeared from the Commission’s website, but they remained on the BBC and Al Jazeera websites. Only the revised results and the accompanying press release to explain the anomaly or tabulation errors appear on the Commission’s website.⁶³ The Commission press release cited the alleged errors and postulated a correcting procedure to rectify the errors.

It is not difficult to decipher the error committed by the Commission’s data staff. One simply has to follow the Commission’s press statement and work out if the explanation holds or not. Adama Barrow originally polled 263,515 nationally (Table 5); he also polled 28,102 in Basse, and the voter turnout or total votes cast in Basse was 63,909 according to data still downloadable from the Commission’s download centre.⁶⁴ When you apply the Commission’s press release explanation and the alleged correcting procedure to these figures, you arrive at the 227,708 which the Commission announced as the final result for Barrow, for which reason we know the formula to be:

(Original Result – Total Turnout in Basse) + Candidate Votes in Basse = Revised Result
Barrow: (263,515 – 63,909) + 28,102 = 227,708.

The Commission claims that the error was repeated across for all three candidates, hence the alleged correcting procedure should also apply to all three candidates. We know that Yahya Jammeh originally polled 212,099 nationally; he also polled 24,490 in Basse, and the voter turnout in Basse was 63,909. We also know that the third candidate Kandeh originally polled 102, 969 nationally, 11,289 in Basse, and the voter turnout in Basse was 63,909.⁶⁵ But when

⁶² Independent Electoral Commission – The Gambia, ‘The total of final election results by Alieu Momarr Njai – chairman IEC’, <<http://iec.gm/the-total-of-final-election-results/>> (5 December 2016).

⁶³ Independent Electoral Commission – The Gambia, ‘The total of final election results’.

⁶⁴ Independent Electoral Commission – The Gambia, ‘Download’, <<http://iec.gm/index.php/download/>> (17 January 2018).

⁶⁵ Ibid.

we apply the Commission’s explanation to the sums polled by the other two candidates, we do not arrive at the revised figures announced as the final results in Table 6. Instead, we obtain the following different results, as also shown in Table 8:

Jammeh: $(212,099 - 63,909) + 24,490 = 172,680$, and Kandeh: $(102,969 - 63,909) + 11,289 = 50,349$.

Table 8: Expected votes versus Commission-announced votes by candidate

Candidate	Expected following formula	Votes by correcting	Final votes announced by the Commission
Yahya Jammeh	172,680		208,487
Mama Kandeh	50,349		89,768
Adama Barrow	227,708		227,708

We can only conclude that the error correcting procedure allegedly applied to Barrow’s votes was not simultaneously applied to Jammeh’s or Kandeh’s votes. Other independent analytical attempts, for example by Samudeen Sarr,⁶⁶ to analyse the Commission’s revised results encountered a similar problem trying to follow the Commission’s correcting formula. The Commission seems to have concocted a fictitious explanation to compound already fictitious results. In effect, the Commission announced a final set of falsified results, and we may never know the precise tabulation errors that occurred originally.

Incumbent President Jammeh had a dictatorial record, and many were relieved to hear the rare concession announcement to hand over the presidency to the winner Adama Barrow. Gambia’s was a rare case in Africa where the incumbent acted in good faith by not covertly or overtly interfering with the Commission’s computer systems and promptly conceded defeat. It is therefore unfortunate that the Commission made blatant and unprofessional errors, even where it appeared that the incumbent had lost the election anyway. The Commission chair’s attempt to make up for, or cover up for the original anomalies, resulted in further anomalies. It is equally unprofessional that the wrong result announced after the Commission’s error correcting process was unanimously endorsed by representatives of the contesting candidates at the Election House on 5 December 2016, as stated on the Commission’s webpage.⁶⁷

It was within Jammeh’s constitutional right under Article 49 of the constitution to challenge the results.⁶⁸ However, the subregional political pressure for him to quit was too much to allow for the many months it would take for the Gambian Supreme Court to convene. Under Jammeh’s intimidating bad governance, the court was in disarray as at December 2016 with fewer justices than the quorum to convene, and it would take several months to advertise and

⁶⁶ Samudeen Sarr, ‘President Jammeh & APRC call for reelection’, *The Gambia Eco*, 8 January 2017, <<http://thegambiaecho.com/president-jammeh-aprc-call-for-reelection/>> (17 January 2017).

⁶⁷ *Independent Electoral Commission – The Gambia*, ‘The total of final election results’.

⁶⁸ *Constitute Project*, ‘Gambia (The)’s constitution of 1996 with amendments through 2004’, <https://www.constituteproject.org/constitution/Gambia_2004.pdf?lang=en> (20 January 2018).

recruit to form a panel the earliest the court could sit was May 2017, whereas the international pressure for Jammeh to quit had peaked as early as January 2017 when ECOWAS forces massed troops at the Gambian border with Senegal ready to invade if Jammeh did not concede.⁶⁹ The bad governance under Jammeh's watch and the insufficient commitment to building key judicial institutions cost him dearly when he really needed a court to sit over his own matter. A ready court jurisdiction over the matter might have exposed the data anomalies. Moreover, as he had disallowed international observers, there was no other credible, independent and alternative agency to account for the gross tabulation errors committed by the Commission. Jammeh's pre-planned avoidance of international observers could be linked to the premeditated plan to cut off internet provision and social media facilitation, which then prevented the much-needed means to facilitate real time and alternative vote aggregation by other agencies. It appeared that the incumbent undermined the very processes that could have guaranteed broader accountability.

Conclusions

Of the four case studies, Ghana, Kenya and the Gambia have independent EMBs; whereas Gabon has a mixed institutional design with the electoral commission and interior ministry acting in tandem. The winner-take-all political system for all four countries raised the political stakes for their presidential candidates and the potential for incumbent hacking or other interference in the electronic computation of results, particularly as there were two-horse races in all four cases. Hence, internet and social media were disabled in Gabon and Gambia to prevent or frustrate alternative real-time computation of results by opposition parties, international monitors, civil society organizations and social media platforms. The incumbent in Gabon benefited from the internet blackout, whereas the incumbent in Gambia denied others the facility when he might have benefited from it. Ghana and Kenya which allowed internet and social media facilitation experienced real time computation of electoral results by all parties concerned, and which contributed to countering and exposing hacking or electronic rigging behaviours.

The Gabon case shows that the incumbent won the election when it maintained sole and absolute control of the electronic computation of data. This was not the case in Ghana where the electoral commission lost control of the electronic process to hacking and counter-hacking and had to rely on paper ballots; Kenya where the Supreme Court constitutionally authorized an electronic investigation and nullified the first official result; or Gambia where the incumbent allowed the electoral commission full control of the aggregation of results without interfering. This substantiates the claim that a win is almost certain where the incumbent has control of the data aggregation process and vice versa.

We appear to be at a new frontier where the rules of engagement need to be reviewed, so that both local and international monitors would have de jure and de facto access to all EMB procedures. One solution is to establish and institutionalize internationally agreed ICT protocols that would allow real time electronic monitoring access to EMB data management

⁶⁹ Baffour Ankomah, 'Bullyboy tactics', *New African*, March 2017, pp. 10-11.

processes, and to which countries can sign up, so that independent election monitors could conduct forensic audits to investigate hacking claims and counter claims. Otherwise when a country gets stuck in an electoral dispute, there would be no agreed norms or template for the international community to follow even if that state would like international intervention. However, the existence of an internationally agreed protocol would create foreign policy opportunities for any individual state to benefit from potential international arrangements and expertise hitherto considered as barred politically.

There are also a wide variety of practical dilemmas ahead for any country. For example, come the next Kenyan presidential election, observer missions must consider whether the legislation in place would guarantee a justifiable playing field, and whether there is room for political accountability to a court, or else observers would be going to operate in a climate where the existing legislation has already guaranteed another rigging to take place. International monitors would also need to negotiate data access protocols to allow real time monitoring of the data management systems of Kenya's electoral commission. Otherwise, the establishment can bully the process as happened in Gabon, and observers cannot vouch for the integrity of EMB electronic data as happened in Ghana. Moreover, the non-partisan integrity of international monitors would be in high demand. On the one hand, the role of international observers has become the norm, and monitoring electronic data systems of EMBs is now a necessity. However, individual states would be debating to what extent potentially partisan foreigners should have access to the electronic data management of their elections.

Establishing the ICT protocols is not an impossible task. It is do-able, objective and verifiable, and can be institutionalized across international boundaries. If everyone is following the agreed forensic audit procedures, all parties will be on the same page with the aggregation process. Furthermore, following internationally agreed ICT protocols could impact on the lingering issue of partisan international observers, and reduce elements of forum shopping in the long run.