



Election technology in Kenya

A tech explainer



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Contents

<i>Introduction</i>	1
<i>Background: Kenya's 2007 Election</i>	1
<i>Reforming Voting in Kenya post-2007</i>	2
<i>What is KIEMS?</i>	4
Candidate Registration Management System (CRMS)	4
Biometric Voter Registration (BVR)	4
Electronic Voter Identification (EVID)	4
Electronic Results Transmission System (RTS)	5
<i>ECK to IEBC; a new EMB, a new start?</i>	5
<i>Kenyan Biometric Voter Registration</i>	6
<i>Voting Procedure</i>	7
FORM 32A	9
<i>Counting and Tallying Process</i>	10
FORM 33.....	11
FORM 34A	11
<i>Results Transmission Process</i>	13
<i>2013 Election - the first deployment of BVR in Kenya</i>	14
<i>2017 Presidential election</i>	15
Accusations of hacking ("Fungua server")	17
August 2017 - election annulled	18
October 2017 - election re-run	18
<i>2022 Presidential Election</i>	19
2021 Voter registration and abnormal voter transfers	20
A manual register, just in time	21
Hacking Accusations, 2022 Edition	22
<i>Conclusion</i>	22

INTRODUCTION

Electoral processes - along with elections themselves - are one of the largest government data-gathering exercises undertaken outside of censuses (periodic governmental counts of a country's population). This makes electoral processes ripe for data exploitation and abusing the privacy of individual electors.

Many democracies, particularly younger democracies, are increasingly looking to employ technology - including biometrics - to coordinate the running of their electoral processes. Governments give various reasons for the use of these technologies, such as transparency, voter identification, and fighting corrupt practices in attempts to increase confidence in election results.

These databases and the devices used to access and edit them are susceptible to abuse, manipulation, and theft. Moreover, technology failures can lead to erroneous results, the annulment of elections, or worse.

In this piece, we look at how Kenya's post-election violence of 2007 led to sweeping changes, including the mass implementation of technologies into its election processes.

BACKGROUND: KENYA'S 2007 ELECTION

Kenya's disputed December 2007 Presidential Election was marred by post-election violence, with claims of vote-rigging levelled against both sides¹ after record-high turnout (of *over 100%* in some constituencies) led to one of the closest elections in Kenya's 44 years of independence. The declared result saw incumbent *Mwai Kibaki* retaining his post of President with 46.42% of the vote, beating his opponent *Raila Odinga* by almost 232K votes².

¹ <https://www.nytimes.com/2007/12/31/world/africa/31kenya.html>

² <http://news.bbc.co.uk/1/hi/world/africa/7164890.stm>

According to election observers, ballot boxes were stuffed by both sides. In one constituency, Mr Odinga won 100.5 per cent of valid votes. In Maragwa, a constituency with near-total support for Mr Kibaki, turnout was 115 per cent³.

Over one thousand people died in the post-election violence⁴ with more than three thousand suffering injuries. Over 100,000 private properties (including residential houses, commercial premises, vehicles, farms) were destroyed and nearly five hundred Government owned properties (offices, vehicles, health centres, schools and trees) were destroyed. Over 600,000 people were displaced as a result⁵. In December of 2010, the International Criminal Court Prosecutor presented the case against six Kenyans for crimes against humanity⁶ for their part in the post-election violence. Eventually, charges were dropped against all six⁷.

REFORMING VOTING IN KENYA POST-2007

In March 2008, the Government of Kenya commissioned *The Independent Review Commission*⁸ (IREC), to investigate the 2007 elections and their aftermath.

The Commission's terms of reference were broad;

- To Analyze the constitutional and legal framework and identify weaknesses and inconsistencies in the electoral laws;
- To Examine the organizational structure, composition and management system of [the Electoral Commission of Kenya];

³ <https://www.independent.co.uk/news/world/africa/kibaki-stole-kenyan-election-through-voterigging-and-fraud-772349.html>

⁴ <https://www.reuters.com/article/lifestyle/kenyas-20078-post-election-violence-still-haunts-journalists-study-says-idUSKCNORP00X/>

⁵ <https://www.britannica.com/place/Kenya/Disputed-2007-and-2013-elections-a-new-constitution-and-ICC-proceedings>

⁶ <https://www.icc-cpi.int/news/kenyas-post-election-violence-icc-prosecutor-presents-cases-against-six-individuals-crimes>

⁷ <https://www.theguardian.com/world/2016/apr/05/international-criminal-court-william-ruto-kenya-deputy-president-election-violence>

⁸

<https://web.archive.org/web/20130928045359/http://statehousekenya.go.ke/news/march08/2008130301.htm>

- To Examine public participation in the 2007 electoral processes;
- To Investigate the organization and conduct of the 2007 electoral operations including civic and voter education among others;
- To Investigate vote counting and tallying at all levels; and
- To assess the functional efficiency of [the Electoral Commission of Kenya] to discharge its mandate.

Selected to Chair this Commission was South African Judge Johann Kriegler (giving rise to the report's unofficial name of *The Kriegler Report*⁹), whose prior tenure had included heading South Africa's temporary Electoral Commission ahead of the country's first democratic elections in 1994¹⁰, afterwards being appointed to South Africa's Constitutional Court from 1995 until his retirement in 2002¹¹.

The report made a series of wide-ranging recommendations, concluding that the 2007 election process had been so flawed as to make the announced results meaningless.

"The conduct of the 2007 elections was so materially defective that it is impossible – for [The Independent Review Commission] or anyone else – to establish true or reliable results for the presidential and parliamentary elections."

The Kriegler Report's findings¹²

As a result of the *Kriegler Report*, in the early 2010s Kenya underwent sweeping changes: ushering in a new Constitution as well as a series of Acts consolidating voting laws; extending the right of suffrage; and introducing new technologies into its voting system in the hope of bringing transparency to the process, and removing double-registrations and "ghost voters" from the roll.

These technologies became collectively known as the **Kenyan Integrated Elections Management System (KIEMS)** and cover all stages of the electoral process except casting ballots and counting, which are still a manual exercise.

⁹ <http://libraryir.parliament.go.ke/handle/123456789/549>

¹⁰ <https://mg.co.za/article/2014-05-07-making-the-impossible-happen/>

¹¹ <https://www.gcsa.co.za/law-journals/2003/april/2003-april-vol016-no1-pp23-and-26-28.pdf>

¹² <https://nation.africa/kenya/news/kriegler-s-verdict-on-elections--559866>

WHAT IS KIEMS?

The Kenyan Integrated Elections Management System (*KIEMS*) is technically and logically split into a few constituent parts¹³

- Candidate Registration Management
- Biometric Voter Registration
- Electronic Voter Identification
- Electronic Results Transmission

Candidate Registration Management System (CRMS)

KIEMS provides an online interface used to register eligible nominated candidates for upcoming elections. This system captures and stores candidates' biographies, photographs, elective positions, and electoral areas.

Biometric Voter Registration (BVR)

Biometric voter registration is a technology which creates a digital representation of an individual's biometrics such as fingerprints, iris/eye scans, and facial photographs, and adds them to a voter register alongside other individual biographic details such as name, address, and date of birth.

Electronic Voter Identification (EVID)

Electronic voter identification is a technology which is used to automatically identify an eligible voter, usually through taking a biometric reading (e.g. fingerprint), creating a digital representation, and matching against the biometric voter register.

¹³ <https://www.standardmedia.co.ke/ureport/article/2001250595/what-kenyans-need-to-know-about-the-iebc-kiems-kit-and-provisional-election-results-transmission>

Electronic Results Transmission System (RTS)

The electronic transmission of results refers to transmitting polling station results for central tallying. This may be (as was used in early iterations) a simple SMS, or (as in newer iterations) a fully encrypted data channel for sending tabulated polling station level data regionally, and nationally.

ECK TO IEBC; A NEW EMB, A NEW START?

The 2008 Kriegler Report¹⁴ made recommendations for sweeping reform to Kenya's Electoral Management Body (*EMB*) of the time, the *Electoral Commission of Kenya (ECK)*, including in the areas of:

- Legal Framework
- Institutional design and management
- Structure/Composition
- Institutional Independence
- Operational Procedures
- Funding

On the heels of Kenya's 2010 Constitution, in 2011 the *Independent Electoral and Boundaries Commission (IEBC)* was formed as a Constitutional Commission, established under Chapter 15 of the new Constitution, with their mandate provided under Article 88 of the Constitution.

The *IEBC* were given powers to regulate political parties and voter registration, responsibility for establishing, reviewing and drawing new constituency boundaries, as well as to instruct audits of the voter roll.

¹⁴ https://www.kas.de/c/document_library/get_file?uuid=d8aa1729-8a9e-7226-acee-8193fd67a21a&groupId=252038

KENYAN BIOMETRIC VOTER REGISTRATION

The Kriegler Report highlighted multiple problems with the 2007 election. It identified statistically unlikely turnouts of 100%, which they conclude "clearly suggests the existence of 'ballot stuffing'", along with highlighting that on the basis of the Central Bureau of Statistics estimates, "it is probable that the names of some 1.2 million deceased voters were still on the register [in the 2007 elections]".

As a result, they recommended the adoption of a new voter registration and voting system¹⁵ to be enacted and prescribed through law.

These recommendations led to the creation of the Elections Act of 2011¹⁶ containing regulations for the registration of voters, and defining the voting process from end to end. Importantly, the act included paragraphs on the collection of biometrics and on the conducting of elections by electronic means:

Electronic voting

Where the Commission intends to conduct an election by electronic means, it shall, not later than three months before such election, publish in the Gazette and publicise through electronic and print media of national circulation and other easily accessible medium, guidelines that shall apply in such voting

[...]

Registration particulars

A register of voters shall contain biometric data and the particulars set out in Form A in the Schedule

In 2011 the IEBC ran a tender for Biometric Voter Registration (*BVR*) kits, awarding the contract to the Canadian company CODE Inc¹⁷. Blaming time pressure, the Kenyan Government then directly procured *BVR* kits from the French company *Safran Morpho*¹⁸ (later *OT-Morpho*, then *IDEMIA*) with whom they'd already contracted to produce Kenyan ID cards in 2004.

¹⁵

https://web.archive.org/web/20090205010017/http://www.communication.go.ke/Kriegler_IREC/EXECUTIVE_SUMMARY_FINAL.pdf

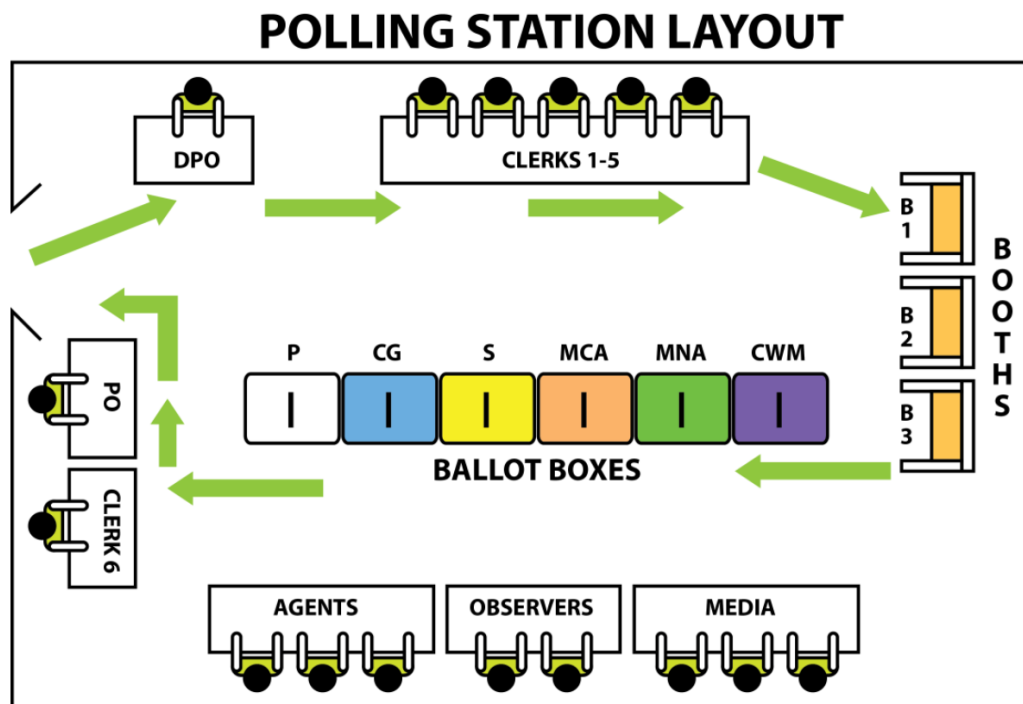
¹⁶ <https://www.iebc.or.ke/uploads/resources/902SFZiDqt.pdf>

¹⁷ <https://www.asmag.com/showpost/12164.aspx>

¹⁸ <https://nation.africa/kenya/news/politics/deal-struck-to-buy-biometric-registration-kit--823368>

In late 2012, a massive biometric voter registration drive was commenced in an attempt to register all 22 million eligible voters in only one month, after these procurement issues meant the devices for *BVR* arrived months later than planned¹⁹. The *IEBC* originally had a target of registering roughly 80% of the 22m eligible voters, but in the end only managed to register 14.3m voters²⁰ - 65% of those eligible. The *IEBC*'s Chairman blamed this missed target on voter apathy²¹: "Under the Kenyan Constitution, voting is not compulsory and voter registration is not compulsory, I can't force people to go and register."

VOTING PROCEDURE



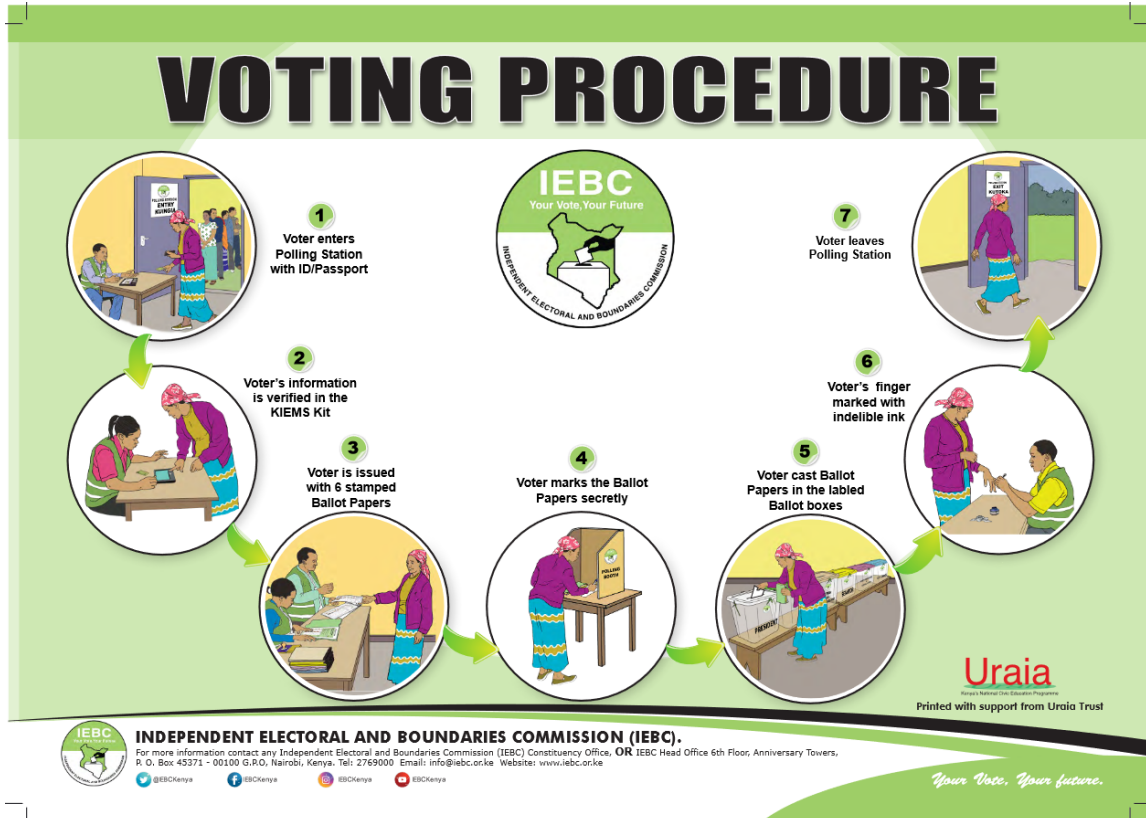
¹ <https://www.iebc.or.ke/uploads/resources/pdQMe3WKeV.pdf> p.145

¹⁹ <https://www.voanews.com/a/kenya-introduces-biometrics-for-voter-registration/1543269.html>

²⁰ <https://www.standardmedia.co.ke/article/2000073374/kenya-iebc-misses-target-by-four-million-voters>

²¹ <https://www.standardmedia.co.ke/article/2000073374/kenya-iebc-misses-target-by-four-million-voters>

The Kenyan voting procedure has the following steps:



2 IEBC branded poster detailing the voting procedure in Kenya. Source: <https://uraia.or.ke/knowledgebase/voting-procedure-in-kenya/>

- Elector presents Valid Kenyan ID Card or Passport to IEBC clerk.
- Elector places finger on the Electronic Voter ID system.

OR

- Elector is confirmed to be on the printed copy of the register, and fills FORM 32A allowing them to vote.

THEN

- Clerk returns IEBC stamped ballot papers.
- Elector votes in secret & casts ballot in the boxes.
- Elector has their little finger marked with indelible ink.

FORM 32A

FORM 32A

(r.69(1)(h)(ii))

VOTER IDENTIFICATION & VERIFICATION FORM

County: County Code:
 Constituency: Constituency Code:
 County Assembly Ward: CAW Code:
 Polling Centre: Code:
 Polling Station:

This is to confirm that the voter whose particulars are indicated below was not identified by the electronic voter identification device but was identified in the print out of the register of voters in respect of the above Polling Station.

Particulars of Voter

Surname:	
Other Names:	
Gender:	
ID/Passport No.	

Witnesses

No.	Name of Candidate or Agent	ID/Passport No.	Party Name/ Independent Candidate	Tel. Contact	Signature	Date
1.						
2.						
3.						

Name of the Presiding Officer: Name of Voter.....

ID Number: ID No. /Thumbprint.....

Signature: Signature.....

Date: Date.....

Stamp

COUNTING AND TALLYING PROCESS

The following steps comprise the counting and tallying process:²²

1. The process shall be continuous and not be interrupted, “so far as practicable.”
Regulation 75 (4)
2. The Presiding Officer [PO] shall empty the ballot box onto the counting table for sorting purposes.
3. The PO takes one ballot paper after another, displays it to the observers and agents for verification of the ballot
4. He should call out the name of the candidate in whose favor the vote was cast.
5. In the process he should place the ballot papers on a separate pile for each candidate,
6. Then should count the votes for each candidates and
7. Fill out the result on the tallying sheet (Form 33 in the Regulations Schedule)

After tallying, the results are recorded on Form 34A.

²² <https://roggkenya.org/2017/07/27/monitor-the-counting-and-tallying-part-2-of-our-guide/>

Form 34 A

(r.79(2)(a))

PRESIDENTIAL ELECTION RESULTS AT THE POLLING STATION

S/Number.....

Name of Polling Station: Code.....

Ward..... Code.....

Constituency..... Code.....

County..... Code.....

Number of votes cast in favour of each candidate:

Name of Candidate	No. of Valid Votes Obtained
Total number of valid votes cast	

Polling Station Counts

1.	Total Number of Registered Voters in the Polling Station;	
2.	Total Number of Rejected Ballot Papers;	
3.	Total Number of Rejection Objected To Ballot Papers;	
4.	Total Number of Disputed Votes;	
5.	Total Number of Valid Votes Cast;	

Decision(s) on disputed votes if any

Serial Number of Ballot Paper (s) with disputed vote	Name of Candidate assigned the vote

Declaration

We, the undersigned, being present when the results of the count were announced, do hereby declare that the results shown above are true and accurate count of the ballots in.....Polling Station..... Constituency.

Presiding Officer:*Signature*..... Date.....

Deputy Presiding Officer:*Signature*..... Date.....

Agents or Candidates (if present)

No.	Name of Candidate or Agent	ID/Passport No.	Party Name/ Independent Candidate	Tel. Contact	Signature	Date
1.						
2.						
3.						

Reasons for Refusal to Sign (if any)

.....
.....
.....
.....
.....

Presiding Officer's Comments:

.....
.....
.....
.....
.....

RESULTS TRANSMISSION PROCESS

A digital copy of the Form 34A is made, and sent together ("bundled") with a textual representation of the results for centralised provisional tallying. The physical papers are couriered in parallel as an official record.

2013 ELECTION - THE FIRST DEPLOYMENT OF *BVR* IN KENYA

In the 2013 Elections, a significant number of polling stations saw the kits procured for both Electronic Voter Identification and Results Transmission failing.

As of 2013, only 23% of Kenya had electricity²³, and the school buildings being used as polling stations generally were not equipped with power outlets — with this being particularly true in rural areas.

As a result, when the laptops being used for Electronic Voter Identification [began to run out of battery, they were unable to be charged²⁴, forcing clerks to resort to the printed register for manual verification of voters.

In addition, the mobile phones supposed to pass tallies of *provisional results* for centralised calculation didn't work due to forgotten PINs, low battery, and data connectivity problems²⁵, with poll workers being airlifted by helicopter to Kenya's capital, Nairobi, to hand-deliver results to the *IEBC*.

Confounding these troubles, the *IEBC*'s centralised tallying servers overloaded and collapsed²⁶ after processing only 17,000 of the 33,000 polling station results²⁷ forcing the *IEBC* to suspend announcing provisional results, having to wait for the physical FORM 32As to arrive into Nairobi.

Further, a "computer bug" was blamed for counting each rejected ballot 8 times²⁸ in the initial tally - artificially inflating the number of rejected ballots to more than 330,000 instead of the correct figure of circa 41,500.

²³ <https://www.npr.org/sections/alltechconsidered/2013/03/09/173905754/how-kenyas-high-tech-voting-nearly-lost-the-election>

²⁴ <https://aceproject.org/today/feature-articles/the-role-of-technology-in-the-outcome-of-the>

²⁵ <https://www.aljazeera.com/opinions/2013/3/29/technology-transparency-and-the-kenyan-general-election-of-2013>

²⁶ <https://www.ft.com/content/c69cb0da-8679-11e2-ad73-00144feabdc0>

²⁷ <https://icj-kenya.org/wp-content/uploads/2023/01/ELECTION-TECHNOLOGY-AND-ELECTORAL-JUSTICE-IN-KENYA-Final-1.pdf>

²⁸ <https://www.bbc.co.uk/news/world-africa-21707152>

After 6 days, opposition candidate *Uhuru Kenyatta* was announced as the winner, having polled 50.07% - a minuscule majority of just 8,000²⁹ out of 12 million ballots cast.

The losing incumbent *Raila Odinga* alleged voter fraud and petitioned Kenya's Supreme Court³⁰ for the nullification of the official results, which led to a recount of ballots at 22 polling stations. After this recount, *Uhuru Kenyatta* was affirmed as the President Elect of Kenya³¹.

The machines procured for the 2013 election were ultimately put into storage, with 125 of the Electronic Voter ID kits going on to be stolen³².

The Commission stated that these devices only contained raw registration data that has not been processed for inclusion in the register of voters, and that any data stored on the devices is encrypted at rest³³.

2017 PRESIDENTIAL ELECTION

Having deprecated and put the kits procured for the 2013 election into long-term storage, in 2017, the Kenyan government went on to contract OT Morpho/IDEMIA - the successor company to Safran Morpho - for 45,000 MorphoTablets³⁴, boasting the following specification:

- An 8-inch WXGA (800*1280) display
- Qualcomm Snapdragon 410 processor
- 2GB RAM
- 16GB internal storage expandable via Micro SD Card
- A 5100mAh battery said to last up to 24hours
- 13MP main camera and a 2MP front camera
- 3.5mm headphone jack

²⁹ https://www.washingtonpost.com/world/africa/kenyatta-wins-kenya-presidential-election-by-narrow-margin/2013/03/09/c07ae7fa-88b1-11e2-9d71-f0feafdd1394_story.html

³⁰ <https://www.bbc.co.uk/news/world-africa-21812559>

³¹ <https://www.dw.com/en/kenyan-court-upholds-kenyatta-election-odinga-concedes/a-16710263>

³² <https://www.standardmedia.co.ke/article/2000073374/kenya-iebc-misses-target-by-four-million-voters>

³³ <https://www.citizen.digital/news/stolen-laptops-bvr-kits-were-not-used-in-2017-2022-elections-iebc-n316222>

³⁴ <https://techweez.com/2017/05/31/morpho-tablet-2-kenya-general-election-2017/>

- Optical fingerprint reader
- Contact and Contactless smart card reader capabilities
- Dual SIM support with 4G voice and data support
- Android 5.0 Lollipop
- Bluetooth 4.1 (BLE)

Each tablet contained a Micro SD card loaded with the roll of eligible voters for a given polling booth. Electors were identified by the MorphoTablet using their fingerprint.

In addition to Electronic Voter Identification, the tablets were to be used for provisional results transmission. After filling out the official results form (Form 34A), the presiding officer at each station was to key into the tablets the numeric results, together with a scan of the form - referred to as a *Bundle*. During testing it had been demonstrated that the send icon on the tablet was disabled until the scanned form had been added³⁵.

Things turned out differently on the day, however. A configuration mistake on the tablets meant that the presiding officers were able to submit the numeric results without attaching a copy of the official results form (Form 34A)³⁶. In addition, many of the Form 34As which were attached were simply photographs taken with the tablet's inbuilt camera rather than legible scans of the document - and at least one Form 34A was handwritten in a school exercise book³⁷

To give connectivity for results transmission, the tablets were given SIM cards for two different Mobile Network Operators from *Safaricom*, *Telkom Kenya*, and *Airtel Kenya*³⁸ which provided a VPN. However, 11,000 - one quarter of all polling stations - were said to be outside 3G range in the 2017 polls³⁹.

The IEBC announced from provisional results that the [incumbent President Uhuru Kenyatta had won the election with a margin of 9%, receiving 54% of the votes cast and beating the 50% threshold for a run-off⁴⁰.

³⁵ <https://nation.africa/kenya/news/politics/IEBC-tests-results-transmission/1064-4042450-lpl4hmz/index.html>

³⁶ https://www.cartercenter.org/resources/pdfs/news/peace_publications/election_reports/kenya-2017-final-election-report.pdf

³⁷ <https://www.tuko.co.ke/249395-the-mystery-a-handwritten-form-34a-iebcs-website.html>

³⁸ <https://sokodirectory.com/2017/09/kenyan-elections-safaricom-ready-face-investigations/>

³⁹ <https://allafrica.com/stories/202007160740.html>

⁴⁰ <https://www.aljazeera.com/news/2017/8/11/uhuru-kenyatta-wins-kenya-presidential-election>

ACCUSATIONS OF HACKING ("FUNGUA SERVER")

The opposition leader, *Raila Odinga*, told a news conference that "the 2017 general election was a fraud"⁴¹ and immediately petitioned the Kenyan Supreme Court to annul the vote.

Just days before the 2017 elections, the chief of IT for KIEMS - Chris Msando - was found dead, having been tortured and murdered⁴². The opposition claimed he had been killed after refusing to surrender a password⁴³ to rig the election. Mr. Odinga further claimed that between 12:37 p.m. and 4:00 p.m. on the day of the election, hackers had used Chris Msando's login credentials⁴⁴ to load "an algorithm which is a formula to create a percentage gap of 11 percent between our numbers" - to doctor results from polling stations in favour of the incumbent.

Responding to this, the *IEBC's* Chair dismissed the hacking claims, stating "hacking was attempted but did not succeed"⁴⁵, with the *IEBC's* Chief Executive going on to tell a news briefing⁴⁶: "I wish to confirm that our elections management system is secure, [...] There were no external or internal interferences with the system at any point before, during and after the voting."

The Swahili phrase *Fungua server* ("Open the servers") became a mantra for the opposition in Kenya.

In response to Mr. Odinga's Court Petition, the Kenyan Supreme Court ordered *IEBC* to open its servers to inspection, which it refused to do⁴⁷.

⁴¹ <https://www.theguardian.com/world/2017/aug/09/kenya-presidential-election-raila-odinga-early-results-uhuru-kenyatta>

⁴² <https://www.bbc.co.uk/news/world-africa-40774938>

⁴³ <https://www.standardmedia.co.ke/entertainment/news/article/2001251941/chris-msando-killed-over-a-password-says-raila-odinga>

⁴⁴ <https://www.nytimes.com/2017/08/09/world/africa/kenya-election-results-raila-odinga.html>

⁴⁵ <https://www.aljazeera.com/news/2017/8/11/election-chief-says-hacking-attempt-did-not-succeed>

⁴⁶ <https://www.nytimes.com/2017/08/09/world/africa/kenya-election-results-raila-odinga.html>

⁴⁷ <https://www.reuters.com/article/world/kenya-court-election-board-refused-to-give-access-to-servers-idUSKCN1BV12J/>

AUGUST 2017 - ELECTION ANNULLED

In its Determination⁴⁸ on the Petition, the Court was satisfied that the *IEBC* "committed irregularities and illegalities inter alia, in the transmission of [the 2017 Presidential Election] results" and that these affected the integrity of the election.

In a majority 6:2 judgment, the Supreme Court granted the petition⁴⁹ and annulled the vote, ordering another vote to be run within 60 days⁵⁰.

Philomena Mwilu, the deputy chief justice, whilst reading out portions of the judgment said the Court upheld the opposition claim that the election result was declared before all results from more than 40,000 of Kenya's polling stations had been received⁵¹.

OCTOBER 2017 - ELECTION RE-RUN

The Opposition set out 25 demands of the IEBC for the re-run⁵², with *Railia Odinga* ultimately pulling out of the re-run election and urging his followers to boycott the poll.

With polling suspended in 25 opposition stronghold constituencies due to alleged security risks, incumbent *Uhuru Kenyatta* was again declared winner, receiving 98% of the vote on a turnout of just under 39%⁵³.

After the re-run election, petitions were again made to the Supreme Court⁵⁴, although ultimately they were dismissed by the Court⁵⁵, who upheld the re-election of *Kenyatta*.

⁴⁸ <https://kenyalaw.org/caselaw/cases/view/140478/>

⁴⁹ <https://aceproject.org/ero-en/regions/africa/KE/kenya-full-judgment-of-the-supreme-court/view>

⁵⁰ <https://www.theguardian.com/world/2017/sep/01/kenyan-supreme-court-annuls-uhuru-kenyatta-election-victory>

⁵¹ <https://www.theguardian.com/world/2017/sep/20/kenyan-election-rerun-not-transparent-supreme-court>

⁵² <https://nation.africa/kenya/news/Nasa-repeat-election-demands-Raila-Odinga/1056-4083440-pbgmtwz/index.html>

⁵³ <https://www.bbc.co.uk/news/world-africa-41807317>

⁵⁴ <https://www.voanews.com/a/kenya-election-season-extended-petitions-filed/4104774.html>

⁵⁵ <https://qz.com/africa/1133526/kenya-elections-2017-kenyas-supreme-court-has-upheld-the-re-election-of-president-uhuru-kenyatta>

In 2020, the Kenyan Parliament passed a recommendation barring IDEMIA from future tenders for a period of 10 years⁵⁶, but this was overturned by Kenya's High Court in May 2022⁵⁷

2022 PRESIDENTIAL ELECTION

In April 2021, in preparation for the 2022 election, the *IEBC* released a tender for upgrading KIEMS and providing MorphoTablets⁵⁸. After the initial process was annulled by Kenya's Public Procurement Administrative Review Board (*PPARB*)⁵⁹, on the 3rd November 2021, the *IEBC* announce the award of the tender to Smartmatic International Holdings BV⁶⁰.

Of the 45,000 kits acquired for the 2017 elections, the *IEBC* stated 41,000 were "in good working condition". The tender saw Smartmatic providing 14,100 additional MorphoTablets⁶¹, along with a custom OS and replacement software to run on all 55,100 kits⁶².

There were reports that IDEMIA withheld the biometric and voter data they had collected, refusing to transfer it to Smartmatic based on outstanding payments owed by the *IEBC*⁶³. This issue was ultimately resolved outside of the courts.

Learning from connectivity failures in previous years, it was found 1,111 polling centres did not fall within 3G coverage areas⁶⁴, with the *IEBC* providing Thuraya Satellite Phones⁶⁵ to transmit results from stations within the polling centres.

⁵⁶ <https://www.businessdailyafrica.com/bd/economy/mps-slap-10-year-ban-on-ot-morpho-2247754>

⁵⁷ <https://www.standardmedia.co.ke/kenya/article/2001398468/questions-as-blacklisted-company-on-the-verge-securing-more-electoral-deals>

⁵⁸ <https://www.iebc.or.ke/uploads/tenders/s6mOW7E2Hv.pdf>

⁵⁹ <https://www.pd.co.ke/news/blow-to-iebc-as-board-revokes-kiems-tender-92735/>

⁶⁰ <https://www.kenyans.co.ke/news/70217-dutch-company-beats-controversial-ot-morpho-ksh4b-elections-tender>

⁶¹ <https://www.iebc.or.ke/uploads/resources/RNMB9N2EwU.pdf>

⁶² <https://icj-kenya.org/wp-content/uploads/2023/01/ELECTION-TECHNOLOGY-AND-ELECTORAL-JUSTICE-IN-KENYA-Final-1.pdf>

⁶³ <https://theinformer.co.ke/41617/squabble-over-sh800-million-debt-could-prevent-iebc-register/>

⁶⁴ <https://icj-kenya.org/wp-content/uploads/2023/01/ELECTION-TECHNOLOGY-AND-ELECTORAL-JUSTICE-IN-KENYA-Final-1.pdf>

⁶⁵ <https://en.wikipedia.org/wiki/Thuraya>

2021 VOTER REGISTRATION AND ABNORMAL VOTER TRANSFERS

Using its new powers, in 2021 the *IEBC* engaged *KPMG* to conduct an audit of the voter register⁶⁶ to verify its accuracy including recommendations for enhancing its accuracy, as well as to update the register.

To finalise the list of eligible voters, and in accordance with the Elections Act, the *IEBC* conducted three rounds of voter registration over October-November 2021, January-February 2022, and a final round ending in May 2022 using the MorphoTablets' *BVR* functionality⁶⁷, originally trying to reach six-to-seven million new voters. They later dropped this target to 4.5 million, but saw uptake of under 2% in cities such as Mombasa⁶⁸, with particular apathy amongst younger, newly-eligible electors.

In parallel to the voter registration system, the Kenyan government introduced several options for registered voters to verify that they had been effectively registered and that their details were correct. During this verification exercise, many voters raised concerns that the electoral areas in which they had registered had been changed without their knowledge and approval⁶⁹.

KPMG confirmed in its audit report that it had identified a trend of “abnormal” voter transfers⁷⁰ between the 2017 general election and May 2022. The *IEBC* later announced that three *IEBC* officials had been arrested for involvement in illegal transfer of voters. On July 7, the chair of the *IEBC* announced that those officials were suspended⁷¹ and referred to the director of public prosecutions.

⁶⁶ <https://assets.kpmg.com/content/dam/kpmg/ke/pdf/rc/ita/audit-of-the-register-of-voters-media-release-04-april-2017.pdf>

⁶⁷ https://www.cartercenter.org/resources/pdfs/news/peace_publications/election_reports/kenya-2017-final-election-report.pdf

⁶⁸ <https://www.dw.com/en/concern-as-kenyas-voters-shun-registration-for-2022-election/a-59687919>

⁶⁹ <https://www.theafricareport.com/210320/kenya-electoral-body-iebc-on-the-spot-over-irregular-mass-voter-transfer/>

⁷⁰ <https://www.iebc.or.ke/uploads/resources/JqmDO7vRL0.pdf>

⁷¹ <https://www.youtube.com/watch?v=hMdoJimxpd0>

A MANUAL REGISTER, JUST IN TIME

The *IEBC* had initially intended to rely solely on the inbuilt Biometric Voter Register stored in the tablets. However, after a successful legal challenge just days before the 2022 election, Kenya's High Court intervened ordering the *IEBC* to also distribute a printed register⁷² as it found the *IEBC*'s decision to remove a printed register unconstitutional, and not in accordance with backup provisions passed by Parliament in the wake of 2013's technical failures.

The inclusion of the manual register turned out to be essential. On election day, the *IEBC* reported that KIEMS kits failures necessitated resort to the manual register in 238 polling stations⁷³ of the 46,229 total stations on election day.

Reports by large election observation missions such as the *EU Election Observation Mission*⁷⁴ and the *National Democratic Institute*⁷⁵ identified some problems with the *KIEMS* kits on election day, such as delays in identifying fingerprints, but found that most challenges could be addressed by backup measures built into the *KIEMS* system, such as via alphanumeric lookup and facial scanning with comparison against the national ID card.

After the results of the vote — *William Ruto* winning 7,176,141 votes totalling 50.5% of the final vote while *Raila Odinga* got 6,942,930 totalling 48.8% of the final vote⁷⁶ — were announced by *IEBC* Chairman *Wafula Chebukati*, four *IEBC* board members dissented, claiming amongst other things that the vote tally totalled 100.01%⁷⁷. This was demonstrated to be a simple misunderstanding of rounding to two decimal places.

⁷² <https://indigo.openbylaws.org.za/articles/2022-08-12/carmel-rickard/last-minute-kenyan-court-order-overturns-ban-on-manual-voters-register-for-polls>

⁷³ <https://privacyinternational.org/long-read/5053/our-final-report-kenyas-2022-election-collaboration-carter-center-election-expert>

⁷⁴ https://www.eeas.europa.eu/eom-kenya-2022/final-report-european-union-election-observation-mission-kenya-2022_en

⁷⁵

https://www.ndi.org/sites/default/files/NDI%20IRI_International%20Election%20Observation%20Mission%20to%20Kenya_0.pdf

⁷⁶ <https://www.bbc.co.uk/news/world-africa-62444316>

⁷⁷ <https://www.the-star.co.ke/news/2022-08-16-why-4-iebc-commissioners-are-wrong-on-vote-tally/>

HACKING ACCUSATIONS, 2022 EDITION

The runner-up *Raila Odinga* (amongst other petitioners), immediately challenged the result in Kenya's Supreme Court⁷⁸.

Amongst the petitions were direct accusations of coordinated rigging levelled against the *IEBC* involving 56 hackers and the manipulation of digital copies of the form 34As⁷⁹.

In a strong judgment, the Court dismissed all challenges, finding that some of the petitioners had falsified evidence, and ruled that *William Ruto* had been rightfully elected President⁸⁰.

CONCLUSION

The Kenyan government's employment of election technologies such as biometric voter registration, electronic voter identification, electronic results transmission systems, and electronic candidate registration management systems has presented both challenges and positive outcomes for democracy.

Election technologies have the potential to improve transparency and foster public trust in electoral systems. In the case of Kenya, there has been a decrease in violence in relation to elections since the implementation of the above-mentioned election technologies.

Although the extent to which, if any, the use of these technologies played a part in the decrease in violence around elections⁸¹ is difficult to conclusively assess, it is worth noting that the country has seen reduced occurrences of corruption and ballot box stuffing⁸².

It is important to accentuate however, the specific circumstances in which the use of election technologies could be seen as a possible solution to uphold democracy and avoid corruption. In Kenya, the deployment of election technologies was an attempt to engender

⁷⁸ <https://www.bbc.co.uk/news/world-africa-62599219>

⁷⁹ <https://qz.com/did-hackers-manipulate-kenyas-presidential-poll-results-1849460625>

⁸⁰ <https://www.bbc.co.uk/news/world-africa-62785434>

⁸¹ <https://thecommonwealth.org/news/kenya-elections-largely-peaceful-and-transparent-say-commonwealth-observers>

⁸² <http://kenyalaw.org/caselaw/cases/view/240578/>

trust in the voting process by partially eliminating the potential for human corruption. Other instances where similar technologies have been used, such as in Mozambique's 2024 election, have led to irregularities around voter registration and a decrease in confidence⁸³ and independence of the election administration. Additionally, as shown by the various technology failures mentioned above, it is important when rolling out any technology, that there is a suitable manual process in place that is able to replace the automation.

The use of these technologies in Kenya raise numerous questions that Election Observers must take into consideration, such as:

- Does the existing data protection legislation sufficiently protect voters' personal data, and does it cover the processing of personal data by public authorities?
- Have data protection and human rights risk assessments been undertaken in advance of the use of election technologies?
- Is it necessary to process biometric data in order to effectively register and identify voters?
- What heightened safeguards have been put in place for processing biometric data during the election process?, and
- What measures have been taken to ensure internet connectivity to facilitate the accurate transmission of election results?

These questions are crucial in assessing (biometric) data processing activities; analysing the potential for voter manipulation; protecting privacy; and better understanding the roles of all stakeholders to the electoral process, ranging from the electoral management body to the private companies providing the technologies.

To learn more about our general advocacy points in relation to the use of election technologies in the Kenyan context, see our accompanying advocacy piece: <https://privacyinternational.org/advocacy/5447/elections-technology-our-recommendations-1-general-recommendations-bvr-evid-and>. We advocate for the human rights-compliant use of these technologies, in order to improve privacy, transparency and public trust in elections and democratic processes.

⁸³ <https://www.bloomberg.com/news/articles/2024-06-23/mozambique-elections-biometric-systems-allow-ruling-party-to-maintain-control>



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