

REPUBLIC OF KENYA

IN THE SUPREME COURT OF KENYA AT NAIROBI

ELECTION PETITION NO 1 OF 2017

H.E RAILA AMOLO ODINGA 1ST PETITIONER

H.E STEPHEN KALONZO MUSYOKA..... 2ND PETITIONER

AND

INDEPENDENT ELECTORAL

AND BOUNDARIES COMMISSION.....1ST RESPONDENT

THE CHAIRPERSON INDEPENDENT ELECTORAL

AND BOUNDARIES COMMISSION.....2ND RESPONDENT

H.E UHURU MUIGAI KENYATTA..... 3RD RESPONDENT

REPLYING AFFIDAVIT

I, **JAMES MUHATI** of P.O Box 45371-00100 Nairobi being a male Kenyan adult of sound mind do hereby take oath and state as follows:

A. Introduction

1. **THAT** I am the Director in charge of Information Communication Technology for the 1st Respondent, The Independent Electoral and Boundaries Commission (hereinafter “the Commission”) and I am therefore competent to swear this Affidavit
2. **THAT** I am fully seized of the facts herein either from personal knowledge, records of the Commission and from the sources disclosed herein and duly authorised by the Commission and hence competent to make this affidavit. I swear this affidavit in response to matters touching

on Information Communication and Technology (hereinafter referred to as ICT) contained in the Petition and the affidavits of Raila Odinga, Apprielle Oichoe, Godfrey Osotsi.

3. **THAT** I have read the entire Petition filed herewith together with the Affidavits in support thereof and have had the same explained to me by the Commission's Advocates. Accordingly I have a complete understanding of the issues arising from the use of ICT in the 2017 general elections held on the 8th day of August 2017 (the General Election) and hereby respond to the allegations in respect of the deployment of ICT in the presidential election held on the 8th August, 2017 as follows:

B. Historical Context of Technology

4. **THAT** following the General Election held in Kenya in the year 2007, a number of issues arose touching on human intervention in the electoral process and how it affected the credibility and integrity of the whole process. These concerns were succinctly captured in the report by the Independent Review Commission (**IREC**) commonly known as the Kriegler Report with a key recommendation that ICT be used in future elections in Kenya to improve their transparency, accuracy and verifiability.
5. **THAT** following the recommendations from the Kriegler Report, the Commission deployed the use of ICT in the conduct of the subsequent general elections held in the year 2013 and in particular that the Commission procured and deployed the following:

- a. the Biometric Voter Registration equipment (BVR);
 - b. the Electronic Voter Identification Device (EVID);
 - c. the Candidate Nomination System; and
 - d. the Result Transmission System(RTS).
6. **THAT** whereas independent ICT tools were deployed in the conduct of the 2013 general elections, it is instructive to note that the system faced a number of technical challenges.
7. **THAT** following the challenges in the use of ICT in the 2013 general elections, the Joint Parliamentary Select Committee on the Independent Electoral and Boundaries Commission co-chaired by the Honourable Kiraitu Murungi and the Honourable James Orengo, S.C, proposed as part of the Committee’s report, the amendment to the Elections Laws contained in the Election Laws (Amendment) Act, 2016. Section 44 of the Elections Act was amended to mandate the Commission to establish an **integrated electronic electoral system** which would enable biometric voter registration, electronic voter identification and electronic results transmission. This system was put in place and successfully deployed in the administration of the 2017 general elections. The system is commonly referred to as the Kenya Integrated Elections Management System (“hereinafter **KIEMS**”).
8. **THAT** the KIEMS deployed in the conduct and administration of the General Election was successful and that it enabled the Commission to:
- a. Successfully verify the biometric data by the public during the May 10th – June 9th verification exercise as required by law.
 - b. Successfully verify voters on polling day; and

- c. Successfully transmit the results of the General Election from the polling stations to the constituency tallying centre and the national tallying centre.

C. Legislative Framework

The Constitution

9. **THAT** I am advised by the Advocates for the Commission, which advice I verily believe to be true, that Article 81 of the Constitution of Kenya (2010)(the Constitution) commands free and fair elections which are, *inter alia*, transparent and administered in an impartial, neutral, efficient, accurate and accountable manner.

10. **THAT** I am advised by the Advocates for the Commission, which advice I verily believe to be true, that Article 86 of the Constitution as read with Section 4(m) of the Independent Electoral and Boundaries Commission (IEBC) Act obligates the Commission to ensure that the voting system used is simple, accurate, verifiable, secure, accountable and transparent. This provision imposes a further obligation upon the Commission to use appropriate technology and the complementary mechanisms in the conduct of the elections.

Statutory Provisions

11. **THAT** I am aware that the establishment of KIEMS referred to in paragraph 8 was through a consultative process that included the approval by the Elections Technology Advisory Committee (ETAC) which compromises relevant agencies and institutions, including political parties pursuant to the provisions of the then Section 44(8) of the Elections Act.

(Annexed hereto and marked JM-1 is a true copy of minutes of the ETAC)

12. **THAT** the Commission and the ETAC ensured that the ICT put in place satisfied the Constitutional and statutory threshold required under the provisions of Sections 44(1) of the Elections Act.

13. **THAT** the KIEMS has the following capabilities pursuant to Section 44 of the Elections Act consists of Biometric Voter Registration System; Electronic Voter Identification System; and the Results transmission system (RTS).

Regulations

14. **THAT** pursuant to the provisions of Section 44 (5) of the Elections Act the Commission published the Elections (Technology) Regulations, 2017 on the 21st day of April 2017 (a period of 3 months before the general elections).

D. Statutory compliance and Implementation

15. **THAT** at the time of carrying out the general election, the Commission had fully and successfully deployed the use of ICT as provided by law.

16. **THAT** the Commission developed and implemented a policy to regulate the progressive use of technology in the electoral process as required under Section 44(2) of the Elections Act.

(Annexed hereto and marked JM-2 is a true copy of the said policy).

17. **THAT** prior to the deployment of KIEMS, the Commission undertook a series of tests on the KIEMS system including a public test carried out on

9th June, 2017 (60 days before the elections) and a simulation carried out on the 2nd of August, 2017.

(Annexed hereto and marked JM-3A and JM-3B are true copies of the public notices on the testing of the technology to be deployed and a report from both exercises respectively.)

18. **THAT** as part of preparations for the deployment and use of ICT in the elections the Commission developed a robust training manual and schedule aimed at building the capacity and competence of all its staff members and included training of candidate agents on the KIEMS systems. (Annexed hereto and marked JM-4 is a true copy of the training manual).

E. Implementation of ICT in the August 8th General Election

19. **THAT** the use of technology in voter identification system and result transmission system were implemented in the voting exercise and result transmission during 8th August, 2017 General Election.

20. **THAT** the results transmission component in KIEMS enabled the Commission to relay the presidential election results and the statistics from the said results from the polling stations to the constituency tallying centre and the national tallying centre (NTC) in respect of the presidential election.

21. **THAT** during the transmission of election results through KIEMS the Presiding Officer would complete Form 34A as required by law then input into the KIEMS the statistics of the results as captured on Form 34A. The Presiding Officer would then take the image of Form 34A. Before sending the data, the Presiding Officer would first show the

entries made to agents of the candidates and political parties for confirmation.

(Annexed hereto and marked JM-5A, JM-5B and JM-5C are true copies of the directions that were issued to the Presiding Officers, the Training Manual and a transmission flow chat respectively.)

22. **THAT** in view of the facts set out above, the contents of paragraph 21.2 and 21.2.1 of the Petition are inaccurate and misleading. No evidence has been led to demonstrate the allegations therein.

23. **THAT** the transmission requires 3G and 4G mobile network which was provided by three Mobile Network Operators (hereinafter referred to as “MNOs”) being, Safaricom Limited, Airtel Kenya Limited and Telkom Kenya Limited. I am aware that the Commission entered into contracts with the MNOs, for a secured transmission of the results.

24. **THAT** in a meeting held on the 22nd day of May 2017 between the Commission and MNOs who had been identified by the Commission for purposes of offering election results transmission services, the country was zoned into thirteen (13) Zones with two (2) MNOs providing election results transmission services for each zone. Of the two MNOs in every zone, one MNO was the primary service provider and the other MNO was the secondary service provider.

(Annexed hereto and marked JM-6 is a true copy of the minutes of the meeting held on the 22nd day of May 2017)

25. **THAT** in a zone where an MNO is neither a primary nor secondary service provider, it was not expected to provide any results transmission

system since KIEMS could only accommodate two SIM cards. The MNOs were assigned zones to ensure consistency and accountability in operations and availability of the service.

26. **THAT** within the zones where an MNO was either a primary or a secondary provider, the Commission gave such provider the coordinates of polling stations within the zones to enable the service provider prepare itself for the provision of results transmission services. The zoning was to ensure effective data segmentation into manageable parts.

27. **THAT** following a mapping exercise carried out by the Commission and analysis by MNOs it was ascertained that about 11,155 polling stations within the country were not effectively covered by either 3G or 4G Network and this communication was sent out to the public vide a notice dated 6th August, 2017.

(Annexed hereto and marked JM-7 is a true copy of the said Notice)

28. **THAT** once the extent of the areas that would be affected by inadequate appropriate network coverage (3G or 4G), it became apparent that the Commission instructed presiding officers to ensure that they move to points with network coverage or in the alternative to constituency tallying centres in order to transmit results.

29. **THAT** due to fluctuations in the network coverage in some areas the transmission of the image component of the results which requires at least a 3G network would be inhibited. Nevertheless the Commission was able to avail all the form 34As in a public portal. The forms which

were successfully uploaded can be accessed through <https://forms.iebc.or.ke>.

F. Security and Verifiability

30. **THAT** in response to the allegations in relation to the compromise in security and verifiability of KIEMS and access by unauthorised third parties, I wish to state as follows:

31. **THAT** in conceptualizing the information transmission and security system, the Commission engaged a highly qualified team and eventually partnered with internationally recognised and accredited institutions to provide top of the range government-grade information security system.

(Attached hereto and marked JM-8A, JM-8B, JM-8C and JM-8D are true copies of certification and accreditation documents from NTT Europe Ltd the information security service providers who guaranteed 99.99% security service to the whole system.)

32. **THAT** the whole concept and architecture around the security and verifiability of KIEMS ensured that each component had in-built as well as process-related features aimed at guaranteeing the integrity and security of the system.

(Annexed hereto and marked JM-9 is a true copy of the architecture index and flow chart.)

33. **THAT** the allegation that the commission disregarded the advice of the Communication Authority (CA) is misplaced and misleading. To the contrary the CA granted the requisite approval. (Attached hereto and

marked JM-10 is a true copy of a letter dated 31st July, 2017 from the Communication Authority)

34. THAT accordingly and as is demonstrated hereunder, the system was not compromised nor were the results in any way manipulated as is alleged in the petition. Remarkably, no evidence or explanation has been offered to lay any basis for the allegations.

35. THAT some of the security parameters entailed in the KIEMS system and information management environment include the following:

- a. Only authorised pre- determined tablets (KIEMS) are configured to be able to relay or transmit results into the Commission servers, all the tablets used were polling station specific meaning the information can be traced from the source and even then, the transmission was under constant round the clock automated monitoring.
- b. The entire network spectrum was secured with a twin (external and internal) high-level perimeter firewalls which filtered all the information and only defined and authorised transmission was permitted through these filters.
- c. The Commission deployed a robust database management solution with recommended security options all availed including pre-encryption of results before transmission and having the transmission over a secure Virtual Private Network (VPN) provided by mobile network operators. In addition the data base was set up in clusters to assure its availability.

- d. The Commission deployed as a fourth tier security measure, a granular role-based access control and user management for the entire results transmission system (RTS) application. This means that;
- i. Only authorised users could access the system through randomly issued credentials none of which was biometric.
 - ii. The permitted users had distinct but interdependent roles at different levels, this means that not a single person could perform an end to end operation in the system.
 - iii. No password was issued to any of these users of the system until the eve of the election.

36. **THAT** the Commission having outsourced the network provision services from the MNOs a number of technical safeguards were introduced in the relationship to ensure the integrity of the process. These safeguards included:

- a. The use of unique specialised SIM cards configured on secured APN for result transmission from KIEMS devices;
- b. Static Internet Protocol addresses for use in specific gadgets where the SIM Cards could only be used within the Commission's Access Point Network (APN);
- c. The use of specialised SIM Cards MSISDN which should not allow any duplication and was disabled for any SIM Card cloning;
- d. The SIM Cards were disabled for voice or text messaging; and

e. A unique internet mobile subscriber identity (IMSI) a unique identifying number within the network which is the primary identifier of the subscriber.

37. **THAT** all the SIM cards supplied and used in the process of transmission were placed under constant monitoring and periodic reports generated confirming that the cards were active throughout the electoral period and therefore transmitting data and that no intrusion or compromise was noted in the system.

38. **THAT** the electronic result transmission system was configured in a way that enabled it to detect any SIM card which was not in the list of those assigned by the MNOs.

39. **THAT** the SIM cards transmitted the results in the form of HTTP (Hyper Text Transfer Protocol) packets encrypted with SSL (Secure Socket Layer) technology. This is a concealed protocol used by the internet to define how messages are formatted and transmitted. The link is meant to secure all the data by securing it with a code which was not availed to any of the MNOs. This meant that the sole duty and obligation of the MNOs was to transmit the data and monitor the continuous flow of such data through the respective networks.

40. **THAT** the election results data were all transmitted wirelessly across the 3G & 4G network installed and secured by the Commission with controlled access with a clear trail and event logs that capture log-on and log-off data according to time and user name.

41. **THAT** as a monitoring and control tool, the MNOs generated and provided Call Data Records commonly referred to as “CDRs” which

were forwarded to the Commission at intervals. I have studied and ascertained that the CDRs show no stoppage in transmission of data or intrusion by any strange unidentified number.

42. **THAT** the CDRs also contain useful information in relation to the serial number of each SIM card, the SIM cards calling number (MSISDN), SIM static and active Internet Protocol addresses, the Internet data volume generated by the SIM card, the time of last connection and the specific type of network e.g. 2G, 3G or 4G.
43. **THAT** the cyber security procedures aimed at ensuring the integrity of the transmission also had a third layer being a series of firewalls which filtered all incoming and outgoing data while restricting any third party or unauthorised access. These firewalls had an inbuilt report back and alert mechanism in case of any unauthorised attempted access or unusual activity in the system and were continuously being monitored for such. I reiterate that no intrusion or intervention was detected as can be seen through the alert mechanisms in-built in the firewalls availed.
44. **THAT** the foregoing safeguards and security features eliminated and continue to protect against any possibility of intrusion by an unauthorised third party. Accordingly all allegations of compromise or intrusion by third parties are without basis and intended to mislead the public.
45. **THAT** in any case no evidence has been provided to demonstrate any compromise, intrusion or unauthorised access/entry by any party. The allegations as framed in the petition in this regard are ambiguous, unsubstantiated and without any basis.

46. **THAT** at the Polling Station, the Presiding Officer was required to input the QR Code into the KIEMS machine upon which the machine becomes polling station specific in terms of data and usage as confirmed in paragraphs 10 and 11 of the 2nd affidavit of **Godfrey Osotsi** sworn on the 18th day of August 2017.
47. **THAT** for purposes of the accuracy of the system, the KIEMS cannot allow more voters than those provided for in the specific polling station to vote and cannot therefore transmit a result where there are more votes cast than the number of registered voters at the particular polling station. The allegation that in certain stations more voters than those registered were recorded is therefore untrue.

G. Implementation of complementary system

48. **THAT** I am advised by the Advocates for the Commission, which advice I verily believe to be true, that the law envisages a complementary mechanism for identification of voters and transmission of results to ensure that the Commission complies with the provisions of Article 38 of the Constitution.
49. **THAT** I am advised by the Advocates for the Commission, which advice I verily believe to be true, that the law provides that in case the electronic voter identification device fails to identify a voter, the Presiding Officer shall invite the agents in the station to witness that the voter cannot be identified using the device, complete verification Form 32A in the presence of the agents and candidates, identify the voter

using the printed Register of voters, and once identified proceed to issue the voter with the ballot paper to vote.

50. **THAT** the complementary system of result transmission envisaged by law has been set up under the provisions of Regulation 83 of the Elections (General) (amendment) Regulations 2012.
51. **THAT** in as far as complementary mechanism for results transmission is concerned the Commission issued guidelines on what should happen in the event of inability to transmit results from the polling station. The Presiding Officers were required to physically deliver the forms 34A to the Returning Officers in the respective constituencies.
52. **THAT** the Court of Appeal in *Civil Appeal no. 258 of 2017 between National Super Alliance (NASA) (Supra)* and the Court further directed the Commission to comply with its internal memorandum issued on the 27th day of July 2017 in as far as voter identification was concerned.
53. **THAT** with respect to the issue of access to the back end of the system, it is erroneous for the Petitioners to claim that they demanded that access. On the contrary, the Petitioners had demanded that since the Forms 34A were not being displayed on the screen, the entire system should be switched off. As a way of enhancing transparency, the Commission volunteered to provide secure dedicated links to agents of the presidential candidates to have access to the forms 34A being transmitted from polling stations. The claim that facilitating the access took more than eight (8) hours and that the same access was not available outside the auditorium underscores the fact that the Petitioners did not appreciate the importance of guaranteeing security of the system.

54. **THAT** based on the totality of the foregoing responses it is clear that the Commission conducted the election in accordance with the Constitution, the applicable law and regulations in relation to the use of technology.

55. **THAT** I make this affidavit in opposition to the Petition.

56. **THAT** what is deposed to hereinabove, save on information, the sources whereof have been disclosed, is true to the best of my knowledge, information, belief and understanding.

SWORN at NAIROBI]
On this **24th** day of **August**, 2017]
By the said]
JAMES MUHATI].....
] **DEPONENT**
BEFORE ME]
]]
]]
]]
COMMISSIONER FOR OATHS]

Drawn & Filed By:
V.A Nyamodi & Company
Advocates
Lowerhill Duplex Apartments, Hse. 7
Lowerhill Road, Upperhill
P.O Box 51431 - 00200
Nairobi

Copies To Be Served On

1. Iseme Kamau & Maema

Advocates

IKM Place, 5th Ngong Avenue

Off Bishops Road

P.O. Box 11866-00400

Nairobi

2. Murumba & Awele

Advocates

Mirage Plaza, Mezzanine 1 - Unit 7

Westlands, Chiromo Road

P.O. Box 22255-00505

Nairobi

3. Ogetto Otachi & Co.

Advocates.

Sifa Towers, 7th Floor

Lenana Rd/ Ring Rd Junction, Kilimani,

P.O. Box 79438-00200

Nairobi.

Lodged in the Registry at Nairobi on the **24th** day of **August** 2017

.....
Registrar