Enhancement of the Accreditation System for Voting Process in Nigeria

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PRESENTATION OUTLINE

- 2015 Voter Accreditation System (VAS)

- Issues & Challenges

- Enhancement of the VAS

- Assessment of the VAS enhanced System

- Way Forward & Conclusion

INTRODUCTION

- In Nigeria today, you cannot discuss elections without adequate mention of the technologies deployed in the conduct of the elections;

- INEC has a role to offer free, fair and credible elections;

- In discharging its duties, INEC has deployed technologies to a handful of its processes which are considered to be prone to human interferences;

- The success of an election can be measured by the credibility of the processes that led to the conduct of the election – not on just what happens on Election Day;

- The role of technology in an election process is targeted at improving the accuracy of the election system, and production of the election result in a timely and efficient manner.

VOTER AUTHENTICATION SYSTEM

☐ Voter Authentication is the process of verifying that the person that registered to vote is the same person that is at the polling station to cast his vote;

☐ Hitherto manual - exposing the process to human manipulations and fraudulent practices;

☐ INEC decided to apply technology to optimize the process with the advent of the Permanent Voter Card (PVC) and the Smart Card Reader (SCR).

2015
VOTER
ACCREDITATION
SYSTEM (VAS)
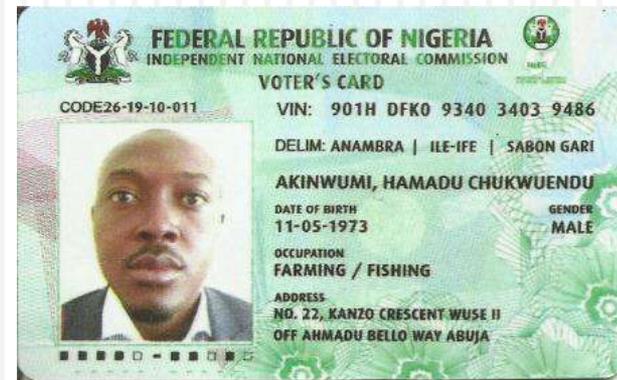
2015 VOTER ACCREDITATION SYSTEM (VAS)

- Voter Accreditation System is broken down into three:
  - **Identification** - physical comparison of the face of the card holder with the image displayed on the Smart Card Reader (SCR) when the PVC is read;
  - **Verification** (that the card is original) - being able to read the information on the chip of the PVC presented;
  - **Authentication** - comparison of the fingerprint stored on the card with what was physically presented and scanned by the reader;

- Once a PVC has been read and accredited by the SCR, the Voter Identification Number (VIN) is stored in the reader and it does not allow the accreditation of that VIN on that particular reader any longer.

- The use of the PVC and SCR gave a lot of credibility to the 2015 Electoral Process, as it greatly assisted in ensuring one-man-one-vote; though not without some challenges.

2015 VAS – ISSUES & CHALLENGES

□ The major issue observed with the 2015 VAS was high rate of failed fingerprints authentication;

□ The rate of successful fingerprint authentication, in the 2015 Presidential Election was 42.7%, which was considered quite low;

□ There were other challenges observed, which needed to be addressed before the 2019 General Elections – hence the enhancement of SCR project.

HARDWARE ENHANCEMENTS:
2019 General Elections

S/N	FEATURE	ADVANTAGE(S)
1.	Inclusion of CMOS batteries in the new SCRs	To ensure that configured and BIOS settings are retained and cannot be tampered with when batteries are removed.
2	Broader-surfaced fingerprints Scanners	For capturing wider surface area of the finger to match the referenced fingerprint template. It also increases the rate of successful accreditation.
3	Inclusion of SD cards in the SCRs	Upgrade of the total memory size of the SCRs provided additional space to store recaptured fingerprints an other details of accredited voters.

S/N	FEATURE	ADVANTAGE(S)
4.	Provision of tamper-proof seals to battery compartments	In the past, fraudulent persons remove the battery of SCRs to make the readers loose their pre-set configurations and do not work on Election day. This tamper-proof seal seals off the battery compartments, eliminating issues associated with removal of SCR battery. No one can open the battery compartment after configuration has been concluded. So no one can alter the SCR dates by removal of batteries.
5.	Replacement of SCR Batteries	The batteries in the SCRs were those that were bought with the readers in 2015. It was observed that the battery lifespan had depreciated with time. 4000MhA batteries were supplied to replace the existing 3000MhA batteries – giving the SCRs longer hours of operations.

SOFTWARE ENHANCEMENTS

S/N	FEATURE	ADVANTAGE (S)
1	The SCR application can read the IMEI (International Mobile Station Equipment Identity) number and link each IMEI to a particular PU	This made it easier to identify SCRs that have not been configured and those with data not yet uploaded.
2	The Resetting button should prompt multiple times for data upload verification before purging the database.	This made it important for technical staff, who wish to purge the SCR, to first upload the accreditation data before purging.
3	Removal of manual settings of dates and times. This means that date settings can only be possible by connecting the readers to a network – either wireless or GSM network providers.	This eliminated cases of changing of date and time of the SCR to a date set for election to take place, so that false accreditations can be made to happen, and data stored on the SCRs before election day.

S/N	FEATURE	ADVANTAGE (S)
4	In the event of failed authentication, the SCR will immediately capture the voter fingerprints, provided his/her name appears in the PDF printed voter register of that particular polling station.	This eliminated the use of incident forms, and further improve the database of voters' fingerprints. It reduces the total number of voters with failed accreditation.
5	When the close accreditation process is initiated by the user, the software should prompt for user password.	This prevented incidences of unintentional close of accreditation, preventing further voter accreditation until a technical support staff is called to open the closed software.
6	The SCR can now detect any available WiFi and prompt the user for password without having to get into the system settings.	When the date on a SCR is wrong, the user can now switch on the WIFI and connect to any available hotspot and download the correct data and time. This used to be a major issue as only technical support staff could do this.

ASSESSMENT OF THE ENHANCED VAS

□ Improved Accreditation System, after enhancement:

- ◻ SCRs whose accreditation data were not uploaded after the elections were easily identified;

- ◻ Resetting of SCRs & closing of accreditation process (supposedly claimed to be unintentional, reduced drastically);

- ◻ Easy detection of WiFi and connection to networks could easily be carried out by Poll Officials instead of waiting for Technical Support;

- ◻ Intentional resetting of date and time has been eliminated;

- ◻ Recapture of Fingerprints of failed authentications to improve the overall % of success - In fact, we now have as much as 90% success rate for voter authentication, compared to the previous 40% average rate.

- The Hardware enhancements improved the performance of the SCRs:
  - Faster Fingerprints capture and matching process due to wider FP Scanner surface. Also this may have improved the rate of successful accreditation;
  - Memory upgrade improved speed of SCRs;
  - Intentional removal of batteries by fraudulent persons reduced drastically;
  - Longer-lasting batteries – SCRs worked for 12 hours non-stop.

Salient Observations

- Recapturing of FPs was to improve authentication and subsequently to improve the database of voters' fingerprints.

  - Issue – not sure if there were connivance – persons bringing PVCs of other persons to vote. So the FPs captured are still being studied – may not be used to update the FP database;

- Stealing and buying of PVCs prior elections – still investigating what these were used for.

WAY FORWARD

□ No doubt, having a fool-proof authentication system is very key to having credible elections;

□ The enhancement process that took place for the 2019 General Elections assisted in some ways, but as some loopholes are blocked, some evil-intended persons find some ways to work around them – opening up the system;

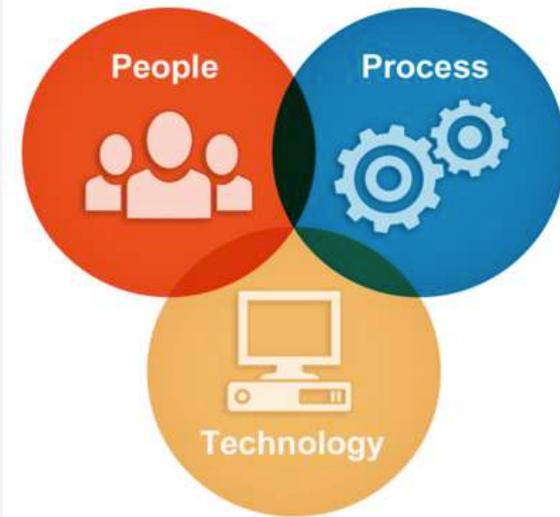□ It is obvious some more work is required with this process.

WAY FORWARD …2

- Further work is being considered for future elections, especially years before the 2023 Elections:
  - The need to revalidate all voters
  - Improvement on the fingerprints capturing algorithm during revalidation
  - Creating proper sync between the FPs capturing and FPs authentication processes,
  - Creating a new authentication and accreditation process – using newer technology – software and hardware,
  - etc

CONCLUSION

- **People, Process & Technology** – key to the success of the development of ICT in the electoral process;

- The challenges with IT deployment could be overwhelming, but nothing compares to the joy and fulfillment of having a credible election process;

- It is very important to always realise that technology may most times not give a full end-to-end solution, the people aspect should always be considered;

- The need to deploy technology to elections – especially in Africa – goes beyond timely completion of processes. It is more to "fight" persons who are out to beat the system;

- That is why INEC will keep improving its voter authentication process to ensure that one-man-one-vote is achieved.