Performance & Final Submission Phase

Model Performance Metrics

TEAM ID	NM2023TMID04400
PROJECT NAME	BIOMETRIC SECURITY SYSTEM FOR VOTING PLATFORM

Performance of Biometric Voter Registration (BVR) systems :

Summary of Responses

- Practitioners' Network members suggested a range of considerations for the performance of Biometric Voter Registration (BVR) systems.
- The most common suggestions are consolidated in the topics below.

Support

- A member from IFES suggested that while specifications of biometric kits are important, it is also vital to consider the capacity of the implementing body, or the abilities of the implementing staff to operate the equipment and the process.
- As I have noted, the performance of BVR systems is intrinsically linked to the support that the equipment has.
- Several other members also emphasized the importance of system maintenance, and institutionalizing the process so the equipment delivers the intended results.
- In line with this, another member suggested that technical partners are crucial for installing and maintaining biometric systems, and EMBs must identify appropriately experienced contractors.

Testing

- Additionally, another consideration several members suggested was testing. Piloting BVR systems is integral to their successful implementation.
- As a member noted, the equipment must undergo technology tests (to understanding error rates, response time, etc.) and scenario testing to understand environmental effects on the system (eg operational temperature, load effects).
- As one member suggested, a significant lesson learned from **Kenya's** 2013 general election is allowing sufficient time to test and pilot such systems before they are deployed.

Buy-In

- A few members suggested that while there are technological and system-related factors, acceptance of BVR systems is also important.
- For example, one member suggested that very rarely are populations asked whether they feel comfortable with sharing their biometric information.
- As another member noted, in order for biometric systems to function “citizens [must] understand the need of using biometrics and [they have to] accept it.”
- In line with this, a member shared that in Kenya, rural communities stayed away from BVR due to rumors that it caused cancer, barrenness, and erectile dysfunction.
- Furthermore, one member suggested that implementers must also have buy-in from the government and other stakeholders to avoid system failure (eg the government may refuse to release funds, contest the EMB, or de-campaign the registration system).

Other Considerations

- Lastly, a member with extensive technical and management experience in the Information Technology field shared a set of considerations for every step of implementing a BVR system.

The 4-phases of the process the member laid out include:

- Live capture of finger prints (FP) from the field
- Building and running the central voters' database
- Running the Automatic Fingerprint Identification System (AFIS)
- Current use during the election

  - Across these stages, the member outlined a series of important considerations (see member's contribution in the original discussion thread below).

Contributing Members

- Staffan Darnolf
- Ahmed Gedel
- Ernesto R. del Rosario
- Henry Makabayi
- Jersa Kide Barsaba
- Francisco Barrera
- Victor Hugo Ajila
- Ronan McDermott
- Vincent de Paul Taty
- Roger Thord Gray
- Jesus Antonio Castellanos Vasquez
- Mahouton Marius Elvis Djossou
- Michel Chajes
- Woda Jago
- Idi Beret
- Abdul Aziz Mbond
- Amin S. Wasike Yusuf
- Abdiwahidi Hussein
- Manuel Wally
- Hadija Miiro

Hard to answer because the word "performance" is vague. It could refer to any or all of the following:

- Speed of a 1:1 match
- Speed of a 1:N match
- Accuracy of matching - False Match and False Non-match rates, etc.
- Percentage of Failure to Enroll
- Battery life (for mobile kits)
- ...

and so on. If the person who asked the question could elaborate on what *they* mean by performance, more appropriate responses are likely to flow.

In many places, because of highly compressed timelines, the AFIS performance is hugely (and expensively) over-specified only for the procured systems to sit largely idle between registration or election cycles. Ernesto mentioned this in Part 3 of his excellent response from him. 10 to 1 is being kind, I suspect!

There is a **very** strong relationship between the following:

- The training of the staff who will operate the equipment used to enroll voters.
- The percentage of voters whose fingerprints are captured
- The quality of those captured fingerprints
- The resulting accuracy of the AFIS used to match those fingerprints.

Great question (if vague!), good and useful discussion. Looking forward to other responses.