European Commission
United Nations Development Programme
Joint Task Force on Electoral Assistance

IT Solutions for registration exercises

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Electoral Procurement Workshop
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Outline

- Appropriate Technology and Applications
- Voter Registration Concepts
- ICT Solutions
- Low tech solutions
- Mid tech solutions
- High tech solutions
- Infrastructure and standards
- Sustainability issues and ICT study
- Concluding remarks

Key Point

While the principles of elections largely remain the same

Information
Communication
Technology

has the past 25 years dramatically changed the operational methodology for elections, driven by rising demands on EMBs.

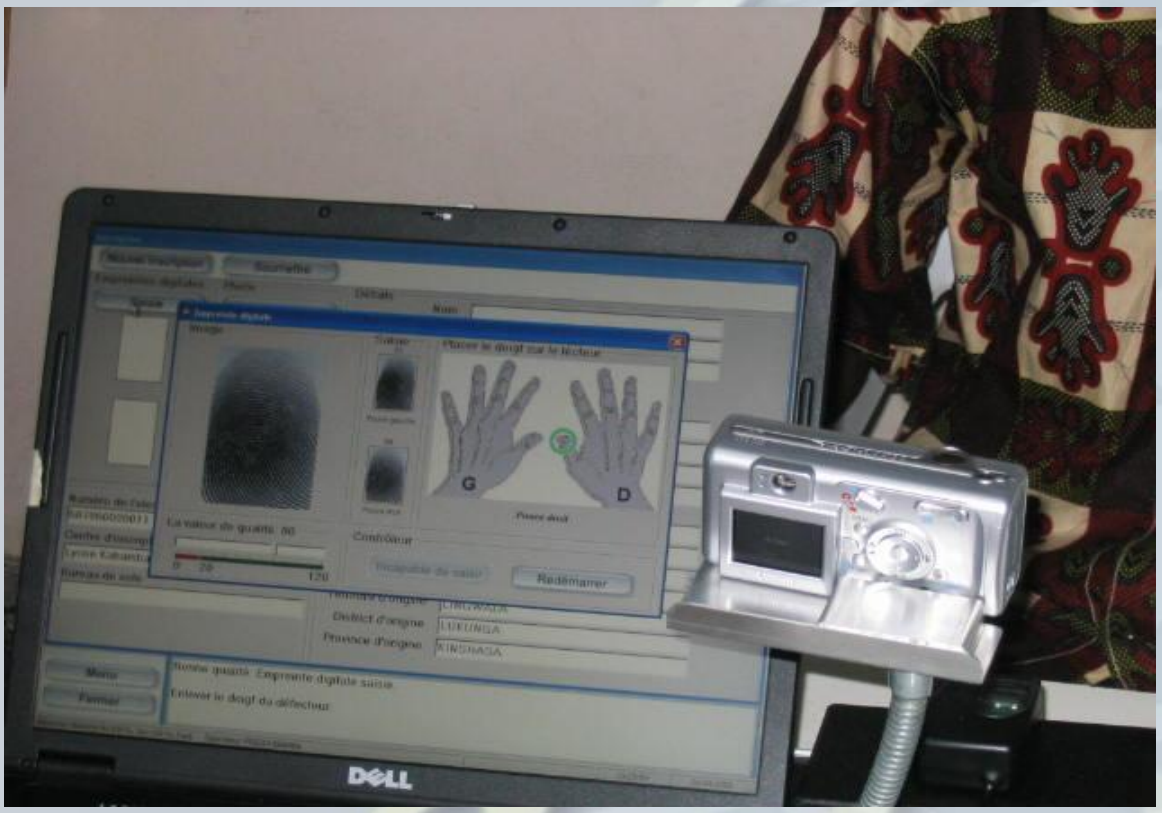
Appropriate Technology

- Continuous and increasingly fast developments in ICTs applications available for electoral purposes
- EC/UNDP are receiving many request for support to census, civil and voter registration.
- Factor to be reckoned with by all EMBs, donors, practioners and electoral assistance providers
- ICTs has already dramatically changed the way elections are conducted
- Unrealistic not to accept that this process will go on and affect more and more emerging democracies, like Mozambique and even countries just exiting long-drawn conflicts, like DRC

Effective Electoral Assistance Focus

- **Quality and appropriateness of the methodological, operational and technological choices to be adopted for implementation on an electoral cycle**
- **Perceived not any longer as isolated event but as a process.**
- **Past imperfections and limited results should be seen as an additional motive to support electoral processes investing more in the institutions that administer the elections in a good governance perspective**
- **Importance of international/domestic observation missions, evaluations, post election seminar and peer review mechanisms.**
- **Importance of the synergies between election observation and electoral assistance**

Definitions



Any effort to make electoral assistance more effective must tackle the issue of the increasing use of technology in the electoral process.

Challenge

What kind of technology is suitable for a particular electoral process?

- **Challenge: how to ensure a sustainable, appropriate, cost effective and transparent use of technology in post-conflict elections and in fragile or emerging democracies?**

- **No fixed solution that can be applicable everywhere, but different ones for every context. General rule:**

- **The level of technological upgrades suitable for a given country should always be directly related to the trust and independence enjoyed by the EMB, as this is the element that will in the end determine their acceptance by the public opinion.**

"Should"

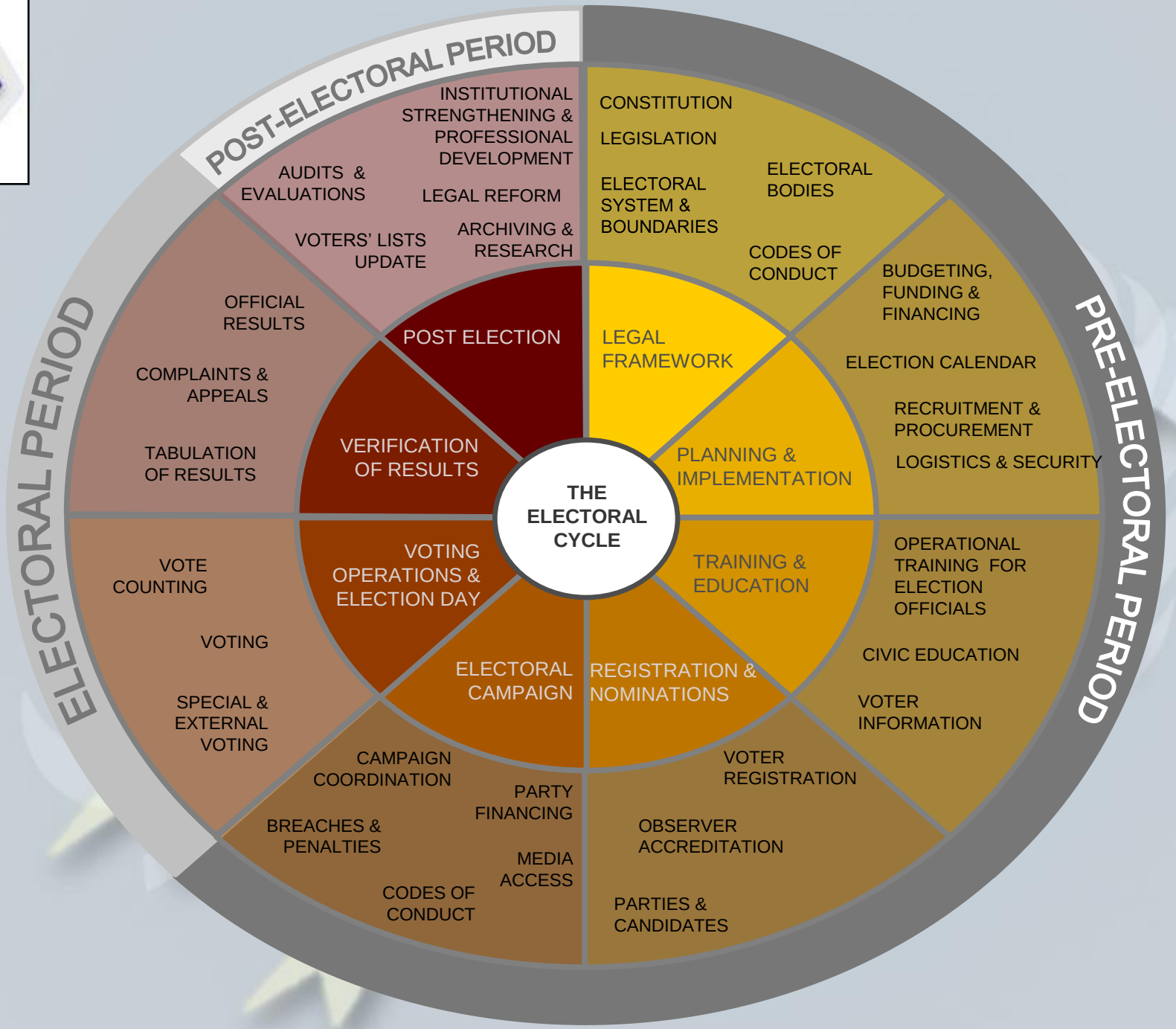
Technology should be:

- implemented in time before an electoral event
- legally supported
- operationally appropriate
- cost effective
- transparent and add to integrity
- sustainable

"Not"

Technology should NOT be:

- driven by vendor or donor interests
- considered a proof of "development"
- suppress more important needs


POST-ELECTORAL PERIOD
PRE-ELECTORAL PERIOD
ELECTORAL PERIOD
THE ELECTORAL CYCLE
POST ELECTION
LEGAL FRAMEWORK
PLANNING & IMPLEMENTATION
TRAINING & EDUCATION
REGISTRATION & NOMINATIONS
ELECTORAL CAMPAIGN
VOTING OPERATIONS & ELECTION DAY
VERIFICATION OF RESULTS
INSTITUTIONAL STRENGTHENING & PROFESSIONAL DEVELOPMENT
AUDITS & EVALUATIONS
LEGAL REFORM
VOTERS' LISTS UPDATE
ARCHIVING & RESEARCH
CONSTITUTION
LEGISLATION
ELECTORAL SYSTEM & BOUNDARIES
ELECTORAL BODIES
CODES OF CONDUCT
BUDGETING, FUNDING & FINANCING
ELECTION CALENDAR
RECRUITMENT & PROCUREMENT
LOGISTICS & SECURITY
OPERATIONAL TRAINING FOR ELECTION OFFICIALS
CIVIC EDUCATION
VOTER INFORMATION
VOTER REGISTRATION
OBSERVER ACCREDITATION
PARTIES & CANDIDATES
CAMPAIGN COORDINATION
PARTY FINANCING
BREACHES & PENALTIES
MEDIA ACCESS
CODES OF CONDUCT
VOTE COUNTING
VOTING
SPECIAL & EXTERNAL VOTING
OFFICIAL RESULTS
COMPLAINTS & APPEALS
TABULATION OF RESULTS

Areas of Implementation

Geographic Information Systems (GIS)

- Boundary delimitation
- Operational planning
- Public information
- Results analysis by public & contestants
- Integration with other institutions

Areas of Implementation
Regulation of Parties and Candidates

- Registration of political parties
- Campaign finance controls and information
- Candidate nomination and verification
  - Better and more precise ballots
- Voter education about contestants

Areas of Implementation Public Outreach

- Web sites
- Mass emailing
- Mass SMS
- Call Centers of EMBs
- Better TV spots through animation

Areas of Implementation
Public Outreach

Areas of Implementation Results Aggregation

- Results are data entered manually, or through OMR, locally and then electronically transferred and tabulated centrally
- Faster, more precise & more auditable results
- Cost effective modernisation

Areas of Implementation Internal Administration

- Organisational modernisation
- Budget/finance, human resource systems
- Procurement, inventory, transport
- Internal communication
  - Distributed email
  - Secure intranets
- Customisation & training, training, training

Areas of Implementation Electronic Voting

Areas of Implementation Electronic Voting

Opportunities:

- Longer term cost reduction
- Results faster and more reliable
- Better access for disabled
- Mobility of voters
- Facilitate out-of-country voting
- Higher turn-out through ease of voting

Areas of Implementation Electronic Voting

- Risks:
- Sustainability
  - Training
- "Vendor dictatorship"
- Lack of trust, ease of central manipulation
  - Transparency is key

POST-ELECTORAL (STRATEGIES)

PRE-ELECTORAL (PREPARATIONS)

ELECTORAL PERIOD (OPERATIONS)

THE ELECTORAL CYCLE

POST ELECTION

LEGAL FRAMEWORK

VERIFICATION OF RESULTS

PLANNING & IMPLEMENTATION

VOTING OPERATIONS & ELECTION DAY

TRAINING & EDUCATION

ELECTORAL CAMPAIGN

VOTER REGISTRATION

INSTITUTIONAL STRENGTHENING & PROFESSIONAL DEVELOPMENT

AUDITS & EVALUATIONS

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OPERATIONAL TRAINING FOR ELECTION OFFICIALS

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PARTY FINANCING

BREACHES & PENALTIES

MEDIA ACCESS

CODES OF CONDUCT

VOTER REGISTRATION

OBSERVER ACCREDITATION

PARTIES & CANDIDATES

Areas of Implementation
Voter Registration

Areas of Implementation
Voter Registration

- An accurate and accepted voter registry is pivotal to a credible electoral process
- Capture more data, faster and more precise
- Capture biometric data: picture & fingerprint
  - Avoid double registration
- Centralisation: detect fraud
- Planning: more effective allocation to polling locations
- Synergy with civil registry
- Risks: sustainability, manipulation, trust

Voter Registration

Typical voter registration operation:

- Constitution -> election law -> regulation / procedure
- operational plan -> procurement and training
- Field operation collecting data on eligible voters
- Data processing
- Production of preliminary voter lists and their display
- Claims and objections period with the consequent process of entering deletions and additions
- Production of final voters lists and the at times related production of voter cards
- Distribution of voter cards and the distribution of voters lists to polling stations
- E-day: final voters list controls who can vote where

VR Systems

Three conceptual systems:

1. Stand-alone "ad hoc" / periodic voter registration (active)
2. Stand-alone continuous / permanent voter registration (active)
3. Voter register based on the civil register (passive)

VR Evolutionary path

Seven steps:

1. **No voter registry and an extensive use of indelible ink or some form of marking on voters to guarantee the "one person one vote principle"**
2. **Manual (often periodic) voter registry with/out the issuance of voter cards**
3. **Computerized (often periodic) voter registry with/out the issuance of voter cards**
4. **Computerized (often periodic) voter registry checked against an existing civil registry**
5. **Computerized (often permanent) voter registry**
6. **Integrated civil and voter registration**
7. **Voter rolls automatically generated as an extraction of the civil registry or of the permanent stand alone voter register**

VR Methodologies

Three levels of technological methodologies:

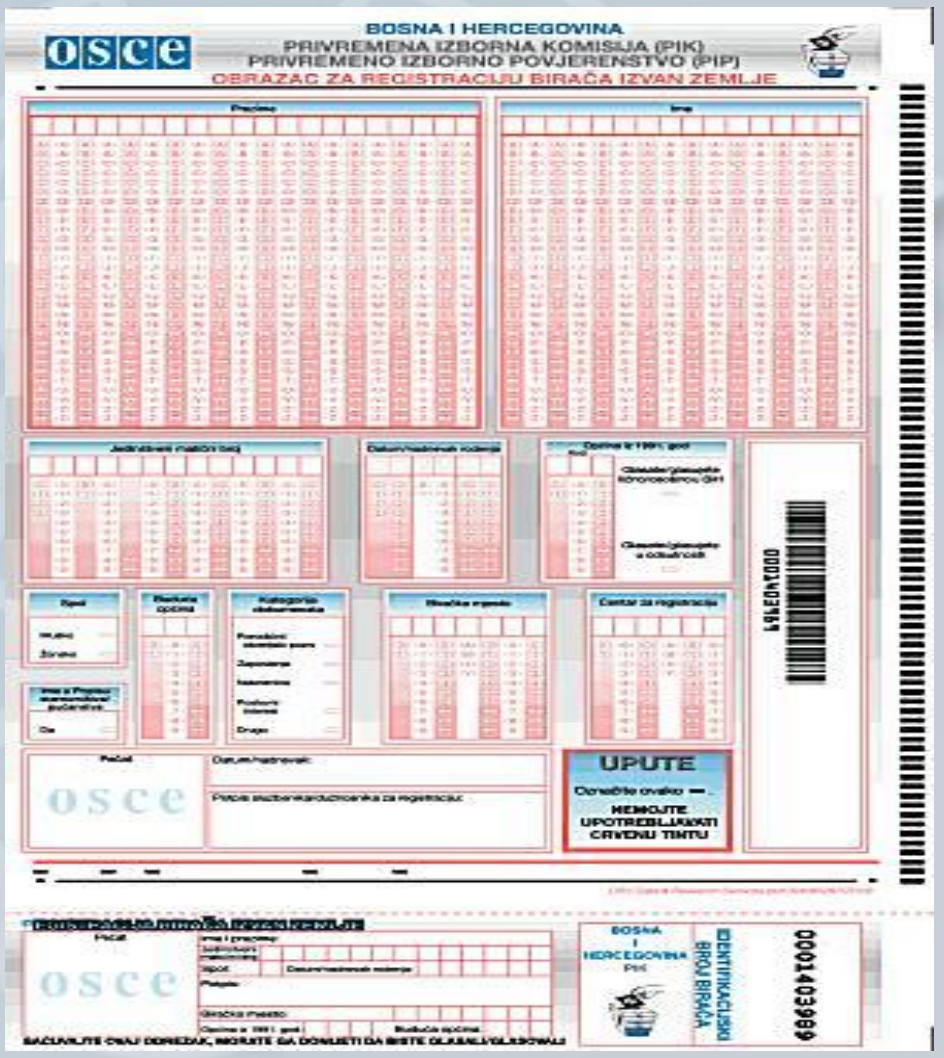
- **Low-Tech**
  - Data on paper - locally based – Timor, Bénin
- **Medium-Tech**
  - Paper into database - centrally based – Tanzania, Zambia, Malawi
- **High-Tech**
  - Direct to computer – DRC, Togo

-> Endless variations of VR methodology

Low - Tech Approaches

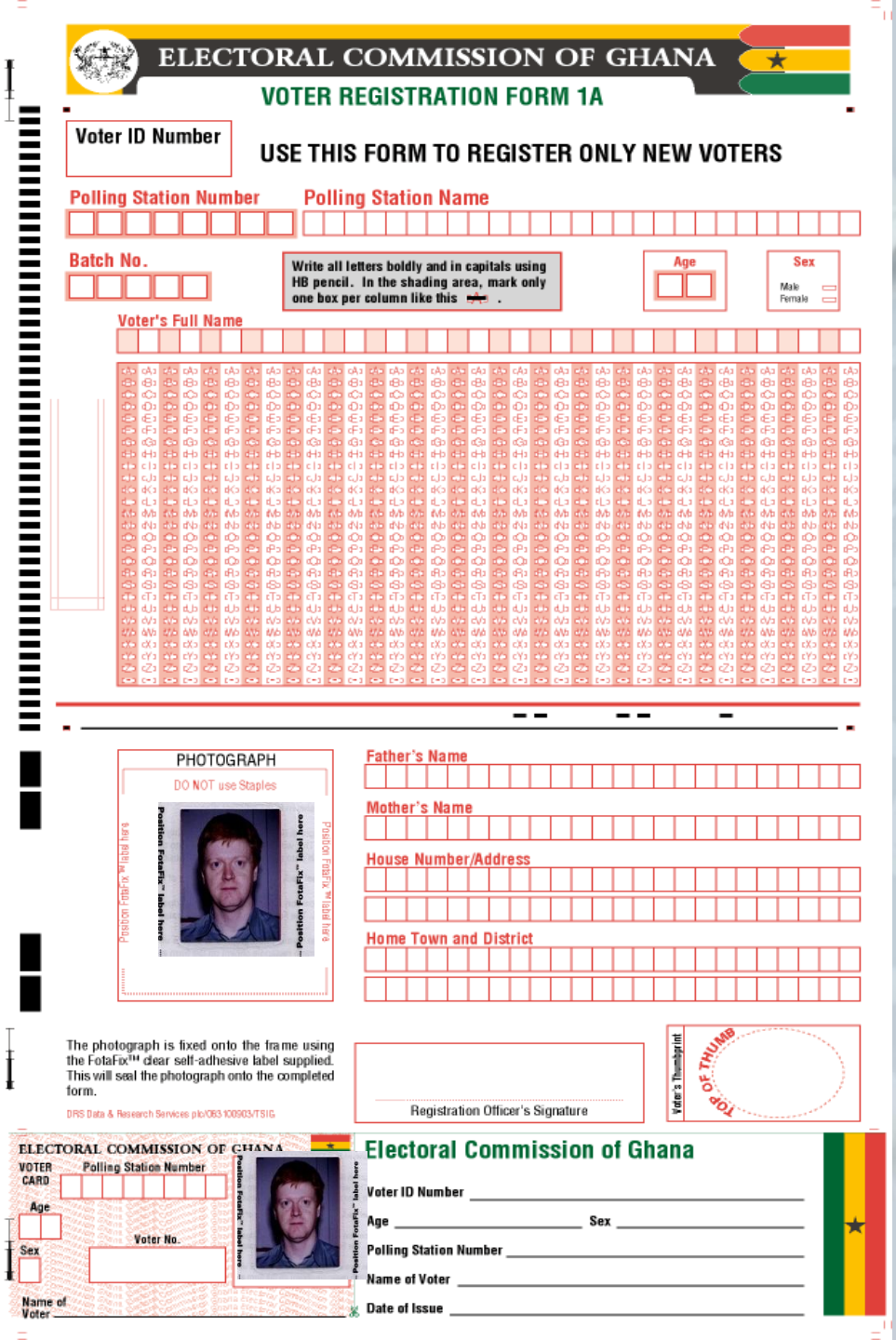
Mid Tech Approach

Optical Mark Recognition (OMR) First used in large scale Electoral Assistance Mission Bosnia and Herzegovina 1997



OMR Scanners

Production of OMR Forms


ELECTORAL COMMISSION OF GHANA

VOTER REGISTRATION FORM 1A

Voter ID Number

USE THIS FORM TO REGISTER ONLY NEW VOTERS

Polling Station Number

Polling Station Name

Batch No.

Write all letters boldly and in capitals using HB pencil. In the shading area, mark only one box per column like this .

Age

Sex

Male

Female

Voter's Full Name

PHOTOGRAPH

DO NOT use Staples

Position FotaFix™ label here

Position FotaFix™ label here

Position FotaFix™ label here

Position FotaFix™ label here

Father's Name

Mother's Name

House Number/Address

Home Town and District

The photograph is fixed onto the frame using the FotaFix™ clear self-adhesive label supplied. This will seal the photograph onto the completed form.

DRS Data & Research Services plc/063-100903/TSIG

Registration Officer's Signature

Voter's Thumbprint

TOP OF THUMB

ELECTORAL COMMISSION OF GHANA

VOTER CARD

Polling Station Number

Age

Sex

Voter No.

Position FotaFix™ label here

Position FotaFix™ label here

Name of Voter

Electoral Commission of Ghana

Voter ID Number

Age

Sex

Polling Station Number

Name of Voter

Date of Issue

Component one
First registration

- Voters details

Recorded on this form

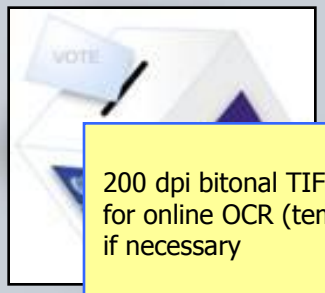
- issued with a

receipt of their registration

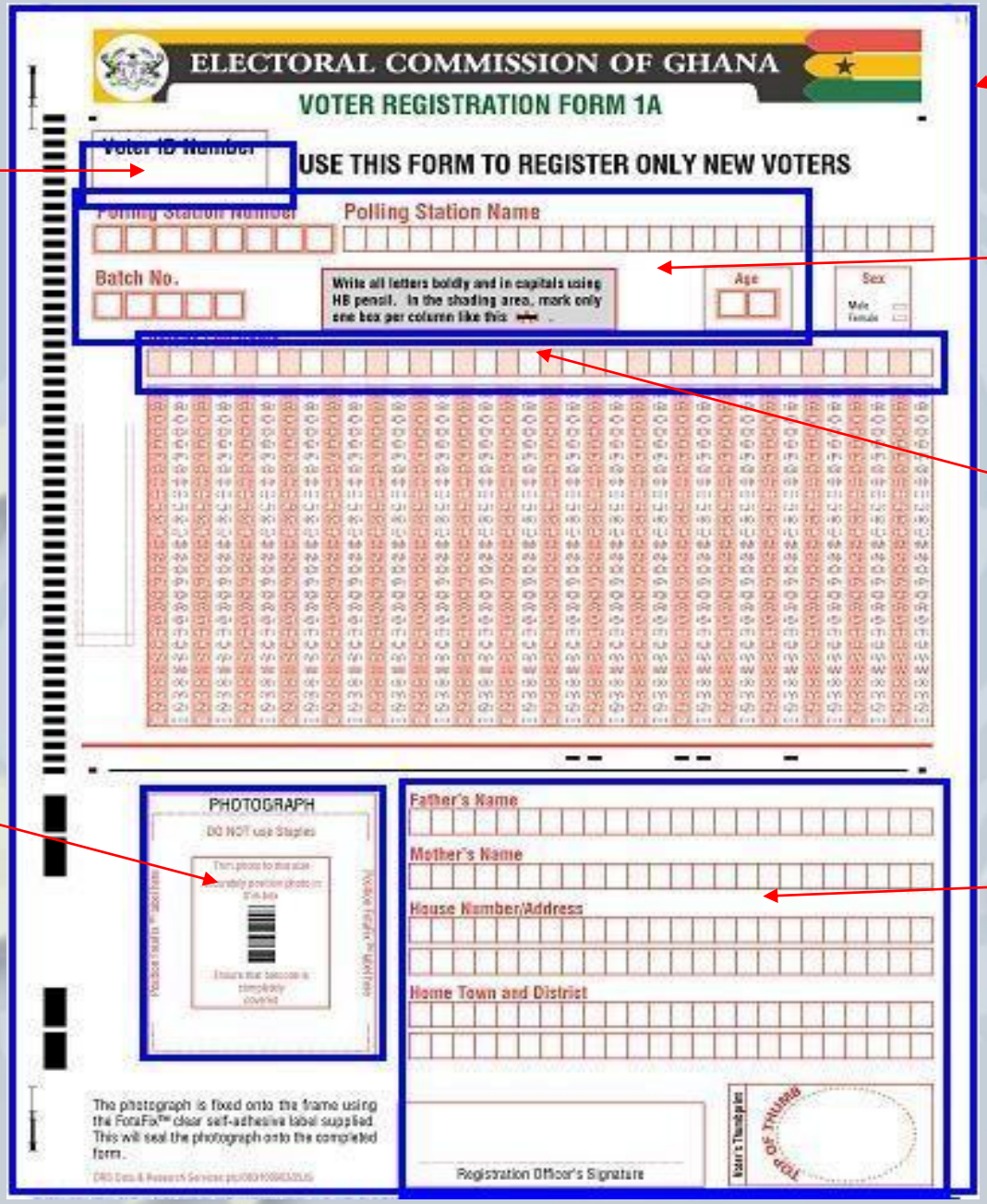
Component two
Second registration

Photo taken and applied to form

Receipt (voters card) then issued



200 dpi bitonal TIFF
for online OCR (temp)
if necessary



200 dpi greyscale jpeg
(permanent)
of whole form (40k
size approx

200 dpi bitonal TIFF
(Temp) Clip for ICR
Polling Station No,
Batch No and Age

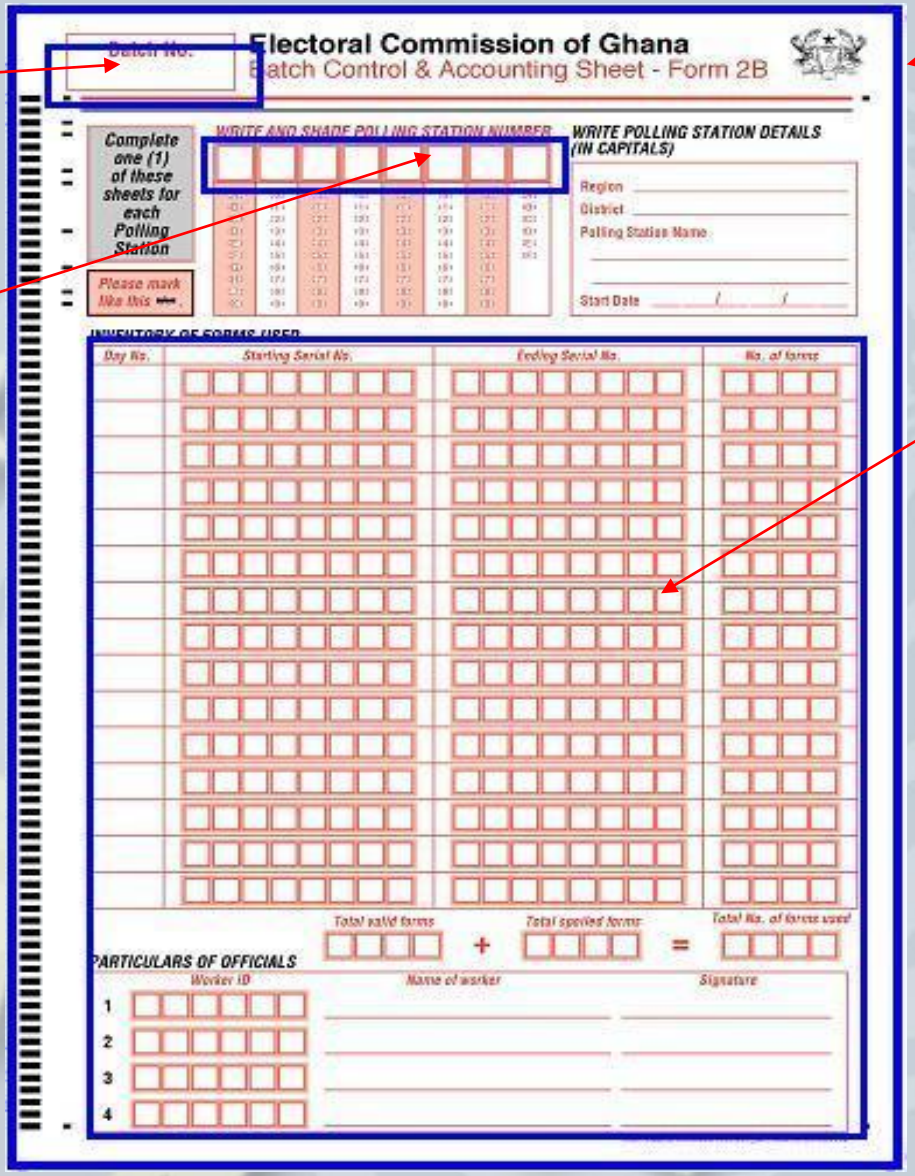
200 dpi bitonal TIFF Clip
for ICR name [if OMR is
not valid] (Permanent)

200 dpi greyscale jpeg
(permanent)
Photo (10k size approx

200 dpi greyscale jpeg
(permanent)
Address and Signature
(30k size approx)

Clip for ICR Batch No

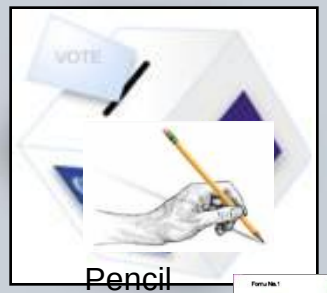
Clip for ICR Polling Station No



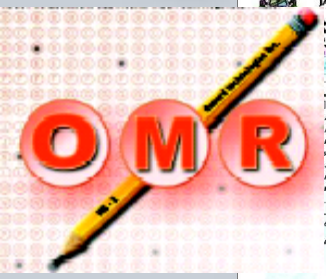
200 dpi GreyScale jpg (permanent) of whole image (50k size approx)

200 dpi bitonal TIFF for offline ICR (permanent) Serial Numbers (40k size approx)

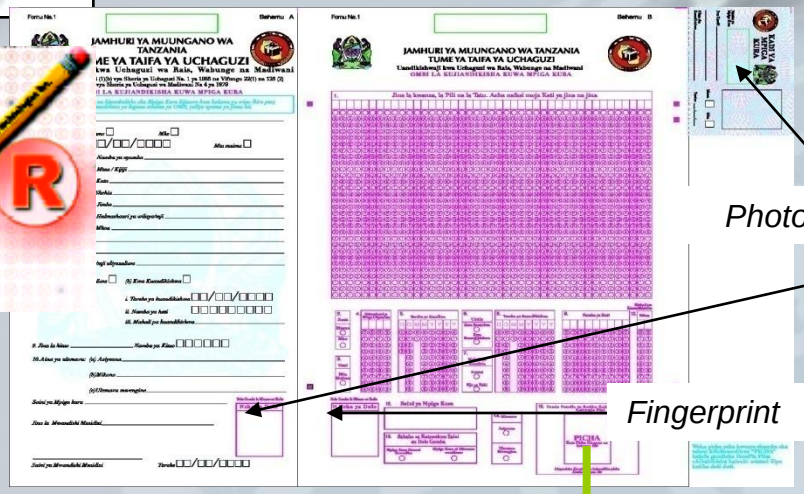
Mid Tech Approach



Pencil



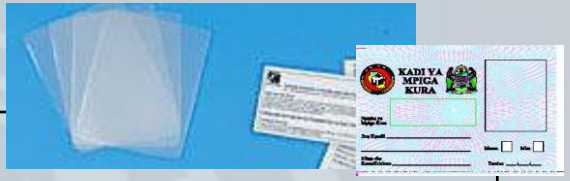
Official



Registration Forms

Photograph

Photo die cutter

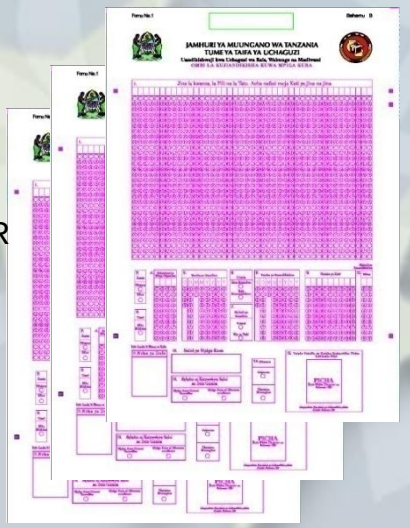


Voter's card

Fingerprint

Photo-fix

Fingerprint pad



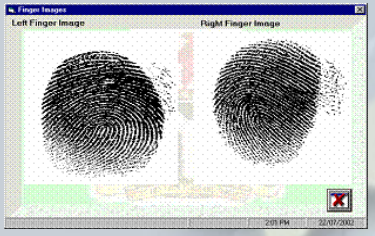
Completed OMR Forms

Batch Header Form (one per day)

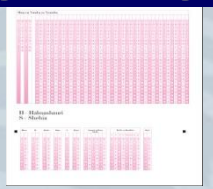
Transport to data centre

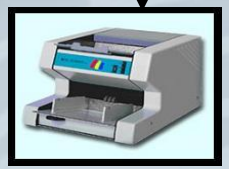
Envelopes

Mid Tech Approach – Tanzania



forms





Scan Module

Security Module

Tiff images

HTML Pages

OMR Module

Exception Handling Module

File Store

Register Publishing Module

Reporting Module

Search Module & Quality Check

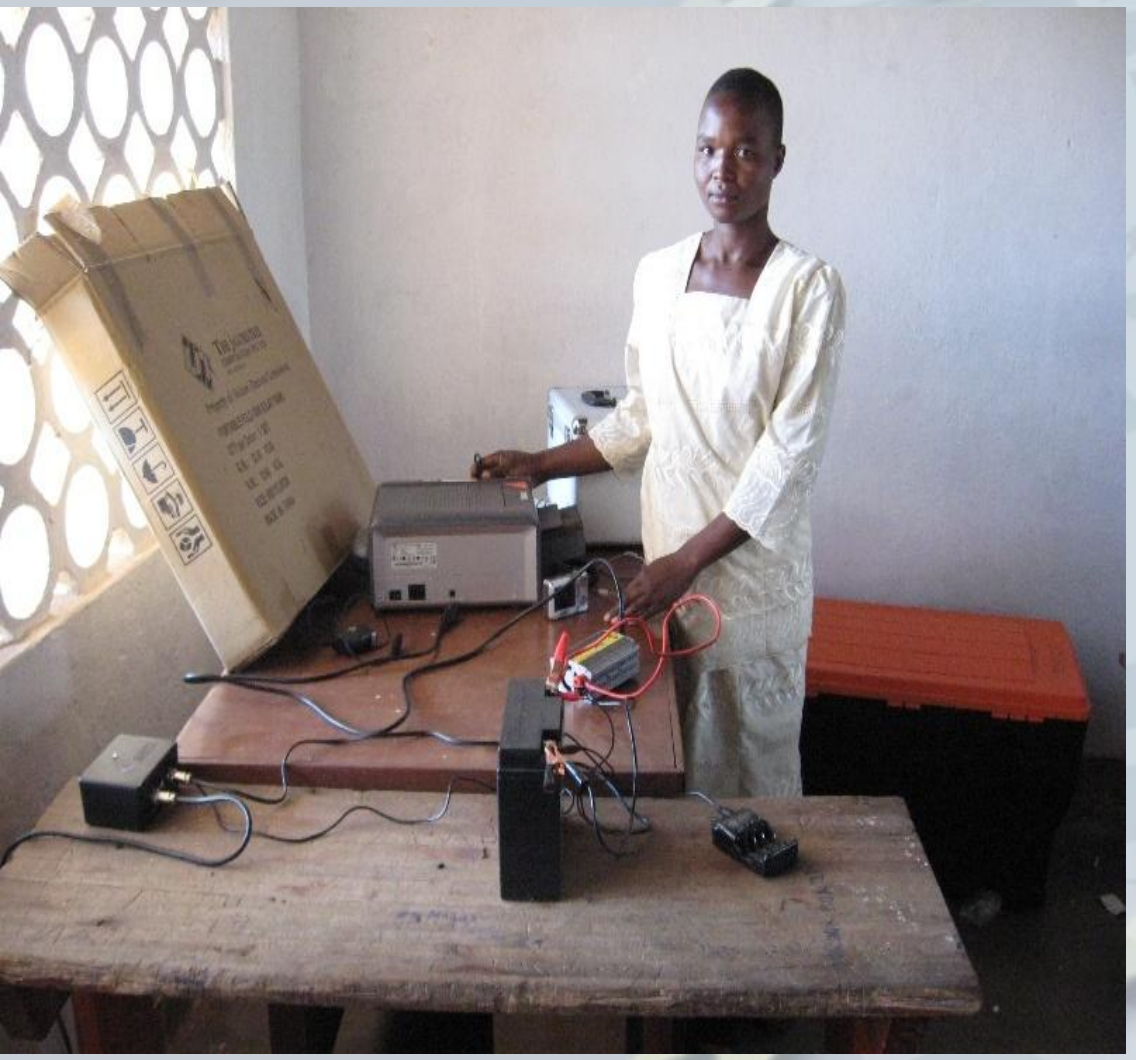
System Production Management Module

System Administration Module

The Major System for PNVR Preparation that comprised by Different modules

Mid Tech Approach – Zambia

Mid Tech Approach post Polaroid



- Using solar panels
- Photoprinter
- Battery (reusability issues)
- Complex setup which has led to technical difficulties similar to full fledged digital registration kits


CAMERA OPERATOR

Hi-Tech Approach

The Future ?

Digital Camera
The digital camera is embedded onto the unit's Official Panel and may be used to capture a voter's digital photograph during registration.

Local Capture of Information
The application contained can capture data manually inserted in the Vanguard. This data can be, voters information, as well as Voting results.

Transmission of Data
The kit is capable of transmitting all data and results from distributed locations to a central site.

Color Touch-screen
A touch-sensitive, full-color LCD screen displays easy-to-use controls for PenCom officials to use to incorporate or edit data

Printer
The attached printer can be used to print a voter registration card

Signature Pad
The signature capture device may be used to capture a user's signature in electronic format during registration or authentication

Fingerprint Reader
The main fingerprint capture device may be used to capture a fingerprint in digital form during registration or authentication.

Infrastructure

- ***Infrastructure has to be compliant with international standards:***
- **Data centre compliant with ANSI/TIA-942**
- **Voter Database compliant with ACM statewide database of registered voters (draft standards)**
- **Kits and other IT solutions need to be compliant with applicable clauses contained in the Voluntary Voting System Guidelines (VVSG) which are guidelines adopted by the United States Election Assistance Commission (EAC) for the certification of voting systems.**
- **AFIS (ABIS) components need to be compliant with ANSI/NIST-ITL 1-2000 standard : Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information - Part 1 (ANSI/NIST-ITL 1-2007)**
- **AFIS component needs also to comply with BS ISO/IEC 19794 standards which are applicable to all identity management systems**

Sustainability Issues

- Technology might reduce costs and improve sustainability
- It opens up risks for donors and assistance providers to become hostages of the vendors
- Cost-effectiveness depends on the re-usability of the hardware for other elections administrative purposes
- Technological changes are not accompanied by adequate training and voter education efforts

ICT Study

- Focus on civil/voter registration and transmission of electoral data
- Comparative assessment
- Methodological guide
- Auditing procedure
- Training modules

  - Conduct an analysis of most appropriate manner of procuring these technologies and the related specialized services

Concluding remarks

- Complexity of solutions
- Standards compliance
- Capacity building of EMB
- Sustainability

- ***Innovative approaches promoting south to south cooperation, sharing of know-how, equipment, secondment of staff, etc.***