

Contents

I

Elements for a successful e-voting

II

Precinct voting solution

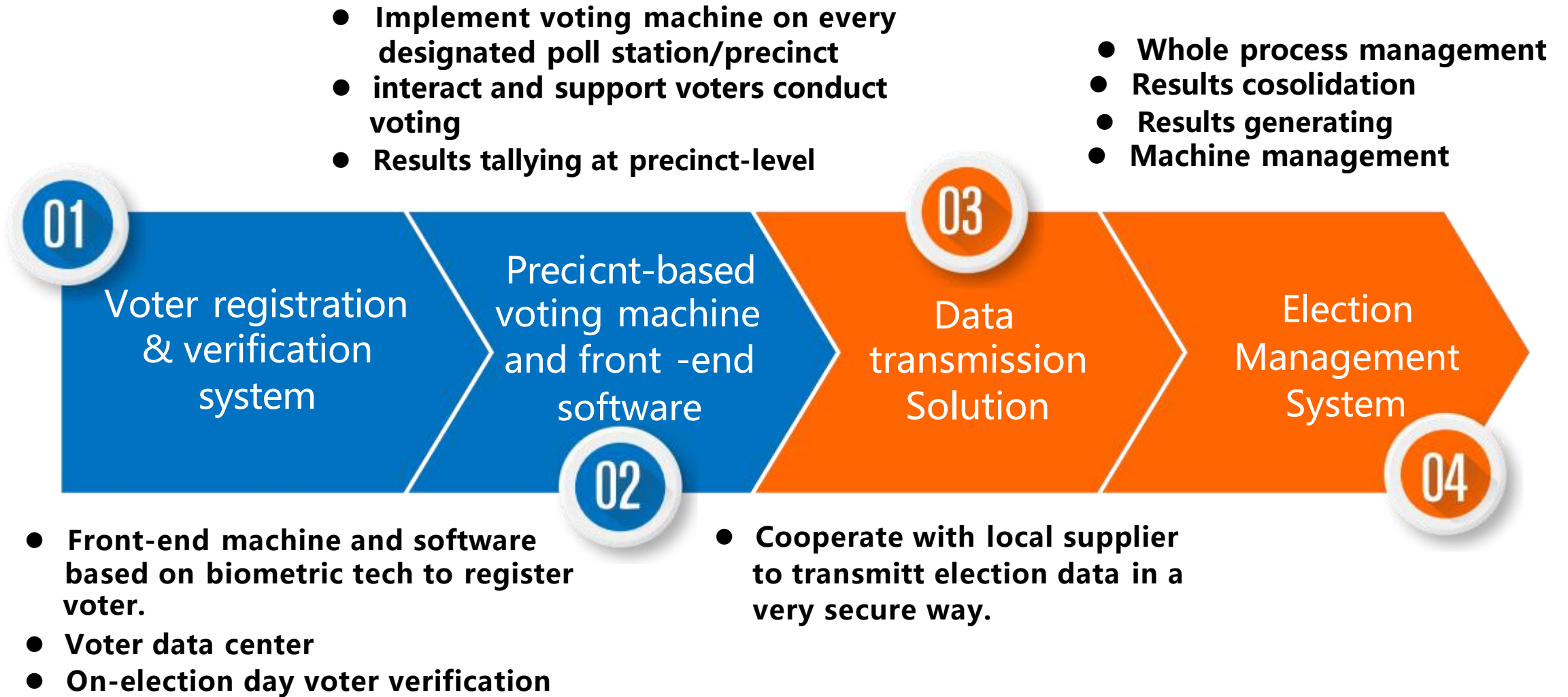
III

Election management system

IV

Election data transmission

Elements for a successful e-voting



Contents

I

Elements for a successful e-voting

II

Precinct voting solution

III

Election management system

IV

Election data transmission

Front-end Voting Machine Overview



Headset

Screen

**Button based
accessible voting
helper**

Printer

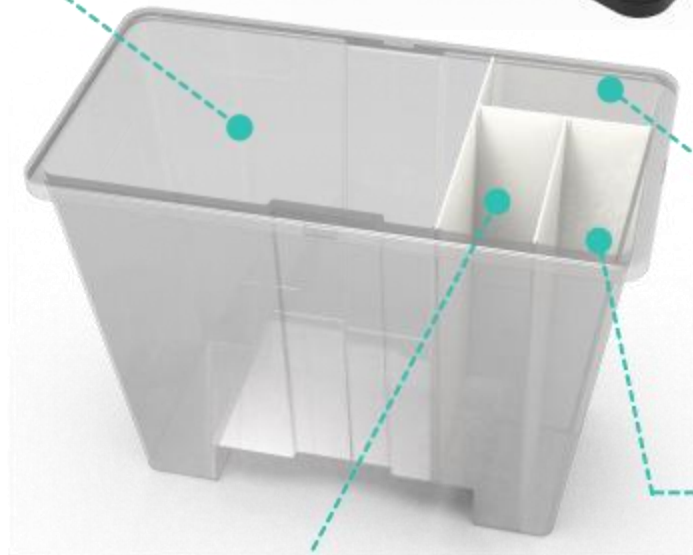
Scanner

Ballot Box

Detachable cover



Normal Ballots Compartment



**Voter Receipt
Compartment**

**Emergency
Compartment**

Invalid/Questionable Ballots Compartment

Precinct E-Voting Solution

New generation Precinct voting machine will support the following 3 working modes:



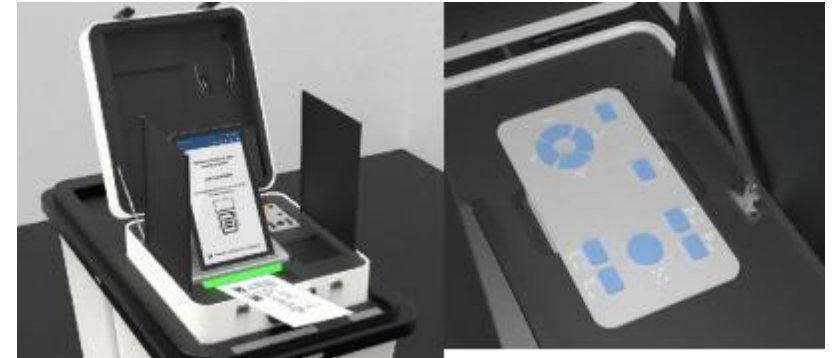
Mode 1

Act as Ballot Reader



Mode 2

Act as DRE machine



Mode 3

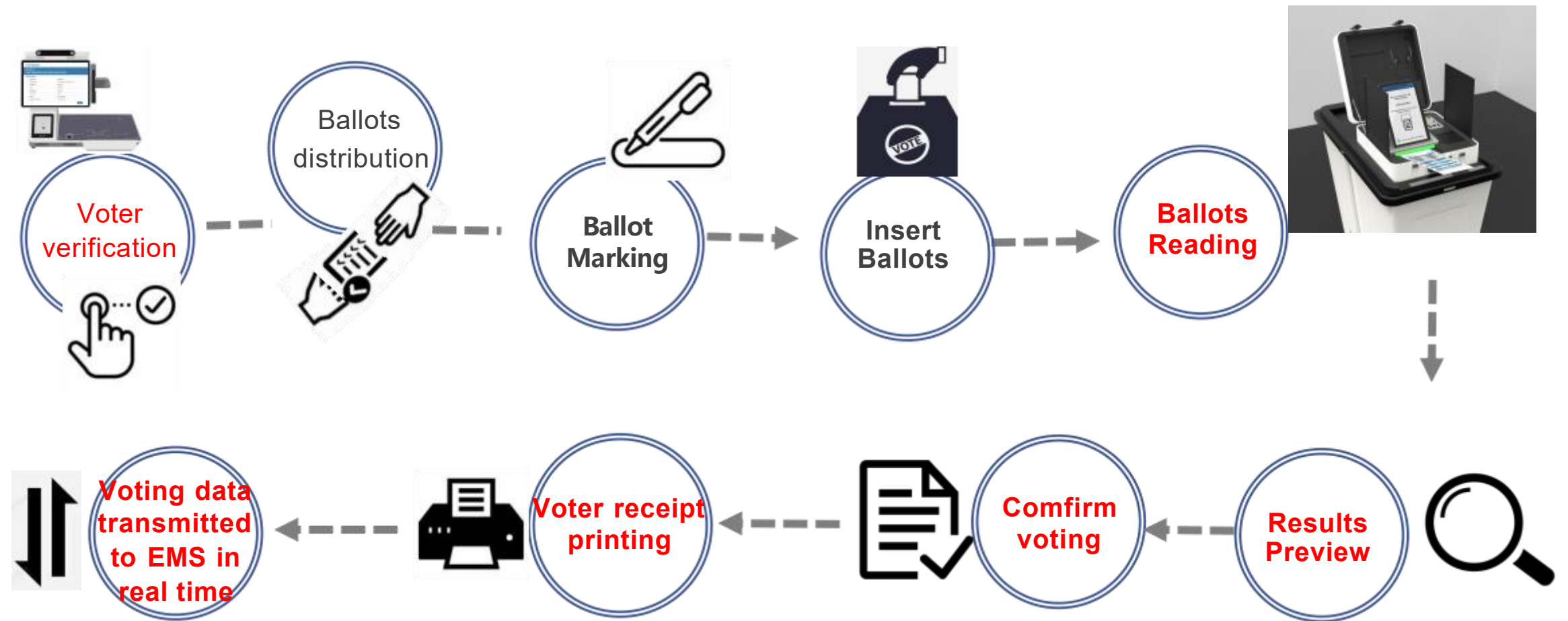
Act as MPVD

Mode1 CAIST Product Act as Ballot Reader (Ballot paper-based voting)

- **Based on:** OMR technology for ballots processing.
- **Results preview:** to avoid invalid marking
- **Transparency:** Voter' s receipts printed as a backup for traceability.
- **Quick Scanning:** Rapidly processes ballots through optical scanning.
- **Accuracy:** Combines algorithms and manual verification for higher accuracy.
- **Ballots sorting:** Support various ballots auto sorted and stored.
- **Prevent:** Bogus & Repetitive Ballots Reading

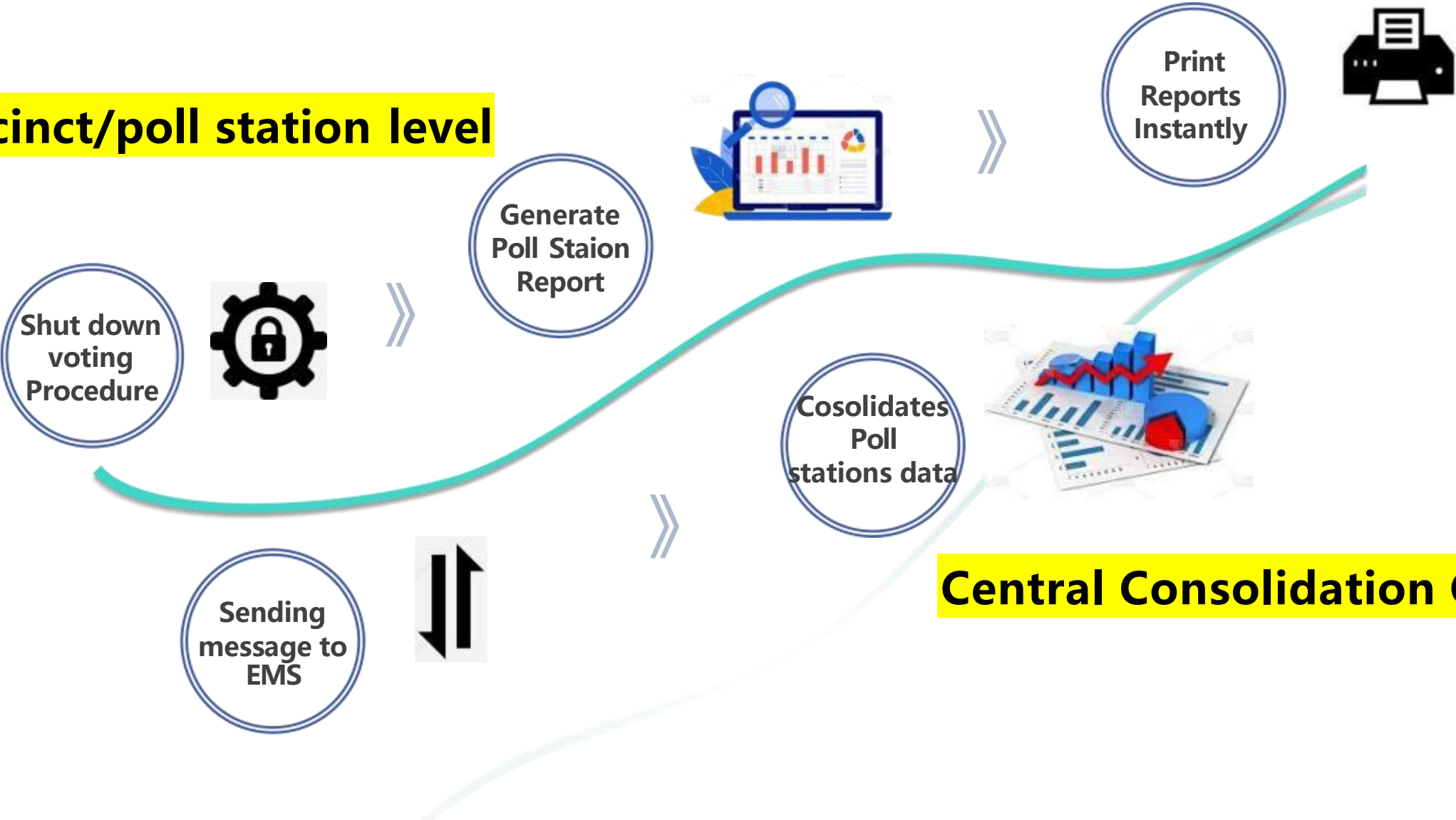


Flow chart for mode1 - Ballot Reader



Flow chart for results cosolidation

Precinct/poll station level

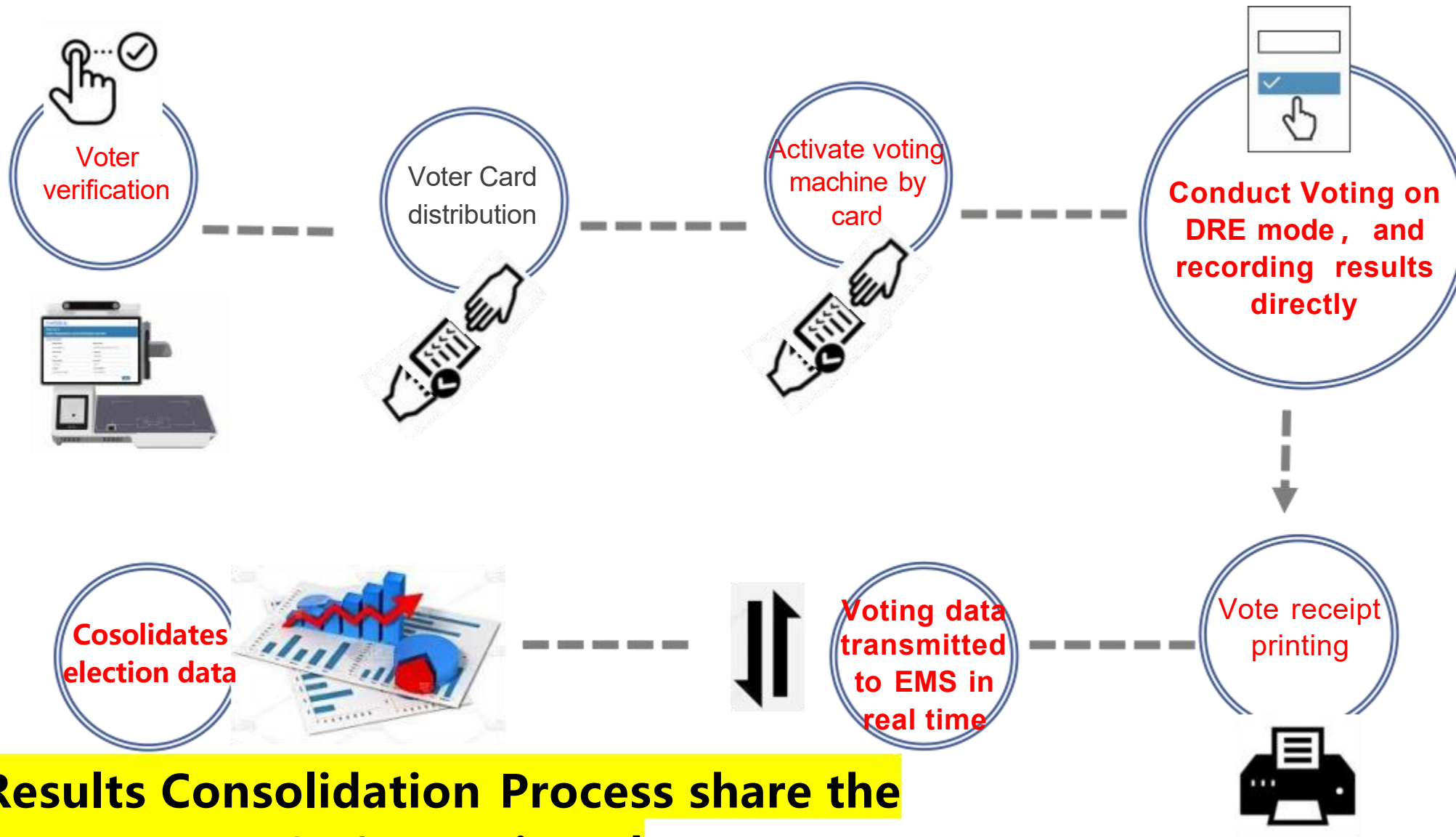


Mode 2 CAIST Product Act as Direct recording electronic machine (Paperless voting, better proposed for over-seas voters and accessible voting)

- **Real-Time Recording:** Instantly captures and stores votes for quick tallying.
- **User-Friendly:** Intuitive touch-screen interfaces.
- **Paperless:** Streamline the voting process and environmental impact.
- **Space-Efficient:** Requires less storage space
- **Accessible voting:** Support voter with visual impariment and illterate voter to participate.
- **Transparency:** Voter' s receipts printed as a backup for traceability.



Flow chart for voting on DRE Machine



Results Consolidation Process share the same one as OP1 Mentioned

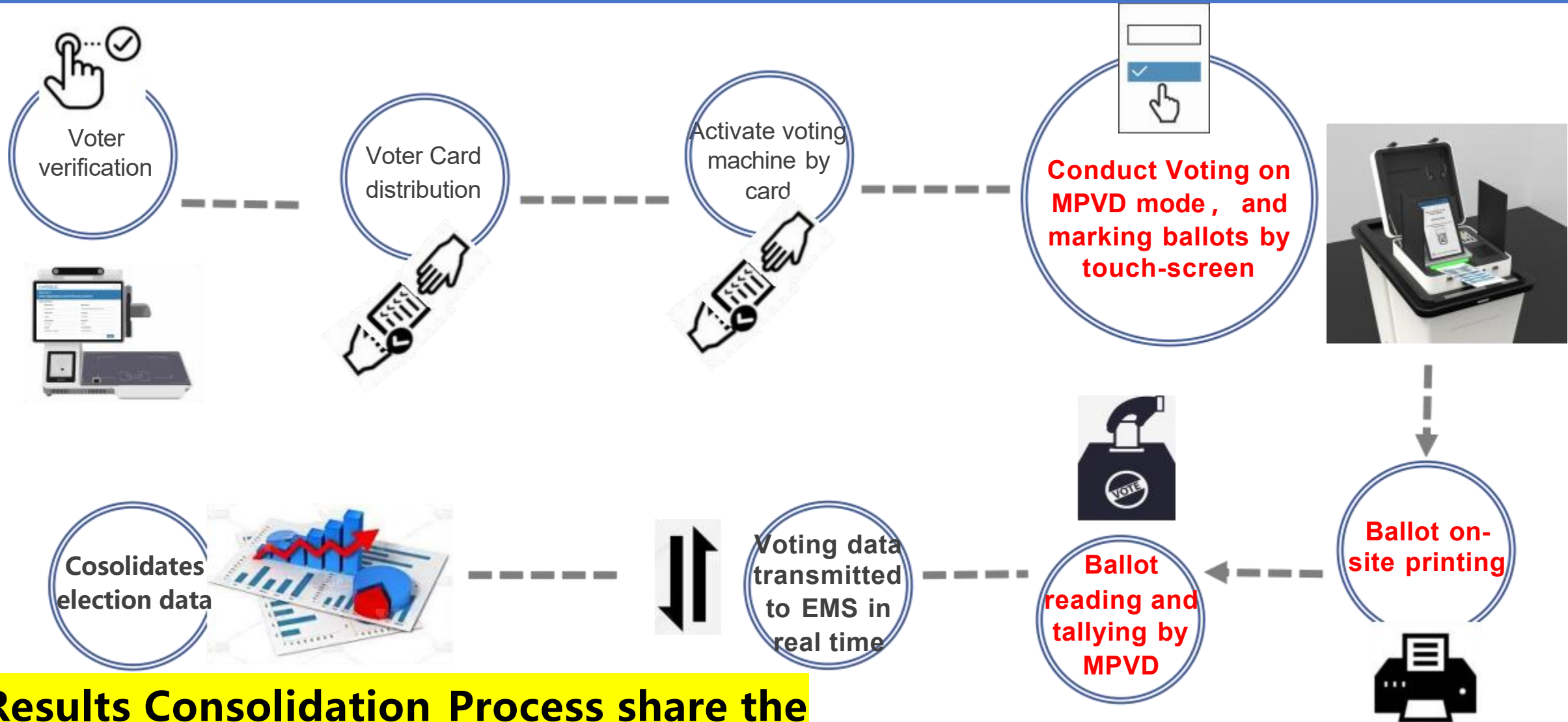
Mode3 CAIST Product Act as Multi-function Precinct Device (Hybrid voting)

Incorporating the advantages of the aforementioned two approaches:

- Touchscreen-assisted ballot marking to reduce invalid votes made by handmarking;
- on-site ballot printing to provide a legally binding paper trail for the election;
- streamlining the processes of ballot printing, transportation, and management.



Flow chart for mode-Hybrid voting



Results Consolidation Process share the same one as OP1 Mentioned

Contents

I

Elements for a successful e-voting

II

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III

Election management system

IV

Election data transmission

Work Flow

- Election Management System (EMS) is a crucial component of electronic elections, designed to assist election management bodies in better overseeing the implementation of electronic voting.
- It should play an active role in all aspects of the election, including but not limited to: device management, polling station configuration, data transmission, and result consolidation.

1. Election Committee Staff
Allocation Election Basic
Information



2. Verify voter
information

3 distribute paper
ballots, voters mark
and cast paper ballots



voting machine
设备计票

4 transmission of
ballots data



5. EMS re-audit
questionable ballots

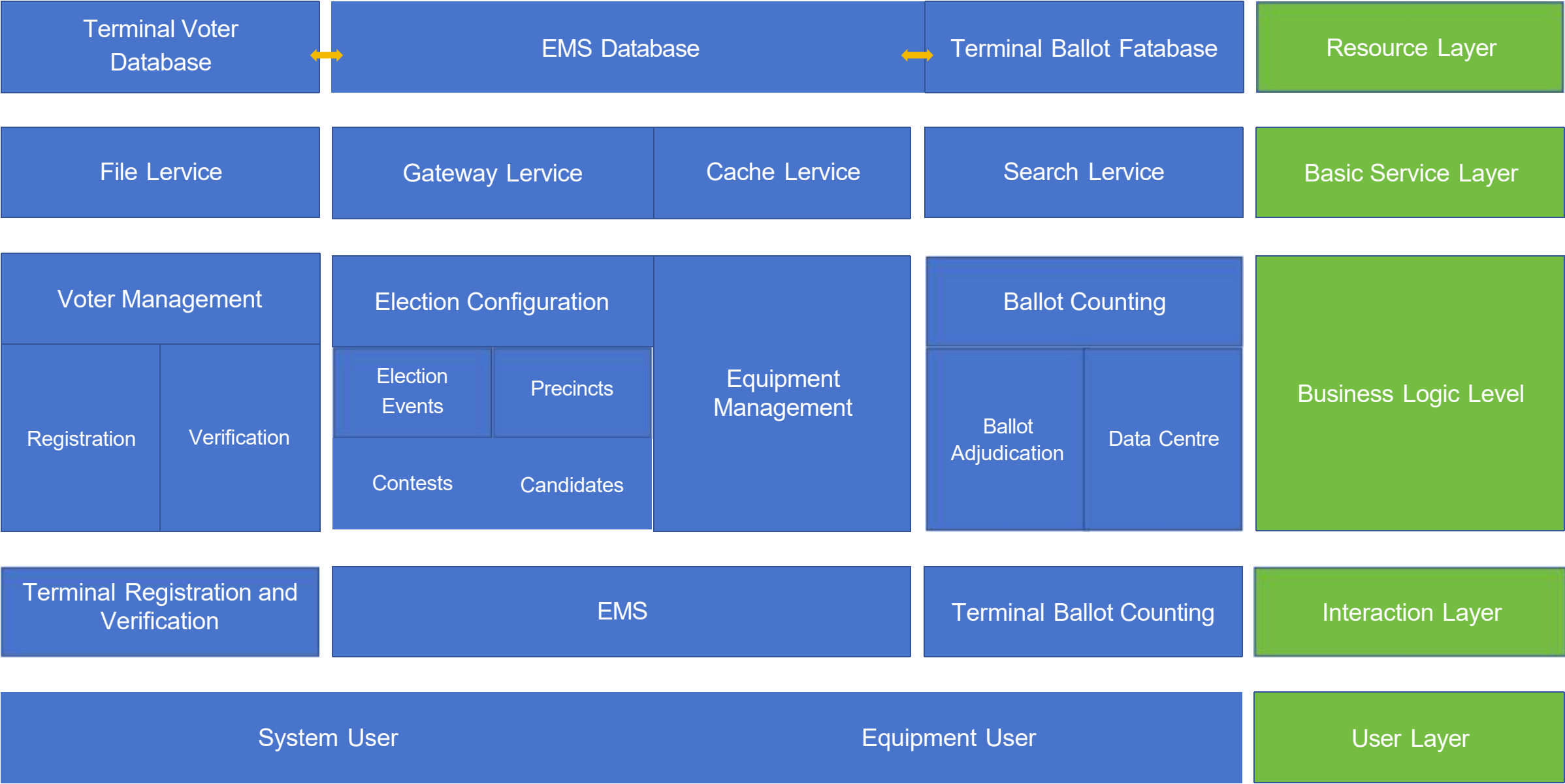


7. Results publishing by
EMS



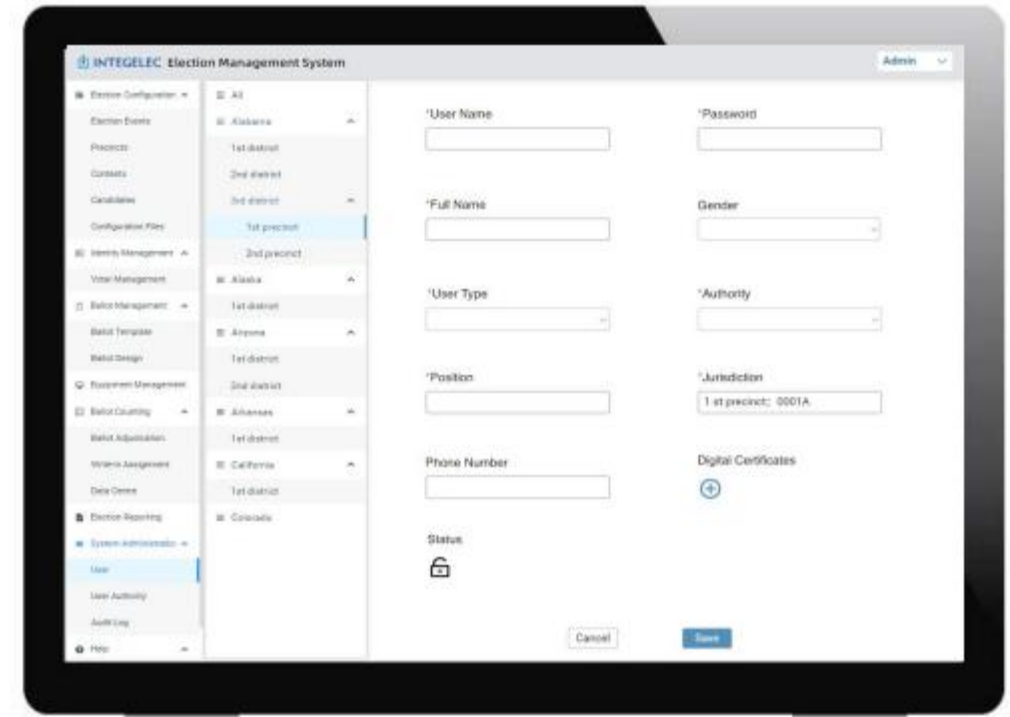
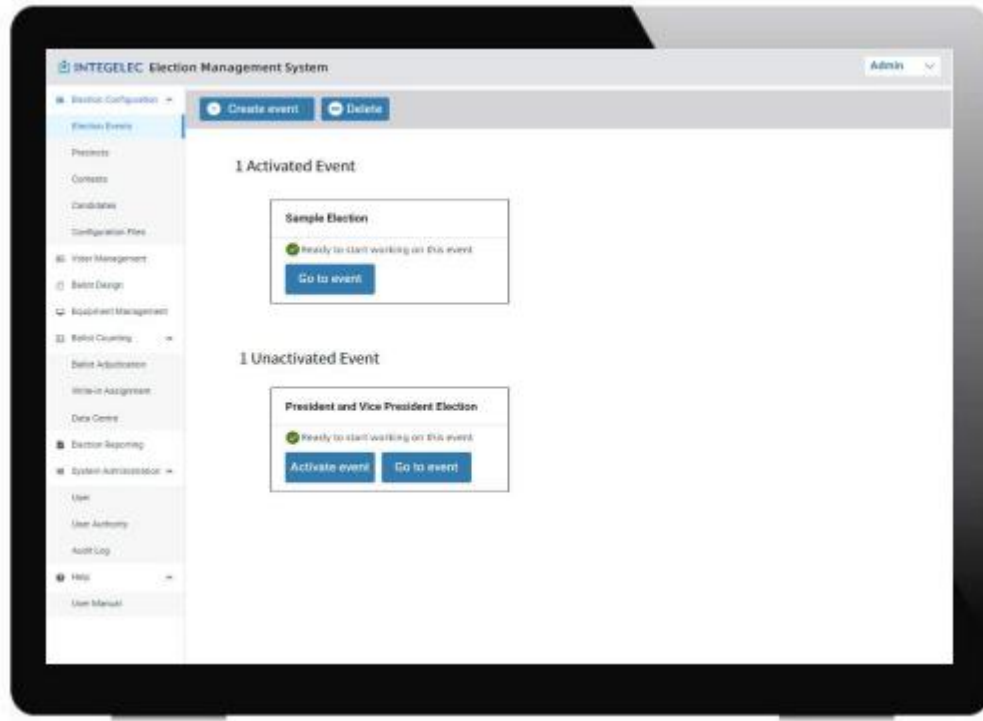
6. Election results
consolidation and
canvassing

System Frame work



Main functions for EMS

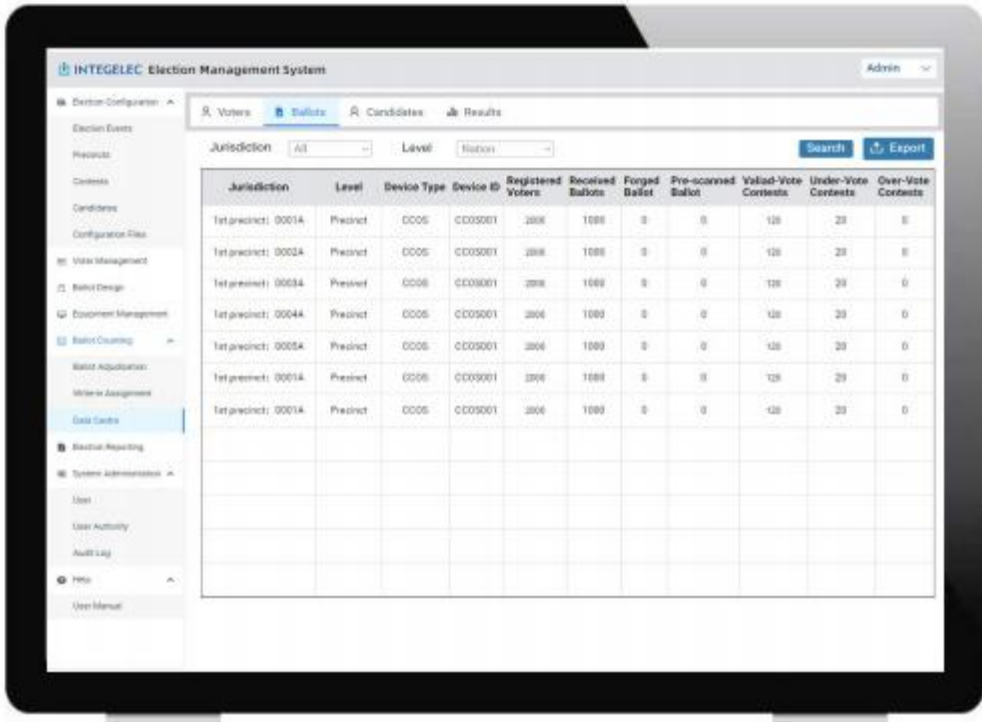
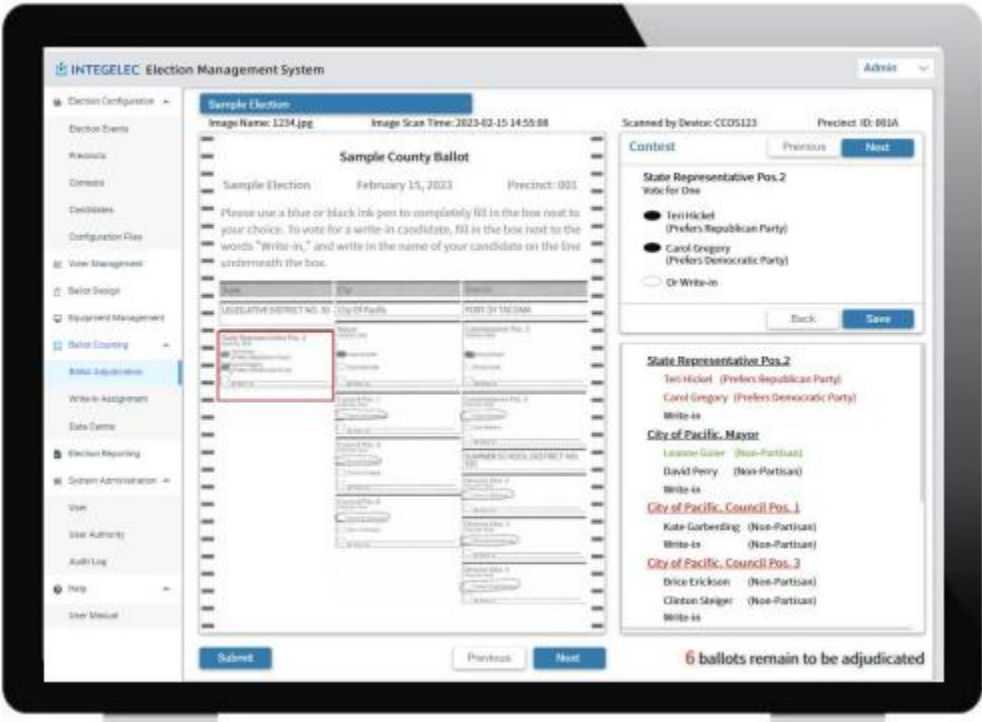
□ Basic info configuration & User Management



Main functions for EMS

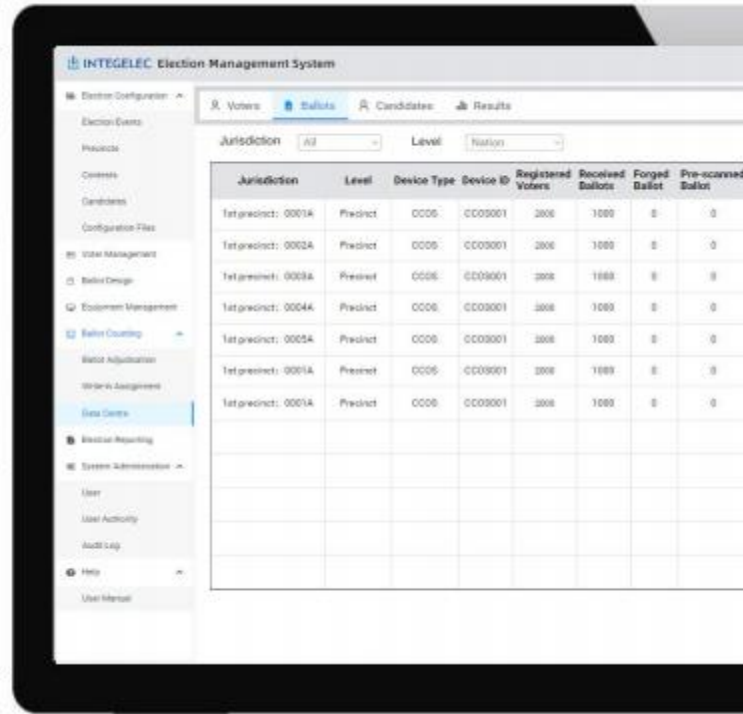
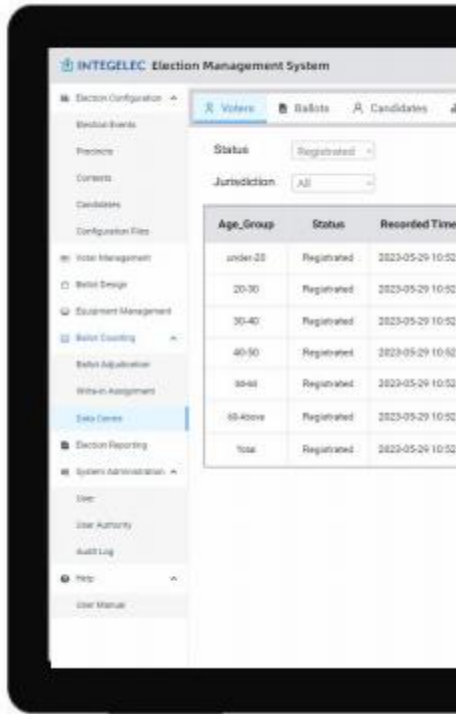
- ❑ Questioned ballots/invalid ballot auditing during counting process

- ❑ Precinct device status monitoring and technical support arrangements



Main functions for EMS

▣ Various kinds of results consolidation and publishing



Contents

I

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II

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III

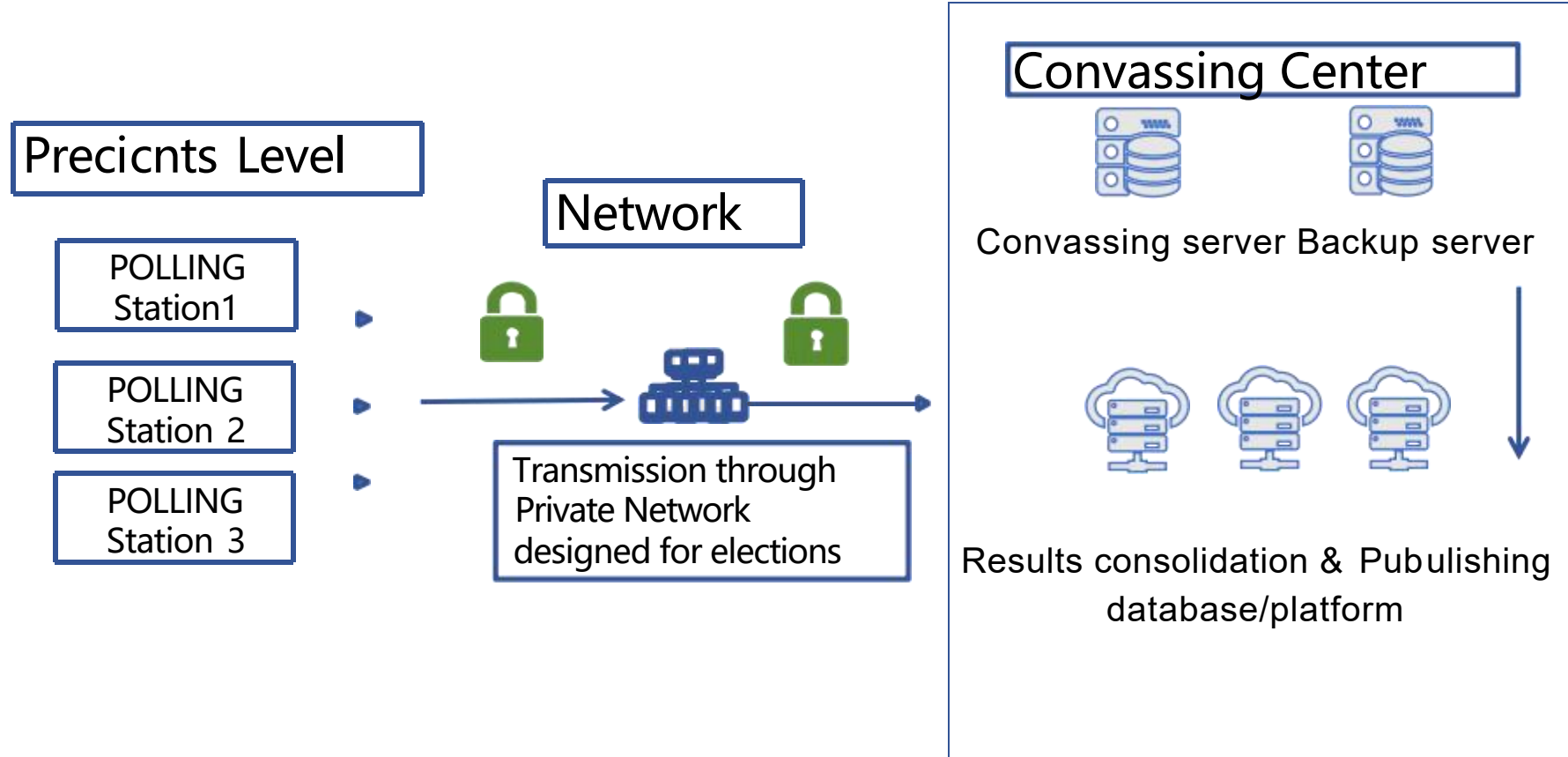
Election management system

IV

Election data transmission

Brief on Convassing Procedures

- The transmission process should employ encryption technology, by establishing a Public Key Infrastructure (PKI) system,
- should utilize various encryption algorithms such as RSA, AES, and SHA1 to ensure the confidentiality, integrity of data during transmission, should be in compliance with the ISO 27000 series security standards.



Backup solution -Offline transmission

- To ensure the security of election data during offline transmission, the data could also be encrypted and stored on customized secure storage devices, such as USB drives or SD cards.
- By utilizing built-in encryption keys for data storage and read/write operations, facilitating the secure exchange of data between the terminal devices and the server. This approach ensures that the integrity and confidentiality of the election data are maintained throughout the offline transfer process.

