Estonian e-enabled elections

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Some facts on Estonian elections

- Population ca 1,3M

- Eligible voters 900K … 1,1M

- 79 municipalities, no regional levels

- All elections are organized centrally

  - Riigikogu elections (12 multi-mandate districts)

  - EU Parliament elections (1 national)

  - Municipal elections (79 districts + some extra)

  - National referendums

- The President is elected indirectly (Parliament or electoral assembly)

- EMB also conducts Speaker and Vice-Speaker elections in the Parliament every year

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Structure of the Election Organization

National Election Committee (NEC)
- Ensures that elections are free, general, uniform and direct
-- Supervisory role, resolves complaints
-- 7 non-political members

State Electoral Office (SEO)
- ensures that election are held in accordance with law
- organises electronic voting
- 7-8 people permanently

Municipal election manager (municipal secretary)
- Responsible for organising elections in the municipality (79)

Polling station committees (450; staff 4500+)
- Half of the members politically nominated

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Voting calendar in Estonian elections

LOCAL GOVERNMENT COUNCILS ELECTIONS 2021

Mon 11.10	Tue 12.10	Wed 13.10	Thu 14.10	Fri 15.10	Sat 16.10	Sun 17.10.2021
ADVANCE VOTING						ELECTION DAY
Voting at polling places of administrative centres 12.00 – 20.00				Voting at all polling places 12.00 – 20.00		Voting at all polling places 9.00 – 20.00
Online voting						
Mon 9.00 …				… Sat 20.00		
Voting at the location of voter 9.00 – 20.00				Home voting 9.00 – 20.00		

Polling booths

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Ballot

Internet Voting

Explaining the I-voting process

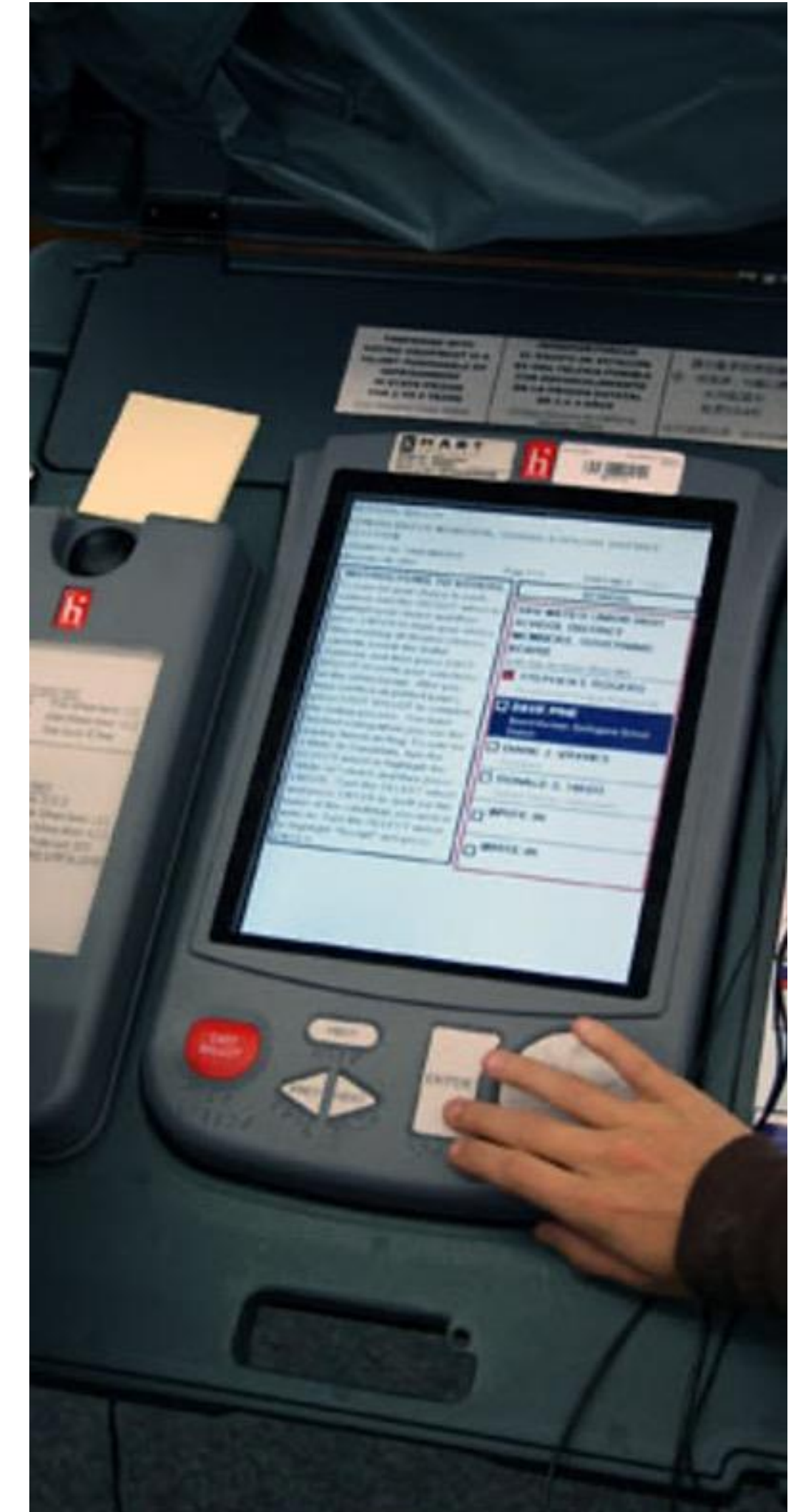# Internet Voting versus Electronic Voting

I-Voting

- Remote voting from an uncontrolled environment (online setting)

- Identity is verified by remote means (e.g. eID)

Used in Estonia!

E-Voting

- Electronic voting by using dedicated machines or devices (e.g. DRE devices, e-voting machines with paper auditing slips etc)

- Identity is verified manually

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General outline

- All major principles of paper voting are followed

- Voting from any computer connected to the Internet

- Alternative to the paper ballot

- State provided eID solutions used for authentication and voting

- No location restrictions during the voting period

Initial Goals

- First discussions in 2002

- Raise voter turnout

- Engage young voters

- Cater for the mobile lifestyle

- Provide for an additional e-service (eID service)
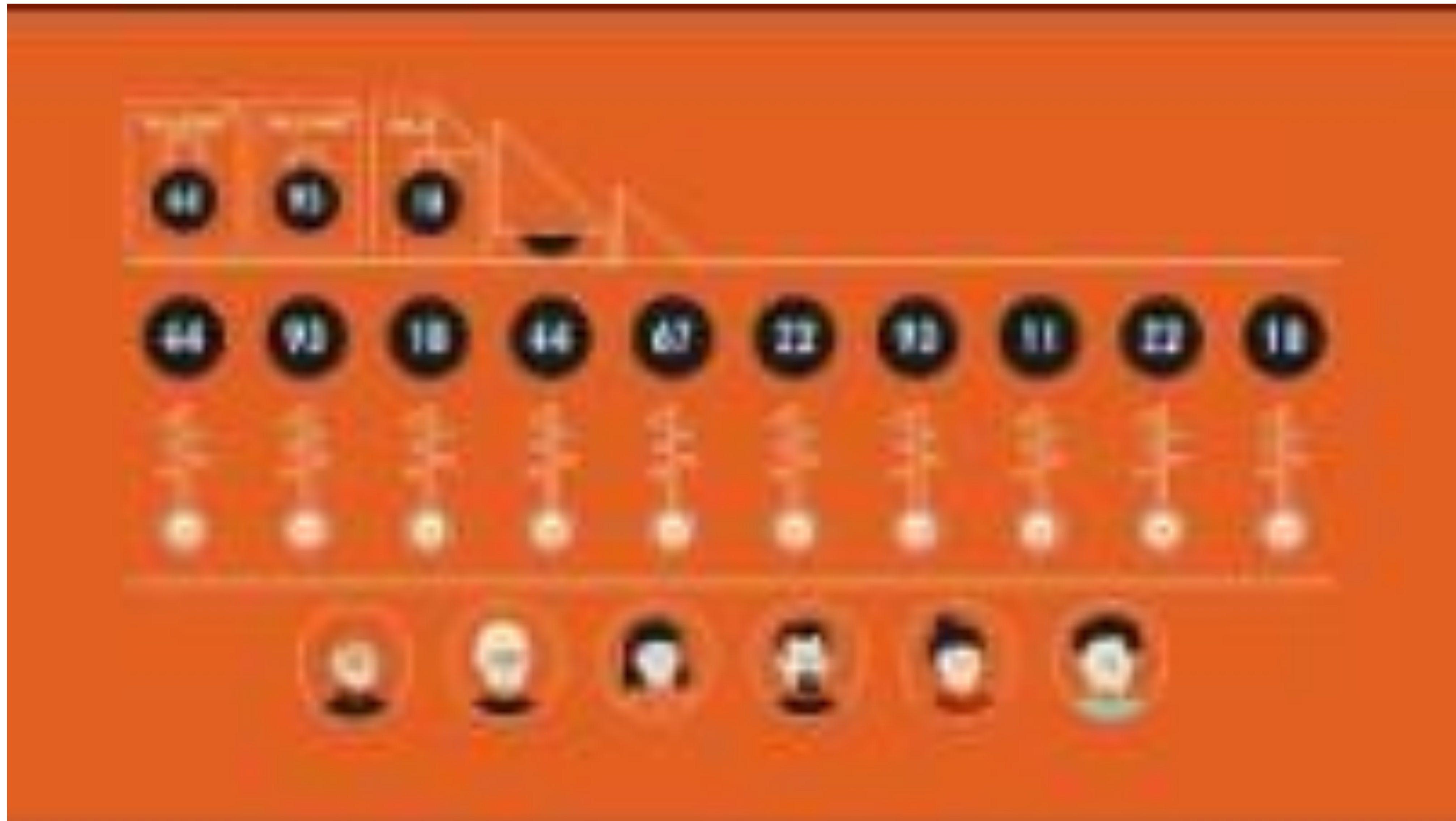

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Spread of Internet Voting

- Initially at 1,9%

- After 12 elections stabilized at around 46%

- Overall turnout depends on election type (National, Local, EU Parliament)

- Internet Voting has no immediate effect on overall turnout

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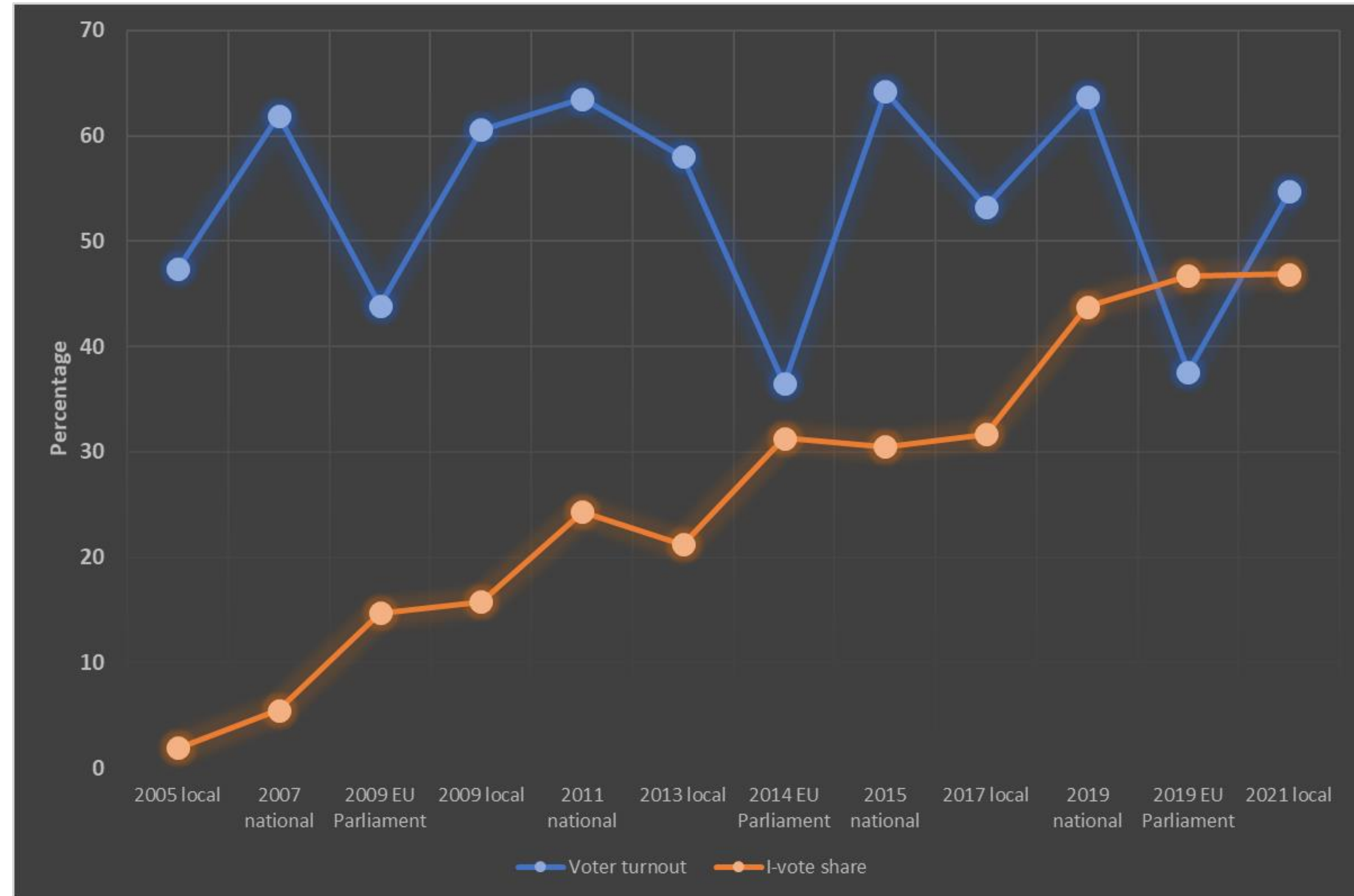
Security features of the system

Ensuring secrecy of ballot and freedom to vote

Re-casting & the Virtual Voting Booth

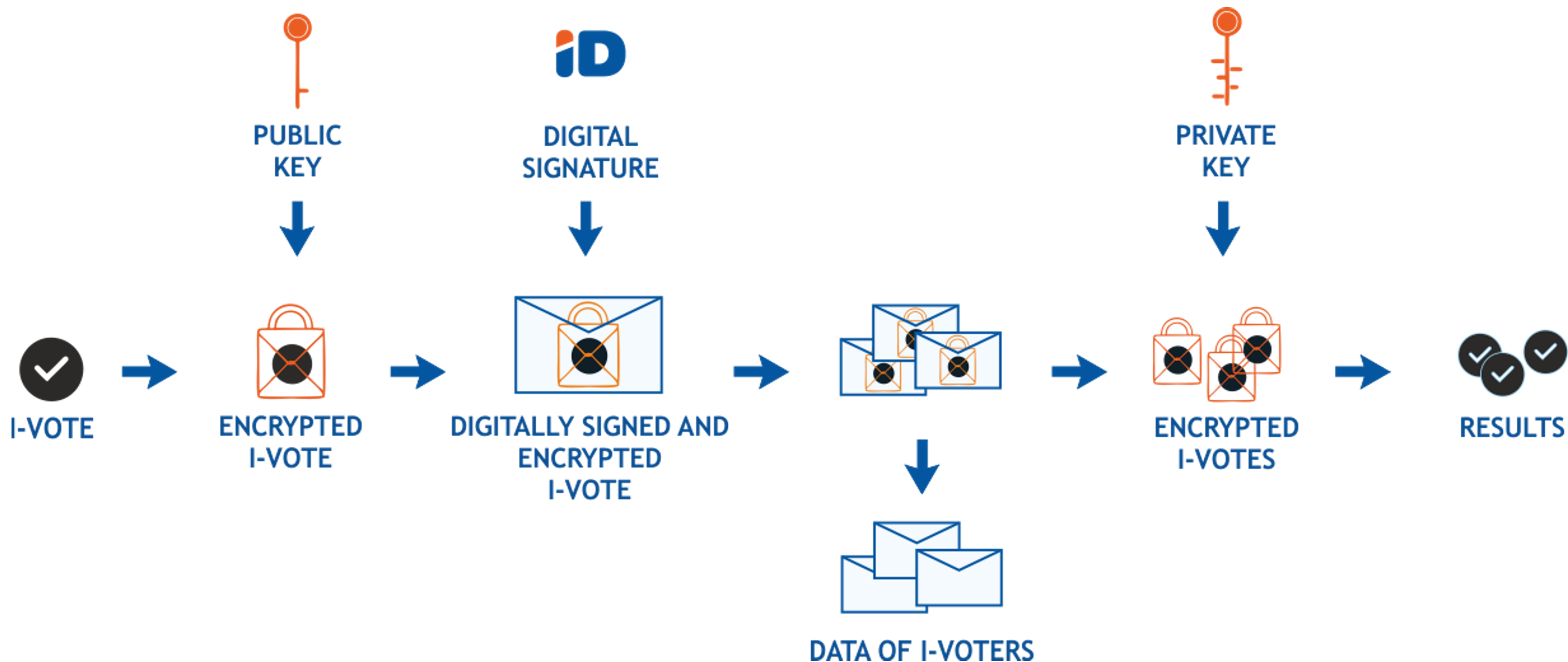I-voting → Voter can re-cast the I-vote infinite times → New I-vote cancels previous I-vote → Paper vote cancels I-vote and is final
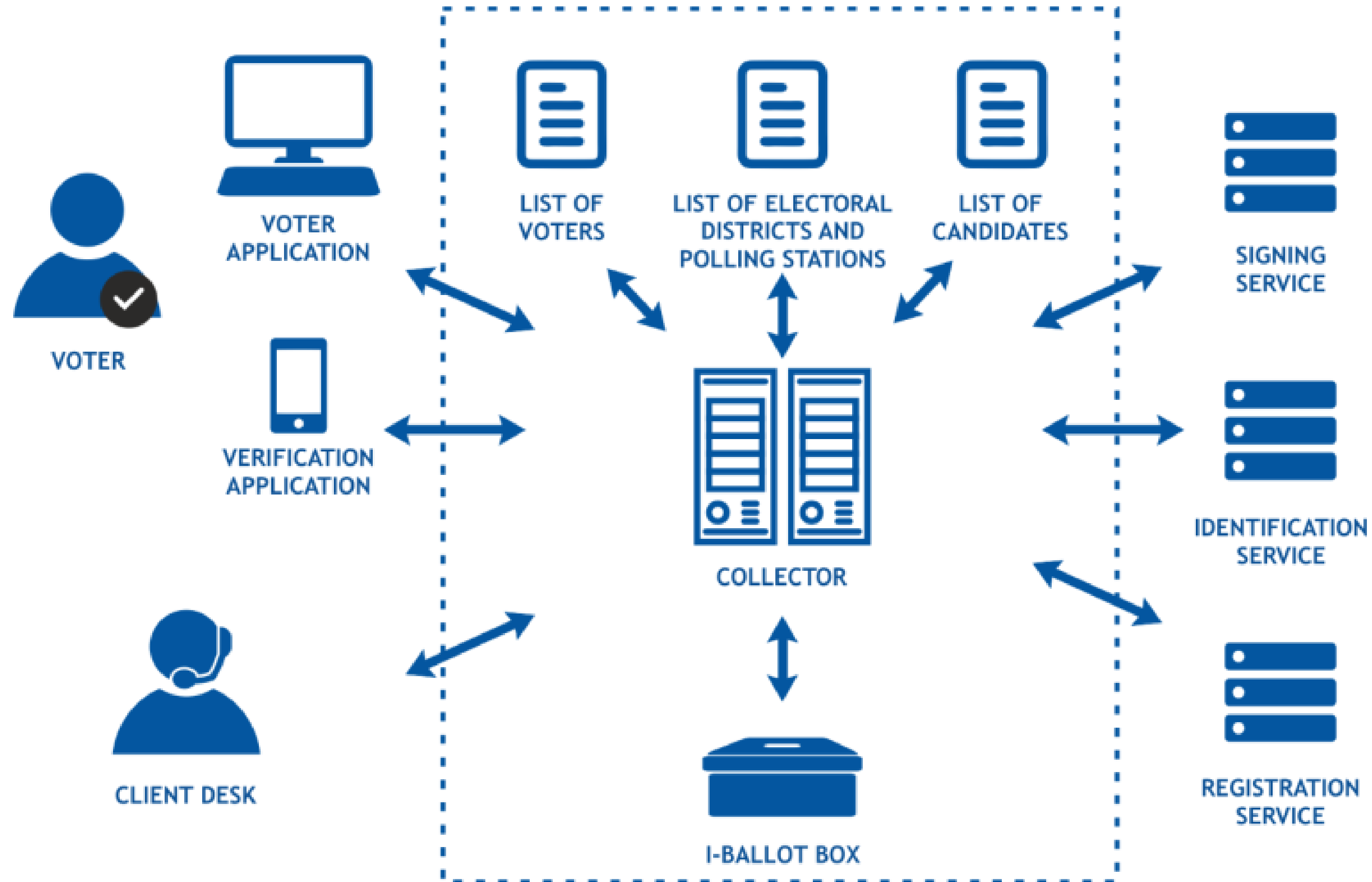
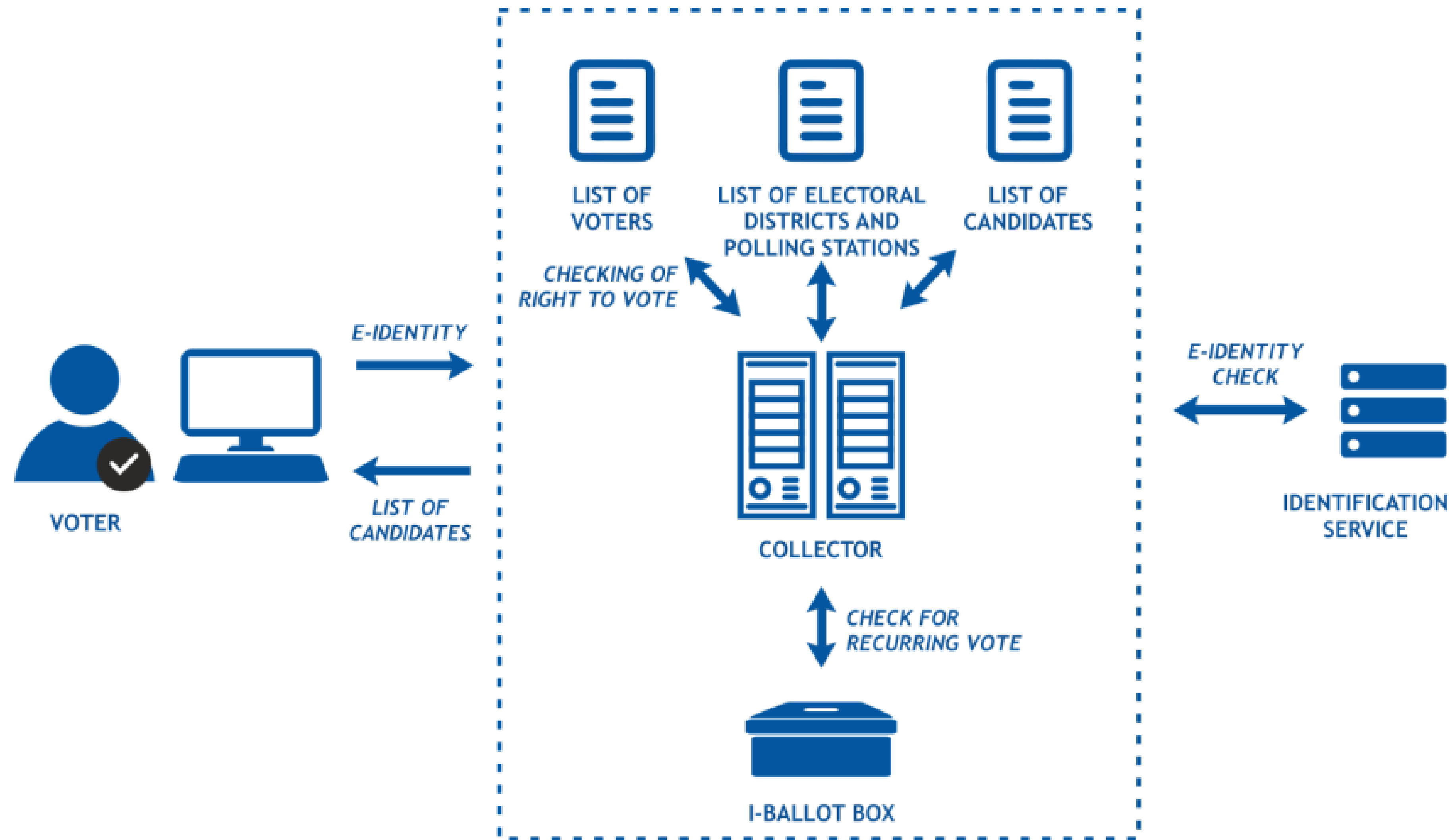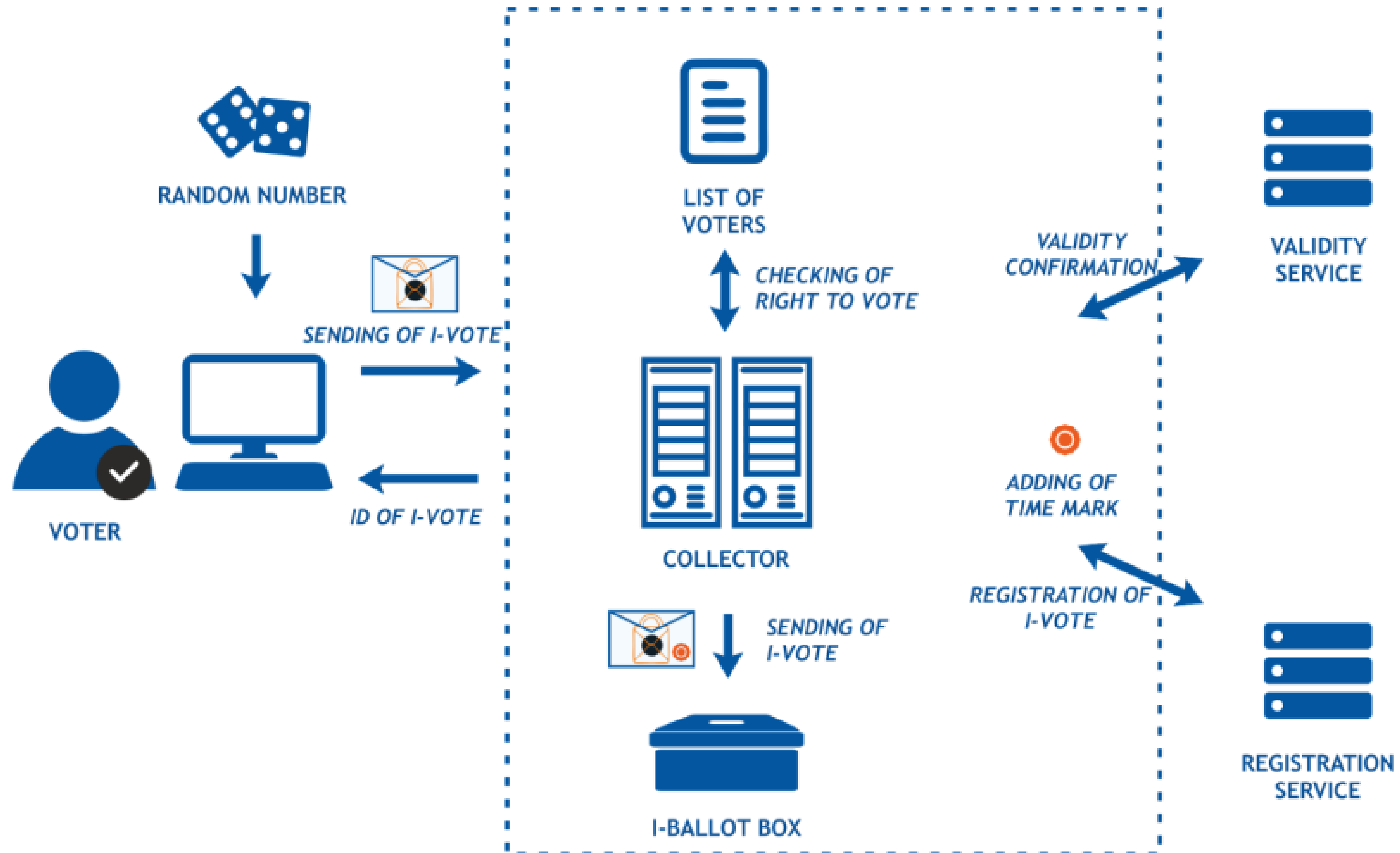Paper ballot → The voter casts a paper ballot and it is is final

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"Double envelope" scheme

PUBLIC KEY

DIGITAL SIGNATURE

PRIVATE KEY

I-VOTE

ENCRYPTED I-VOTE

DIGITALLY SIGNED AND ENCRYPTED I-VOTE

DATA OF I-VOTERS

ENCRYPTED I-VOTES

RESULTS

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System components

Identification process scheme

LIST OF VOTERS

LIST OF ELECTORAL DISTRICTS AND POLLING STATIONS

LIST OF CANDIDATES

CHECKING OF RIGHT TO VOTE

E-IDENTITY

LIST OF CANDIDATES

VOTER

COLLECTOR

CHECK FOR RECURRING VOTE

I-BALLOT BOX

E-IDENTITY CHECK

IDENTIFICATION SERVICE

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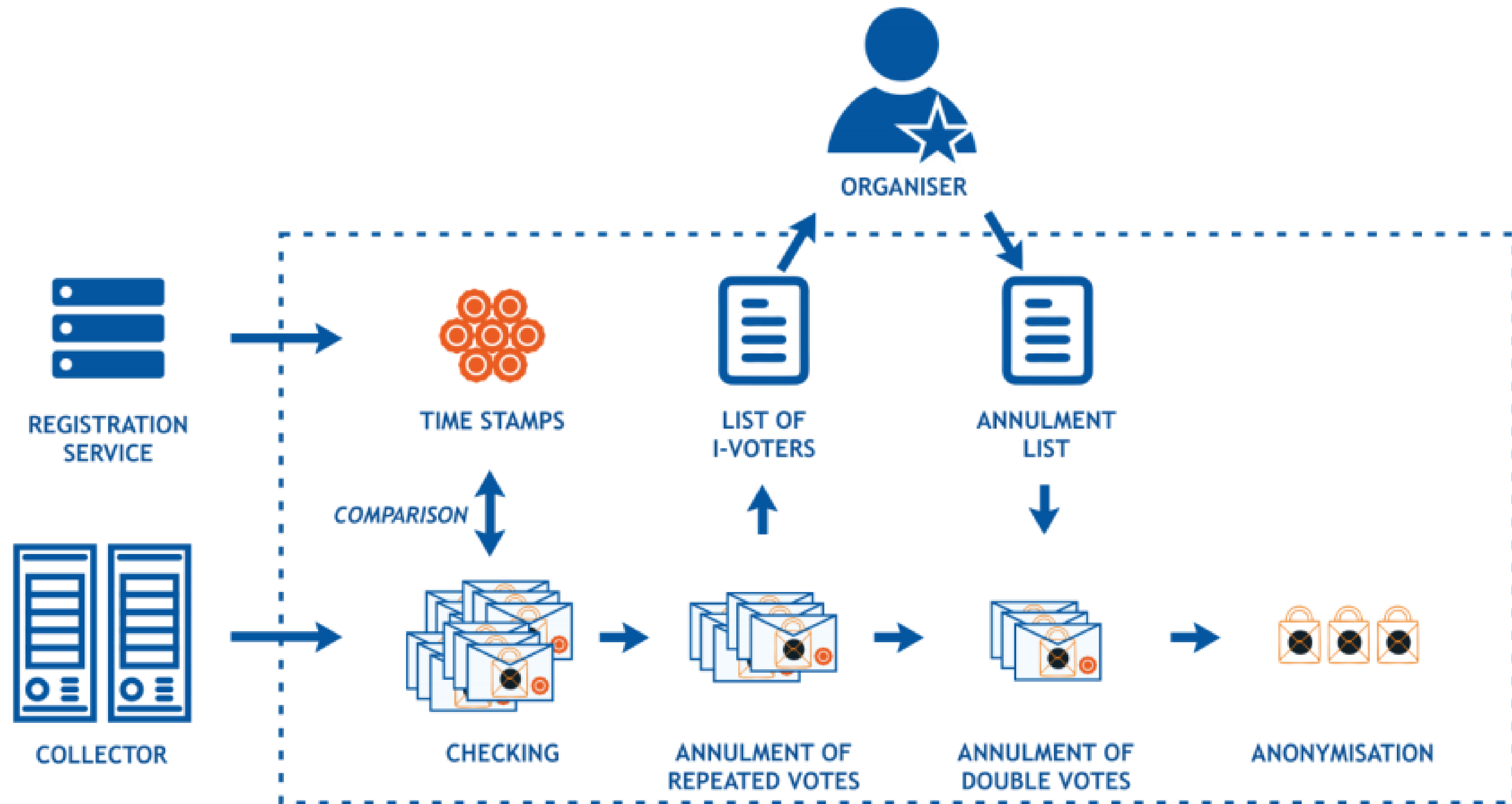
Vote verification process
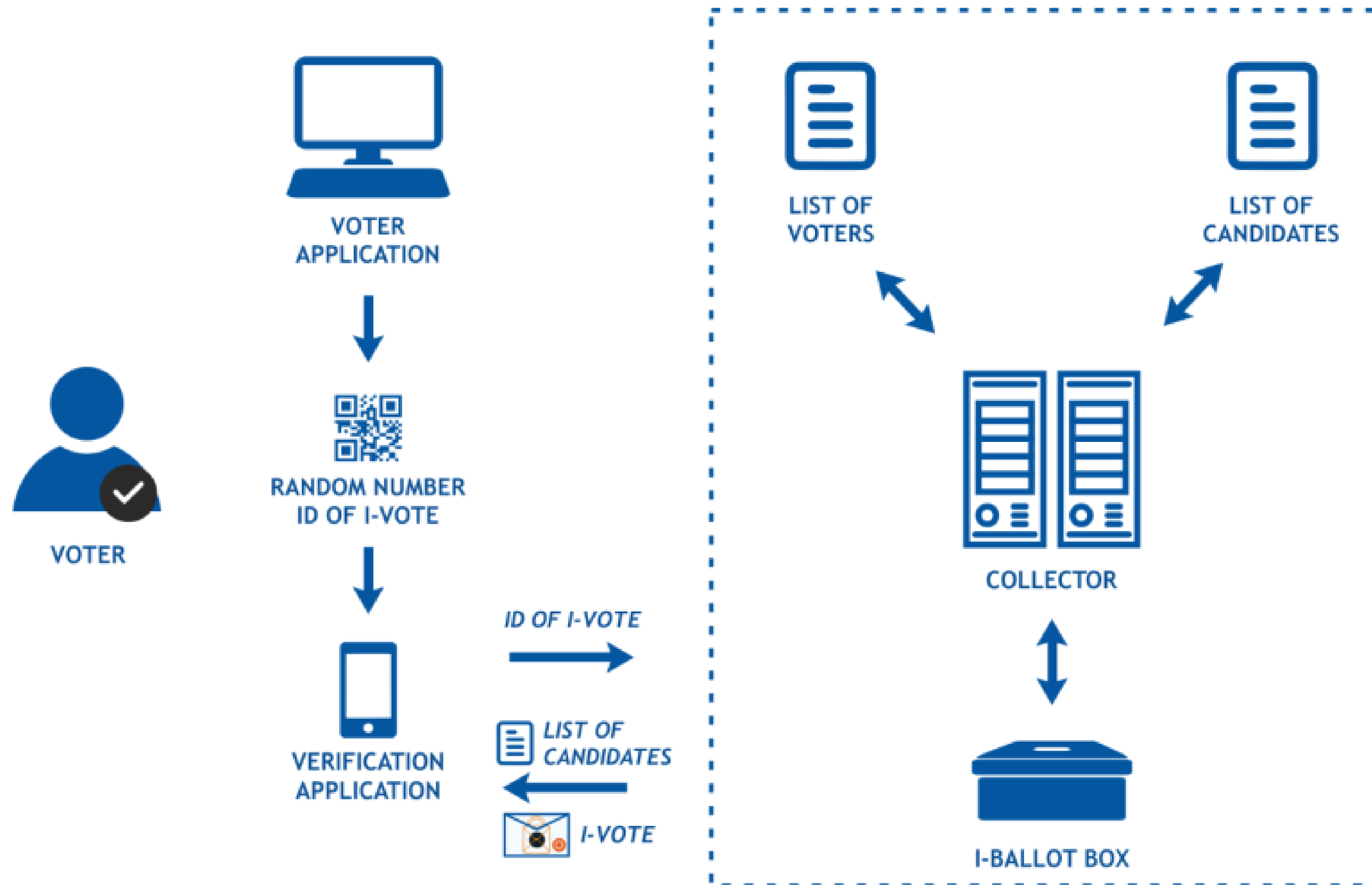
Vote processing procedures

Research results from 16 years

- Internet voting is age neutral, gender neutral

- Not a silver bullet - the youngest voter group least likely to vote

- Older voters vote faster

- Enables the use of assistive IT technologies

- „Stickiness factor" – I-voters more likely to I-vote and vote in the future

- Voting abroad has increased dramatically, both for temporary and permanent abroad voters

- It takes around 3 minutes to I-vote

- If it takes more than 30 min to go to polling station, people are more likely to I-vote

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Why Estonia?

- eID infrastructure

- Basic e-gov building blocks

- Political will (majority)

- Compliance with general principles of elections

- Size of the country

- Laziness and weather ☺

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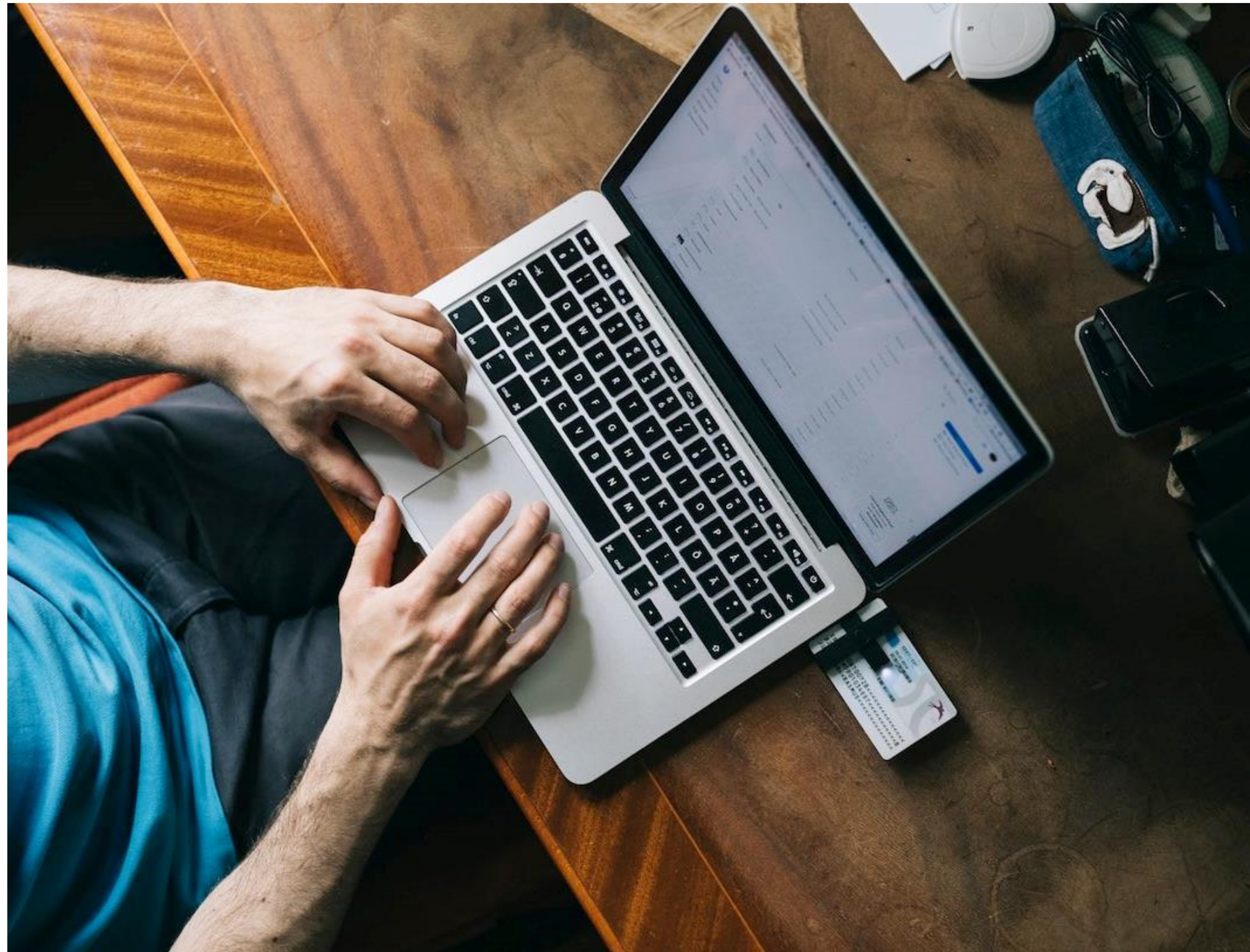
Where to in the future?

- Voting on mobile devices

- Using alternative eID solutions

- Additional verification – Feedback Channel, Facial Recognition etc

- Internet-Voting-as-a-Service

Questions

- What is the acute need for digitalizing election processes?

- What are the added values in introducing additional voting technology?

- Who would benefit/should benefit from the introduction:

  - Abroad voters

  - Voters with special needs

  - Absent voters

  - Mobile voters

- What devices/solutions can be used for basic building blocks?

  - Authentication, identification, signatures

  - Verification

  - Transparency

  - Accessibility, universality

  - Secrecy, anonymity

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Let's make digital transformation happen! Everywhere.

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ISO 9001
BUREAU VERITAS
Certification

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