

# DEFINE PROBLEM/PROBLEM UNDERSTANDING

## BUSINESS REQUIREMENTS

TEAM ID	NM2023TMID04400
PROJECT NAME	BIOMETRIC SECURITY SYSTEM FOR VOTING PLATFORM

### Biometric voter registration:

Last updated 13 June 2023 - average reading

time: 11 minutes



Voting is a fundamental right. Choosing political representatives and participating in your country's government is a cornerstone of democracy.

These rights cannot be exercised without an exhaustive, credible, and reliable electoral roll.

### Data security and privacy:

One of the key challenges of modernizing election processes using biometrics data is ensuring the security of the systems used.

With digital technologies, there is a growing risk of cyber-attacks, hacking, and other cyber threats that can compromise the integrity of the electoral register.

Data privacy is another major concern. Biometric data such as **fingerprints, face or iris scans** are typically considered sensitive personal information.

It is vital to ensure that its collection, storage and use comply with **data protection regulations** and do not violate citizens' privacy rights.

### **Implementation costs:**

Implementing biometric systems can be expensive.

As a result, the cost of collecting and storing biometric data often represents a significant challenge.

Ultimately this ensures free, fair and credible elections that build voter confidence in the electoral process and protect democracy.

### **Access and Inclusion:**

Biometric systems may not necessarily be accessible or available to all voters.

This is particularly true for those living in remote or rural areas with physical disabilities.

Electoral Commissions must therefore ensure that all means of registration and identification of voters will be available to all citizens, regardless of their ability to provide biometric data.

### **Trust and confidence:**

The introduction of biometric systems has the potential to undermine trust in the electoral process.

Therefore, Governments and electoral bodies need to engage in transparent and open communication with citizens to build confidence in using these biometric systems.

## **Twenty years of biometric success:**

Over the past twenty years, many countries have successfully modernized electoral processes and overcome these challenges using biometric technologies.

Taking advantage of unique human characteristics such as the face, fingerprints or iris, scores of Electoral Commissions have made the principle of 'One Voter, One Vote' a reality.

- Strong technical evolution in liveness detection, thanks to the LivDet competition, which has stimulated the development of new techniques and algorithms
- Multi-biometry and the recent use of iris capture & recognition to improve electoral ABIS (Automatic Biometric Identification Systems)
- MINEX III provides a standardized means of comparing different fingerprint recognition systems and measuring their performance against a common set of criteria.
- Integration of Machine Learning-based alphanumeric tools, providing an additional means of identifying duplicated names and other personal details on voter registries)

Many biometric-based electoral systems have now served several election cycles over ten years and beyond.

- Achieve greater efficiencies
- Strengthen their defences against voter fraud
- Keep pace with technological progress
- Take advantage of new standards that enhance interoperability and eliminate the risk of vendor lock-in.
- Deliver projects on schedule and within budget.