

The Case for implementing a Bio-Metric National ID for Voting and/or to replace the Social Security Card

Abstract

Have you ever wondered how Identity Theft, Fraud, and Corruption could be eliminated, while validating personal security and data integrity? Do you think there must be an easy method to streamline government operations and synchronize personal information across government agencies and business enterprises? Would you like to have peace of mind knowing that someone else is not using your identity to purchase items, ruin your credit, and cost you time and money to clear your name and reputation? Ever want to eliminate government squabbling over “States Rights” that are blocking our government from adopting a Voting System based on bio-metric personal identification verification.

It is estimated that 3.6 billion world citizens will have a Bio-Metric National ID by 2020, because many nations are demanding a means to guaranty personal identity without duplication (India already has 1 billion Identification Cards alone).

Do you also want to eliminate a paper Social Security Card that is notoriously easy to duplicate (aliens have been known to purchase illegal Social Security Cards, Green Cards, and Drivers Licenses for about \$300)? Would you want your personal information protected from outside examination without your authorization, or a legal court order? All of this and more can be easily accomplished through the creation of a National Bio-Metric ID Card to replace our present Social Security Card and Voter ID Card. One card that replaces many with improved identification and the elimination of Identity Theft, Fraud, and Corruption. Here’s how and the benefits that can be derived.

A Bio-Metric National ID, or Social Security Card, will:

***Eliminate:** Identity Theft, Fraud, Corruption, and Data Tampering.*

***Provide:** Personal Identification Verification, Data Integrity, data Security, and a means to save billions of dollars per year by eliminating Identity Theft.*

***Usage:** Can be used by business and government for physical and logical access controls.*

Bio-Metrics

Bio-Metrics is the use of personal biological information to prove identity (i.e., DNA, Facial Recognition, Finger Prints, Voice Recognition, Palm Prints, Iris Scans, and more). The Bio-Metric field has made tremendous strides lately and the quality and ease of capturing biological information has dramatically improved, so the use of bio-metric information has become an accepted science that is becoming more widely used every day. Recently, TSA introduced the use of bio-metrics at airports by utilizing a “Selfie” method for validating a person’s identity when checking in and bypassing long security lines by taking a picture of the passenger and performing a facial recognition search. This method has sped boarding and is becoming accepted by passengers and the TSA throughout the United States.

Bio-metrics can be used to generate a Citizen’s Repository Database, that both protects the individual’s identity and provides government services to agencies like Social Security, Law Enforcement, Motor Vehicles, and even Voting. It takes a sequence comprised of different technologies grouped together into a system. These components are shown in figure 1 and consist of:

1. Bio-Metric Capture devices capable of providing the bio-metric information required.
2. Smart Card Encoding Product that stores captured bio-metric information in the smart card chip, formats the smart card with the information and design requested, and produces a laminated smart card as a Bio-Metric National ID Smart Card (the same process can be used to create a Social Security Card, or a Voter ID Card). This card is encrypted to protect the individual.
3. Middle Ware between the Smart Card Encoding Product creates a Citizen Repository Database that contains the smart card citizen data in the desired format.
4. Applications and services can be created from the Citizen Repository Database.
5. Data Security is provided from card creation to revocation and restored for replacements so that data is always protected, even when a new card is created to replace lost or stolen cards. The individual card ID Number (like SS Number) stays the same, but the edition advances.

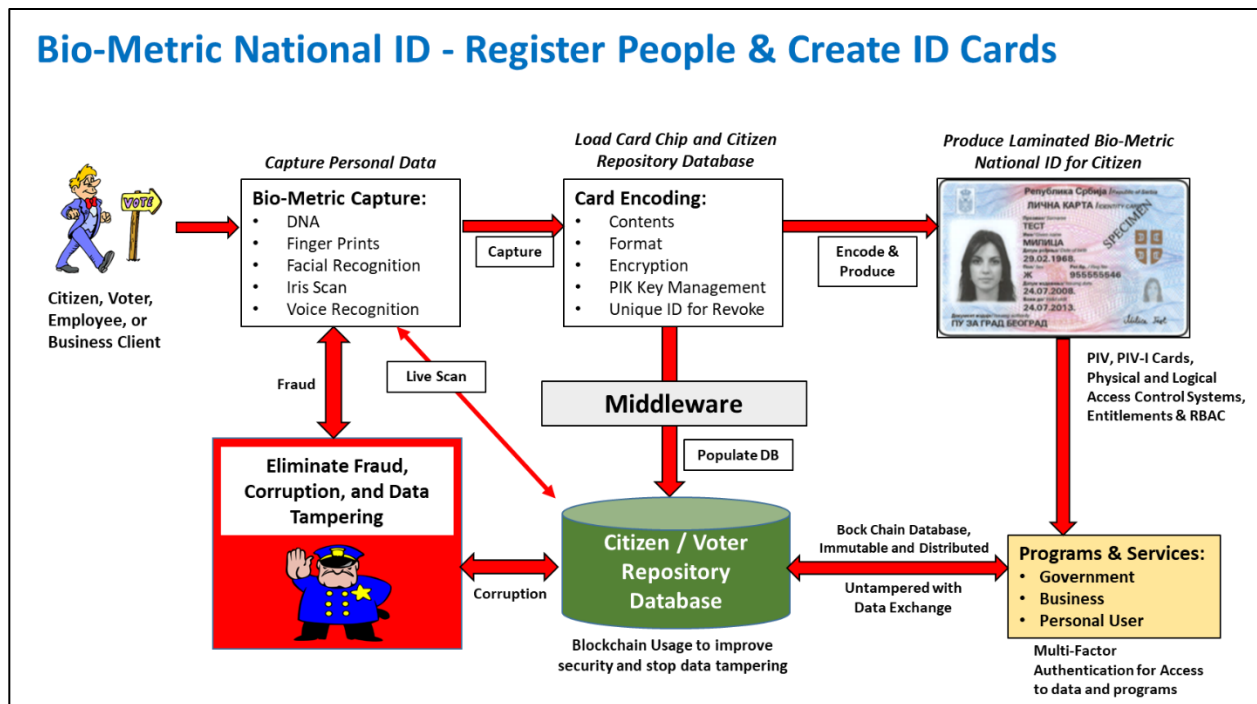


Figure 1: Creating a Bio-Metric National ID

Advantages of Bio-Metric National ID

The use of data from the Bio-Metric National ID Citizen Repository Database to eliminate bureaucracy and make information rapidly available to the citizen who owns the data is a goal immediately achieved through cooperation with public and private enterprises – even across countries for vetting purposes.

The Bio-Metric National ID can be considered a Universal Card that can provide Citizens with physical and logical access to resources, without interacting with bureaucracy and long lines (or the travel and time expenses associated with obtaining your data from government agencies – i.e., Birth Certificate, etc.). The ability to revoke the National ID should a replacement be required can help stop duplication of cards and improve security. This is accomplished through the use of a Unique Universal Identification for each card that can be revoked when a replacement is created, thereby eliminating duplicate cards.

Physical Access to Work Sites and Logical Access to computer files and programs are services that can be achieved through the ID Card, but so would Entitlements like Role Based Access Controls (RBAC) associated with a Job Title and its functional responsibilities as detailed in their job description.

An application (mobile, or Server/PC based) can be used to connect an individual to their Protected Private Parent Profile Record so that they can Create, Read, Update, or Delete (CRUD) their personal information. Interfacing their personal information with business and government databases can maintain their personal information in a current and accurate manner – without manual intervention. This would improve data integrity and reduce personnel costs associated with updating and maintaining personnel data.

Interfacing the National ID Card with Public and Private enterprises

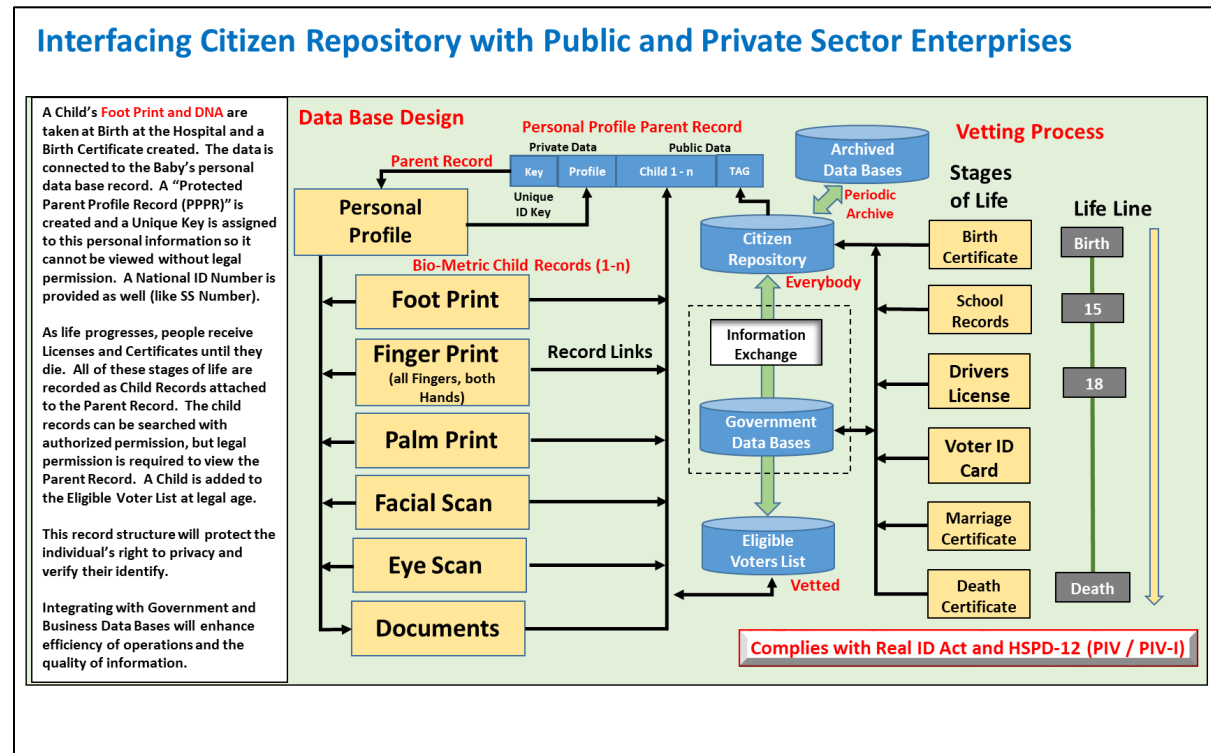


Figure 2: Interfacing Citizen Repository and sharing information

The ability to use the Bio-Metric National ID Card to track citizens from birth to death can help governments and people with the ability to gain approval for services, jobs, and background information at the touch of their fingers. Moving citizen information from a paper based system to a digital system would speed responses and improve quality. This is the basis for the HIPAA system of medial information in the United States and has helped the medical profession provide a better level of care to patients, both locally and remotely. Providing similar services for other processes would improve efficiency and reduce the aggravation and costs associated with obtaining information needed to receive a Driver's License, apartment lease, home loan, or other personal services most people use throughout their lives.

The Parent record is Private and cannot be accessed without authorization, while Child records can be searched by authorized agencies and personnel under the control of the individual. An example of this would be, law enforcement searching for a finger print match. If found, they would still require legal authorization to access the Private Parent record. This protects personal rights, while supporting law enforcement. Only the owner can update their Protected Parent Profile Record.

Tracking people through their life can help people interface with public and private enterprises

Sometimes citizens have trouble obtaining personal information needed to apply for a job, apartment, or other public and private enterprise services. It is also necessary to verify a person's identity when being stopped by law enforcement, or receiving emergency medical services. Critical information needed to provide medical services can be obtained through the Bio-Metric National ID Card when used to access medical records that can provide information on the person's health background, drug usage and allergies, or other data that would help establish medical treatment without causing harm.

How citizens can be tracked from birth to death.

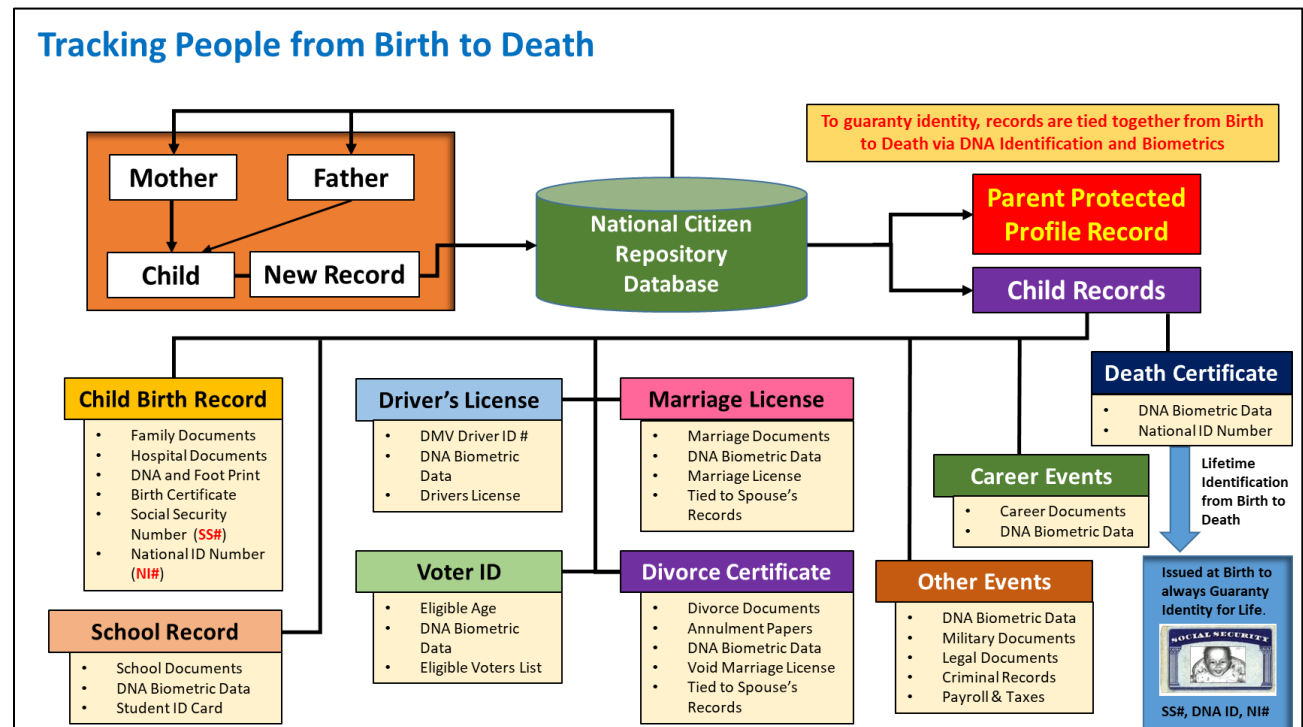


Figure 3: Tracking people from birth to death

From the time a person is born, to the day that they die, information about the person can be accumulated and stored in encrypted and safeguarded database records under the control of the individual. Many benefits can be derived through this process, including:

1. Insuring a baby is tied to its parents so that they can be assured they leave the hospital with their child. Child theft can be eliminated and child recovery and return to rightful parents aided.
2. Birth records can be accessed by the individual to provide citizenship and birth information.
3. School records and a School ID can be created, as can military or other types of records.

4. Driver and vehicle records can be viewed by the individual and law enforcement.
5. Voting eligibility and voting records can be understood without knowing the person's identity.
6. Marriage and Divorce records can be maintained.
7. Career and other specific events can be tracked.
8. Death certificate can be used to close the record and insure the individual is marked as dead in other public and private enterprise records – this could eliminate the death rolls in voting and stop payments as required.

Adhering to Laws, Regulations, and Standards

The use of Bio-Metric National ID Cards is on the rise as are Electronic Voting Systems. It is imperative that standards and guidelines are created and adhered to so that the world can cooperate in information sharing to identify citizens and voting patterns. This information can also be used to guaranty the integrity of voting and that the elected officials did not tamper with the election results or intimidate citizens. The United States has been working on this problem since 1974 with many delays along the way. We are still not there yet, but we have established some very good guidelines that should be considered.

Adhering to Laws, Regulations, and Guidelines

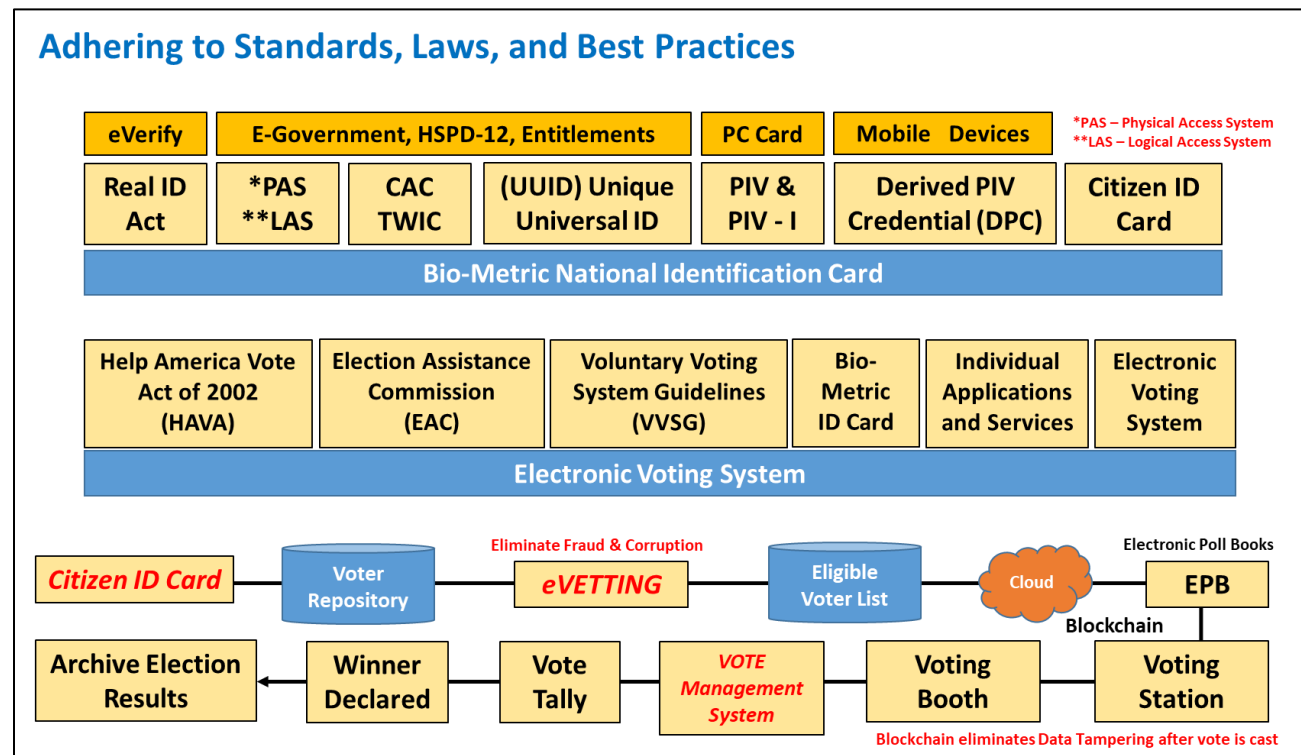


Figure 4: Adhering to Laws and Guidelines

Adhering to World Standards and Guidelines

In addition to adhering to United States guidelines and regulations it is possible to also establish and adhere to world-wide standards. This will allow all countries to create a Bio-Metric National ID Card that

can be used universally, thereby supporting vetting and extreme-vetting that is becoming necessary to defeat terrorism and foster safe travel.

I believe we should move in this direction by sharing ideas, concepts, proven technologies, and best practices guidelines.

Establishing world-wide and national standards for implementation

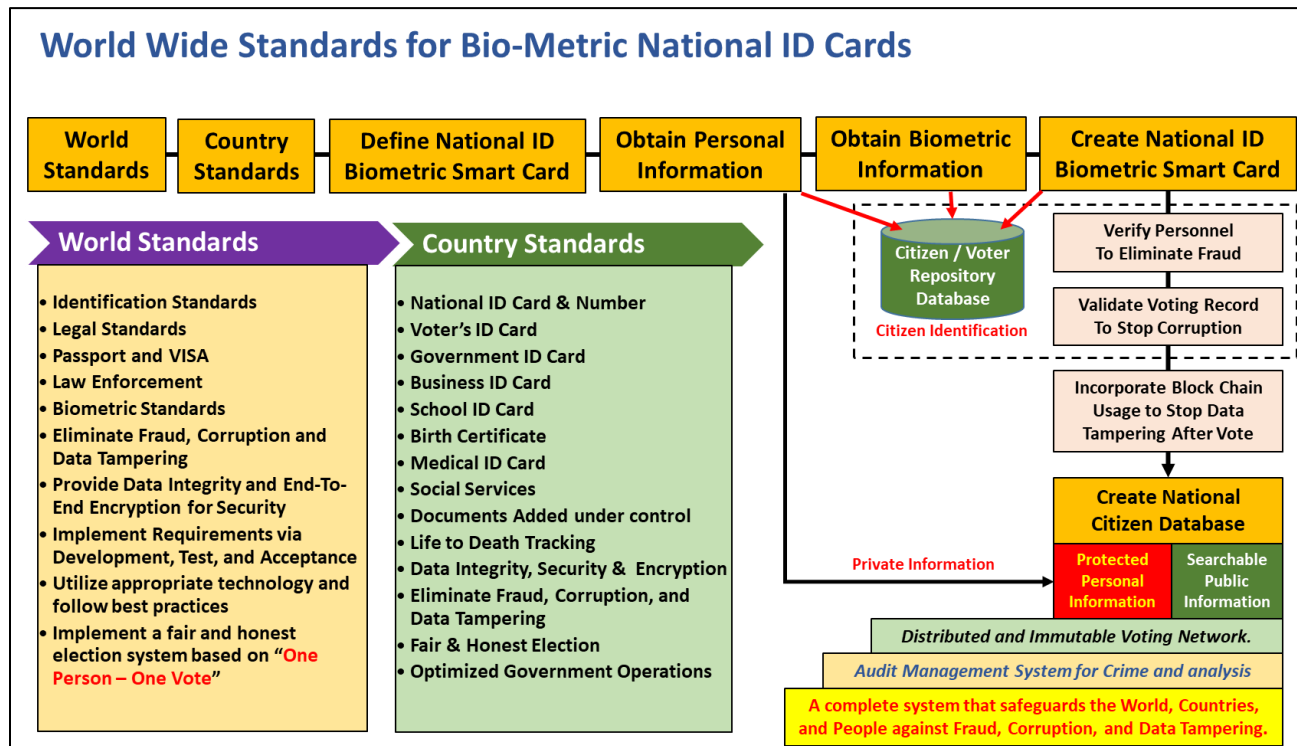


Figure 5: World standards for Bio-Metric National ID Cards

Bio-Metric National ID Cards are derived from:

1. The Real ID Act was established after 9/11/2001 to insure the US Government could identify its citizens.
2. E-Government is an attempt to modernize government operations through computing.
3. HSPD-12 (Homeland Security Presidential Directive 12) was issued by President George Bush in 2004 to insure government employees and contractors are issued a Bio-Metric Personal Identification Verification card (PIV for government employees and PIV-I for contractors). These cards are used for Physical Access to locations and Logical Access to computer systems.
4. A Derived PIV Credential (DPC) was created to support mobile computing at the same level of protection as the PIV and PIV-I cards.
5. The Bio-Metric National ID Card is based on these concepts, guidelines, and laws.

Electronic Voting System foundation guidelines

1. Help America Vote Act of 2002 (HAVA) was the initial guideline enacted to help provide Election Commissions with goals and objectives for a voting system.

2. The Election Assistance Commission (EAC) was formulated to provide assistance to Election Commissions and to share information among participating parties.
3. Voluntary Voting System Guidelines (VMSG) are a comprehensive guide for developing electronic voting systems.
4. Bio-Metric ID Card guidelines are available through government publications and they are used to support government services and access controls.
5. Individual Applications and Services guidelines are published by the government as well and they are used to provide methods for building, testing, and implementing systems in adherence to government standards.
6. Electronic Voting System are a goal right now, but any system that contains paper as part of its process cannot be considered an Electronic Voting System because manual intervention will always inject errors that can result in fraud, corruption, and data tampering.

Voting system process

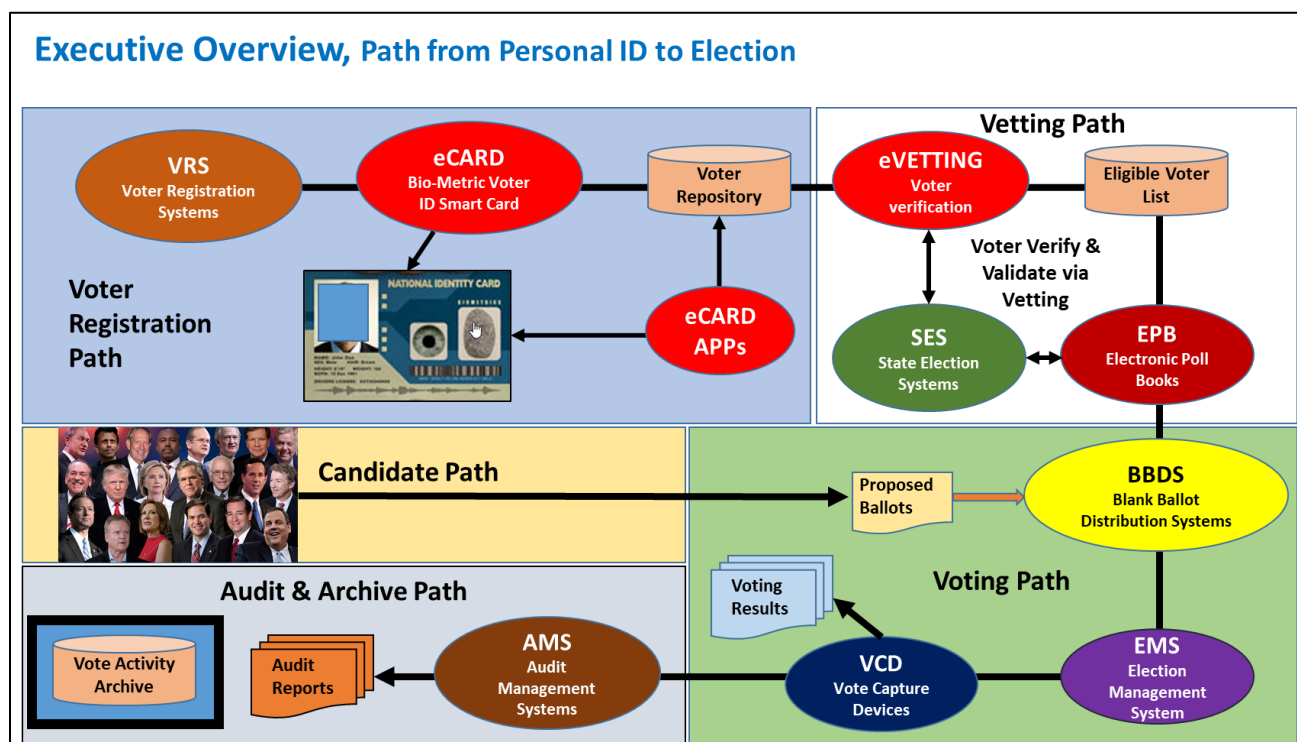


Figure 6: Voting System Process

The five-step Electronic Voting System process

1. Voter Registration and the creation of a Bio-Metric National ID Card, or Voter Card (shown as an eCARD). Applications can be provided to Voters that allow them to maintain their Personal Profile via PC or Mobile Device, and to obtain election and political information.
2. Vetting Voters against Election Commission Guidelines to insure entry to the Eligible Voter List. Electronic Poll Books are generated from the Eligible Voter's List and filtered by Voting Station

for display on the Voting Station Monitor's terminal screen and used to check off people starting the voting process (Turnout Count). The Turnout Count is compared to the Count of Voters and they must be equal. Any deviation is investigated for potential fraud or corruption.

3. The Candidate Path is used to populate Ballots with Referendums and candidate information and a Blank Ballot Distribution System (BBDS) creates electronic ballots, eliminating paper.
4. The Voting Path is comprised of Vote Capture Devices having a common data format and an Election Management System that manages the voting process.
5. An Audit Management System is used to produce an Audit Trail and Documentation that can be analyzed to determine voting trends and to produce evidence in prosecuting violators.

Detailed Voting Process

1. The Electronic Voting System must be initiated through a bio-Metric ID Card so that the individual's identity can be verified and fraud eliminated, so a voting system cannot stand alone. The Voting system is front-ended by:
 - a. Bio-Metric data capture
 - b. Bio-Metric ID Card Encoding
 - c. Citizen Repository Database creation
 - d. Vetting system to compare the individual's background to the Election Commission Guidelines to validate they are an Eligible Voter
 - e. The Eligible Voter List is filtered by Voting Station to generate Electronic Poll Books that are specific for each voting station and displayed on the voting station monitor's computer.
2. When the Voter enters the Voting Station, a Live Bio-Metric Scan is taken and their identification verified against their Station Monitor's computer. This creates an Audit Trail record that the individual has initiated the voting process (eliminate Fraud) by entering the correct voting station.
3. The Individual's voting record is validated to insure they have not previously voted in this election (eliminate Corruption).
4. The voter is directed to a Voting Booth where they swipe their Voter ID to start the voting process (an Audit Trail record is created to note the individual has started the voting process in this specific voting booth).
5. A display screen at the voting booth provides:
 - a. Language Selection
 - b. Help and Orientation, if desired
 - c. Selection Process for candidates and referendums
 - d. Review process to insure your selection is correct
 - e. Submit process to cast your vote. When a vote is submitted:
 - i. A Picture is Taken and Time Stamp recorded
 - ii. The voting selection is processed
 - iii. A receipt is generated with the voter's picture, selection, and time stamp (the voter can select a paper copy, email, or Text Message for the receipt).
 - iv. An Audit Trail record is generated to record that the voter has cast a vote (not what they voted for). The Voters database record is updated to indicate they

have voted in this election. The Audit Trail is now completed for this individual voter.

- v. Data Tampering is eliminated after the vote is cast through Blockchain technology.
- vi. End-to-End data integrity is maintained via encryption and access controls.
- vii. Load Balancing and Error Handling programs balance the work load and capture errors. Errors are recorded, alerts generated, actions taken (including the circumvention of failing components), problem tickets created, repairs made, and components replaced or reactivated. All transparent to the voter.
- viii. A Voting Operations Center (VOC) and Emergency Operations Center (EOC) are command centers maintained at Election Headquarters. They are responsible for responding to Load Balancing and Error Handling so that failing components are immediately bypassed and smooth operations are maintained.
- f. The Audit Manager will store the Audit Trail record for analysis and trending as well as for archive after the election has completed.

Implementing a Bio-Metric National ID Card and related services

The process of creating and supporting a Bio-Metric National ID Card is illustrated below

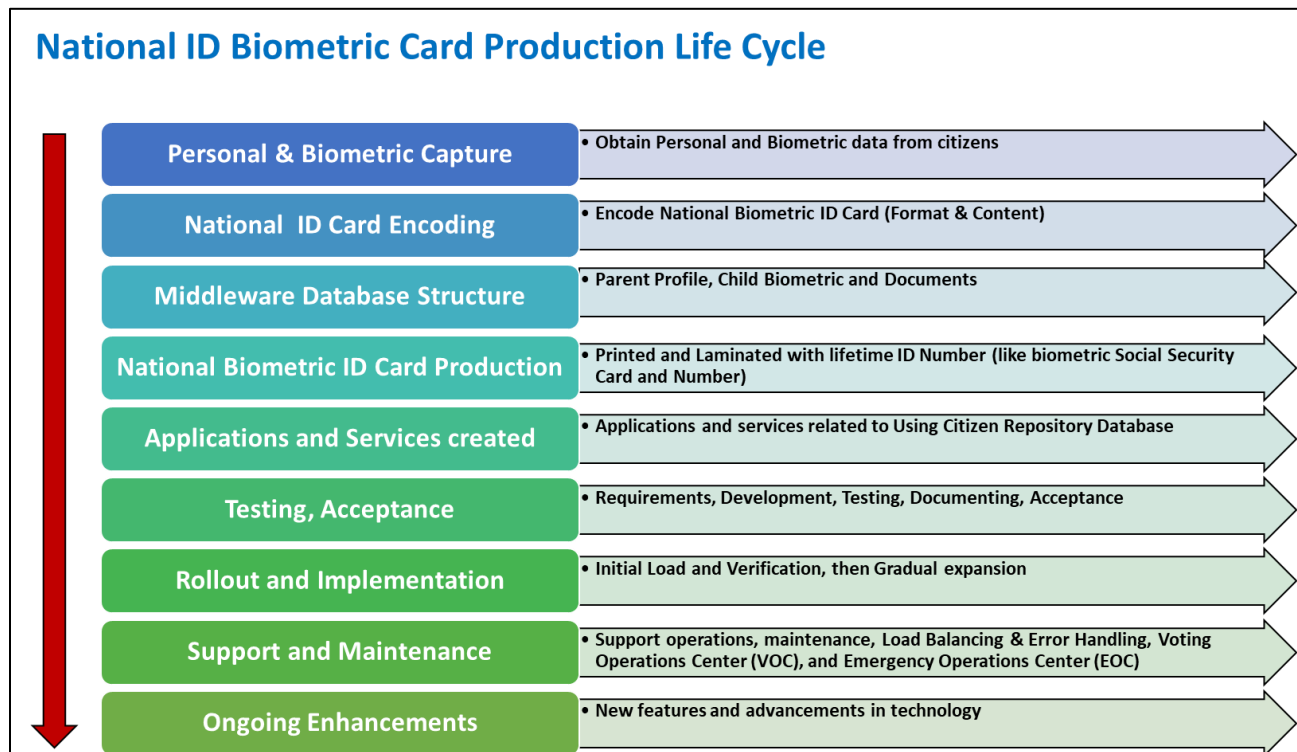


Figure 7: Biometric Card Production Life Cycle

Benefits derived from Bio-Metric National ID

1. National Bio-Metric ID Smart Card

- a. Every Citizen, Voter, Employee, Student, or member of the Military can be identified.

- b. Can replace Social Security Card in United States and provide better protection through National ID number.
 - c. Eliminate Identity Fraud and the use of multiple cards.
 - d. Reduce / Eliminate costs of Fraud and Robbery through Identity Theft and misuse of SS Number.
2. **National Citizen Repository Database**
- a. Generated through Citizen Registration when creating National Bio-Metric ID Smart Card.
 - b. Protected Private Profile **Parent Record** that only the owner can access, or through legally obtained permission via court system.
 - c. Searchable **Child Records** containing bio-metrics and personal documents (the owner deems viewable or not).
 - d. Can Track a person from Birth to Death.
 - e. Can interface with Government and Business databases to share information.
 - f. Can provide Record Owner with documents and information via electronic methods.
 - g. Owner can make Profile Changes (i.e., Address, Contact, etc.) that can be broadcast to business and government databases instantly without manual intervention.
 - h. Owner can add documents and certificates to database and define access restrictions to data by others.
 - i. Owner can obtain election and political information based on their National ID Number (other information?).
 - j. Use of National ID Number can be monitored to prevent Fraud.

Benefits derived from Electronic Voting System

1. Based on **"One Person – One Vote"**.
2. **Individuals are vetted** to insure they are eligible voters adhering to Election Commission Guidelines.
3. Voting Station **Electronic Pool Books** are generated for each voting station via filtered reports that list Eligible Voters scheduled to vote at that station. These lists are displayed on terminals that allow for individual look-up and verification.
4. **Voters are compared to Electronic Pool Book** via ID Card and Picture Display and marked in turnout count (turnout count and vote count provide a checks and balance against fraud and corruption - vote count equals turnout count).
5. **Fraud** is eliminated via "Live Bio-Metric Scan" at Voting Station to verify person's identity prior to their vote submission.
6. **Corruption** is eliminated by guarantying that an individual has not previously voted in this election through a database look-up to inspect individual's recent voting activity.
7. **Data Tampering** is eliminated after a vote is submitted through Blockchain technology.
8. **Provides Data Integrity**, end-to-end encryption, security, and access controls via Entitlements (Role Based Access Controls via Job Title and Person in Role).

9. **Load Balancing and Error Handling** techniques insure smooth voting operations and the identification and circumvention of failing components -- even entire systems -- without loss of data and transparent to the end user.
10. **Completely paperless**, easy to use, supports people with disabilities, and able to provide voting results in near real-time.
11. **Blank Ballot Distribution System (BBDS)** provides specific voting ballot for each voting station and displayed via electronic touch sensitive terminal screens for voters to cast votes from (also, language selection, help, selection, and preview before submission).
12. **Election Management System (EMS)** uses **Vote Capture Devices** (Interoperable Devices with a Common Data Format) to obtain and manage the voting process (these devices could eventually be remote Smart Phones, PC's, or Tablets).
13. **Audit Management System (AMS)** monitors voting from start to end with picture receipt provided to voter at end of process (when vote submit is selected a picture is taken and voter receipt generated) and Archived after election.
14. **Voting Operations Center (VOC)** and **Emergency Operations Center (EOC)** and provided for rapid problem response.

Summary:

Although Electronic Voting was used as an example throughout this White Paper, it can be replaced with the creation and use of a Bio-Metric Social Security Smart Card. I believe that the replacement of the existing paper based Social Security card with a Bio-Metric Social Security card is imperative. Through this effort, it will be possible to eliminate Identity Theft and many crimes based on the use of illegally obtained individual identities. It is the responsibility of the government to insure the safety of individual's, including their identity. The government is also responsible for properly utilizing tax payer funds. Replacing the current paper Social Security card would save money, improve efficiency, and safeguard people. **WHY HASN'T THE GOVERNMENT RESPONDED TO THIS CRITICAL NEED?**

This is a Political Problem and not a Technical Problem. If Citizens elect political Representatives, isn't it the right of Citizens to demand a change that would provide a safe world to live in and raise their children in peace. I believe this paper provides a "Fair and Honest" method for achieving these goals and objectives. Do you?

About the Author

Tom Bronack started his career at IBM in the New York City Downtown Banking Office in 1969 (he's old) as a



Mainframe Computer Customer Engineer (CE) and then a Programming Systems Representative (PSR) responsible for support operating systems. He worked for banks (MHT and Chemical), Storage Technology Corporation (NE Regional Systems Engineering Manager), and SIAC (Securities Industry Automation Corporation) supporting the NYSE and AMEX as the Systems Programming Manager. In 1980, Mr. Bronack started the Data Center Assistance Group (DCAG) and provided consulting, sales, and staff augmentation. He has had some very exciting and rewarding assignments (just ask him), including the design of an Electronic Voting

System and has affiliated with bio-Metric Capture, Card Encoding, and Development organizations that bring together top tier personnel dedicated to creating the best, most secure, and accurate voting system ever created. We invite your inquiries and comments. To contact Tom Bronack: Email: bronackt@gmail.com. He would love to discuss your needs and concerns.