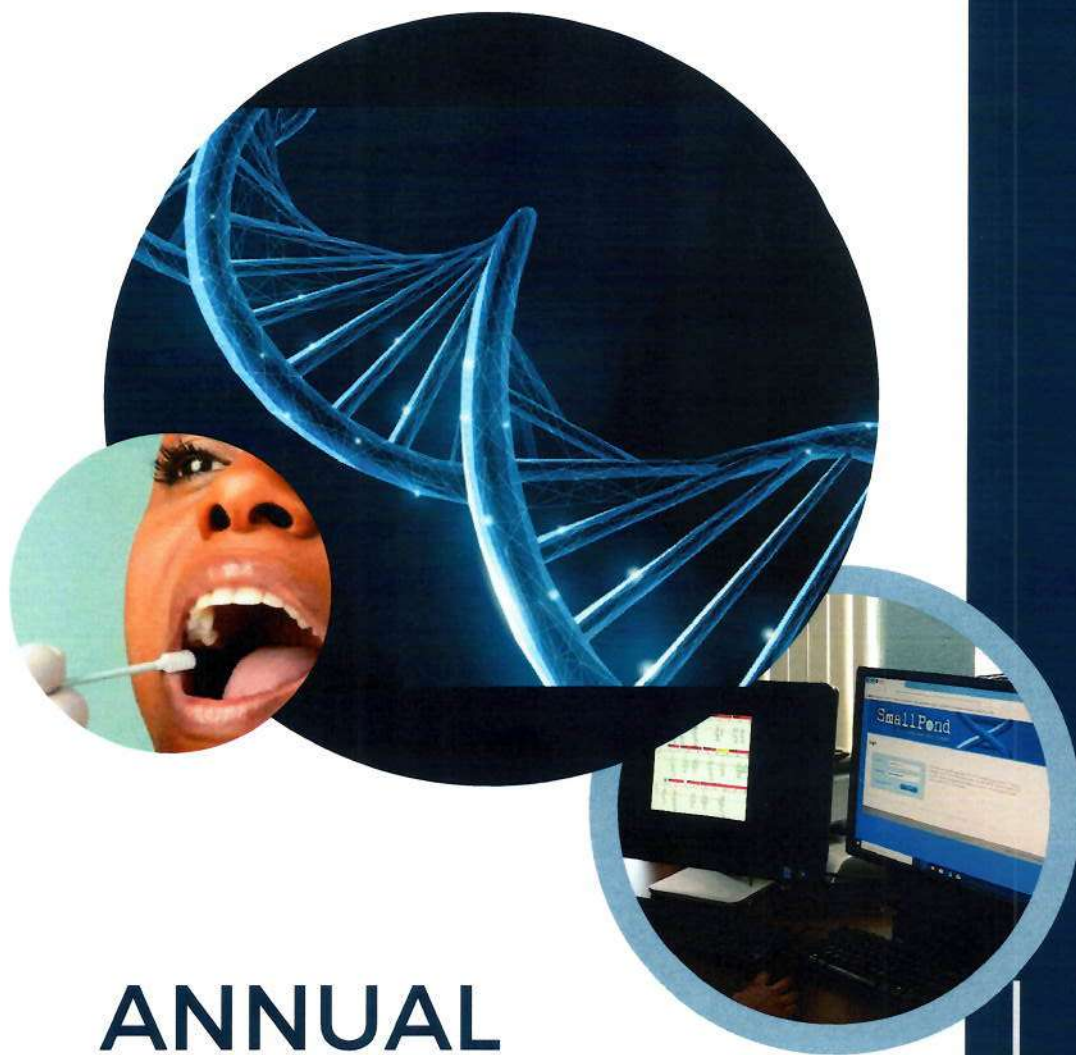


**NATIONAL FORENSIC DNA DATABANK
CUSTODIAN UNIT**



ANNUAL REPORT

of the Custodian's Operations

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Message from the Deputy Custodian Manager

I am thrilled to unveil the Annual Report of the Custodian's Operations for 2023 as the National Forensic DNA Databank (NFDD) Custodian Unit approaches its seventh anniversary.

Throughout the years, the Unit has faced its unique set of challenges which included the unavailability of high quality DNA profiles, financial constraints, the existence of silos within the Ministry and insufficient support from internal and external stakeholders. However, through unwavering commitment and strategic innovation, the NFDD Custodian Unit can boast of the following seven major accomplishments: **the development of a Quality Management System, the preparation and passing of the Administration of Justice (Deoxyribonucleic Acid) Regulations 2018, the publishing of its minimum standards** in accordance with Regulation 4 of the Administration of Justice (Deoxyribonucleic Acid) Regulations 2018, **the reporting of its first databank match** to the Trinidad and Tobago Police Service, **the training of six hundred and fifty persons in Buccal swab sample collection, the collection of ten thousand three hundred and seventy nine (10 379) reference samples** from persons listed in the Third Schedule, and the **establishment of a fully operational DNA Databank** that meets all statutory and regulatory requirements.

In the following pages, you will find a detailed account of the Unit's activities and achievements for the year 2023, which addresses the size of the DNA database, the Buccal Swab Sample Collection Exercise and the procurement of NFDD critical hardware.

The future of the NFDD Custodian Unit looks bright, and I am energised by the opportunities that lie before us. For 2024, we aim to deepen our relationships with the Trinidad and Tobago Prison Service, the Immigration Division, the Trinidad and Tobago Defence Force, the Trinidad and Tobago Forensic Science Centre and the Ministry of Health to facilitate the collection of reference samples from inmates, juvenile offenders, deported citizens and detained non-nationals. Furthermore, we propose the outsourcing of forensic DNA analysis services in accordance with Section 6 of the Administration of Justice (Deoxyribonucleic Acid) Act, 2012, to aid with the population of the NFDD, and the commencement of the ISO 9001:2015 (Quality Management Systems - Requirements) certification process.

As we close the chapter on 2023, I wish to thank the NFDD Custodian Unit staff for their resilience and diligence over the last year. I also extend my deepest gratitude to the medical teams at the Trinidad and

Tobago Police Service and the Trinidad and Tobago Defence Force who continue to be the driving forces behind the Buccal Swab Sample Collection Exercise.

With the NFDD Custodian Unit team's renewed focus on databank expansion and international certification, we are confident that 2024 will be a year of exceptional growth, transformation and impact.



Shamiso Mc Shine

Deputy Custodian Manager

1. Glossary of Terms

Term	Definition
Approved Laboratory	A laboratory accredited by accrediting bodies listed in the First Schedule of the DNA Act which is accountable to the Government of Trinidad and Tobago by entering into an agreement with the Government of Trinidad and Tobago and is approved by the Minister by Notification.
Association	A search result that matches autosomal DNA profiles based on shared alleles and kinship algorithms; it does not reflect a direct identity match between profiles but shows a possible familial relation.
Buccal swab	An oral or mouth swab. Buccal cells are found inside the mouth/ lining the cheeks.
Candidate Match Report	A report generated and distributed to laboratories responsible for the matching profiles after database software determines that two or more DNA profiles match or are associated.
Databasing (For the purpose of the NFDD)	The uploading, storing, searching and cross referencing of eligible, accurate (presumed) and complete DNA profiles obtained from DNA analysis of samples (database, case work, reference samples) by a DNA testing laboratory following FBI QAS into CODIS or another database software.
Disclosure Request	An application made by a police officer, a person from whom a sample was taken or his representative, a government agency, an educational institution, the Central Authority (Attorney General) or the Courts of Trinidad & Tobago to have a DNA profile checked against the profiles stored on the NFDD.
DNA	Deoxyribonucleic acid, which is referred to as the "hereditary material" of the cell, is the genetic code that determines all the characteristics of a living thing.
DNA Act	The legislation for the National Forensic DNA Databank System that authorizes the establishment of a national DNA identification index for enumerated categories of records subject to privacy and quality control requirements.
DNA Profile	The genetic constitution of an individual at defined locations (also known as loci) in the DNA. A DNA Profile derived from nuclear DNA typically consists of one or two alleles at several loci (e.g., short tandem repeat loci).

Term	Definition
Elimination Index/Database	A separate database index containing autosomal DNA profiles of persons who could inadvertently introduce their own DNA Profile as cross-contamination to investigated evidence. These persons are listed in the Third Schedule of the DNA Act as well as District Medical Officers (DMOs), Undertakers etc. Elimination Index profiles are automatically searched against other database indices and any resulting match shall be investigated by the Trinidad and Tobago Police Service or the Trinidad and Tobago Forensic Science Centre in order to determine if source of match was due to contamination or otherwise. Evidentiary DNA Profiles may be deleted from the NFDD if investigations conclude that the DNA profile in question was obtained due to inadvertent contamination from an individual included in the Elimination Index.
Expungement	The deletion of an uploaded DNA profile obtained from a reference sample pursuant to Section 26 of the DNA Act or a court order.
Final Match Report	A report generated by the NFDD Custodian Unit detailing all relevant information regarding matching or associating DNA profiles. A Final Match Report is submitted to relevant law enforcement agencies; and individuals or agencies requesting a search of, or disclosure of information from the NFDD.
Forensic Unknown	A biological sample originating from a crime scene or stain and whose source is attributable to a presently unknown individual. These are not reference samples from known individuals such as volunteers, suspects, offenders, etc.
File Transfer Protocol (FTP)	A standard network protocol used for the transfer of computer files between a client and server on a computer network.
Investigation Aided	A metric that tracks the number of criminal investigations where NFDD has added value to the investigative process.
Law Enforcement Agency	An agency or institution of the government which performs as part of its principal function, activities relating to the apprehension, investigation, incarceration of criminal offenders.
Match	A match occurs when database software links two or more DNA profiles and a confirmation process is started by laboratory personnel.
NFDD Participating Laboratory	A Forensic DNA Laboratory contracted by the Government of Trinidad and Tobago and approved by the Minister of National Security by Notification to submit DNA profiles for NFDD inclusion.

Term	Definition
Offender	This term is intended to include persons under suspicion such as accused, suspects, convicted offenders, detainees; as well as deportees, prisoners, juveniles and foreign nationals who breach <i>Immigration Act</i> .
Reference Sample	Biological material (e.g. buccal swab or sample of intravenous blood) taken from a verified individual.
Search Request	An application made by the Commissioner of Police, an investigating officer or the Central Authority (Attorney General) to have a DNA profile checked against the profiles stored on the NFDD.

2. Introduction

The Custodian Unit was officially established in January 2017 pursuant to **Cabinet Minute No. 1752-2014/06/18**. This Unit, currently under the supervision of the Deputy Custodian, manages and operates the National Forensic DNA Databank (NFDD) of Trinidad and Tobago.

The NFDD is a repository of electronic DNA profiles obtained from crime scenes and individuals mentioned in the *Administration of Justice Deoxyribonucleic Acid (DNA) Act, Chapter 5:34* hereinafter referred to as the DNA Act. These profiles are searched and compared to obtain matches and familial associations. The Custodian Unit aims to provide an uncompromised, secured and confidential DNA databank operating at international standards in order to increase the crime detection rate, decrease wrongful convictions, solve cold cases, identify missing or unidentified persons (providing family members with closure) and deter criminal activity.

The NFDD Custodian Unit operates according to the DNA legislation of Trinidad and Tobago and a Quality Management System enabling the NFDD to become a critical investigative resource for law enforcement. The use of DNA by the judicial system has become increasingly important in solving crimes and continues to be one of the most relied upon forms of evidence used by the court of justice to support their decisions.

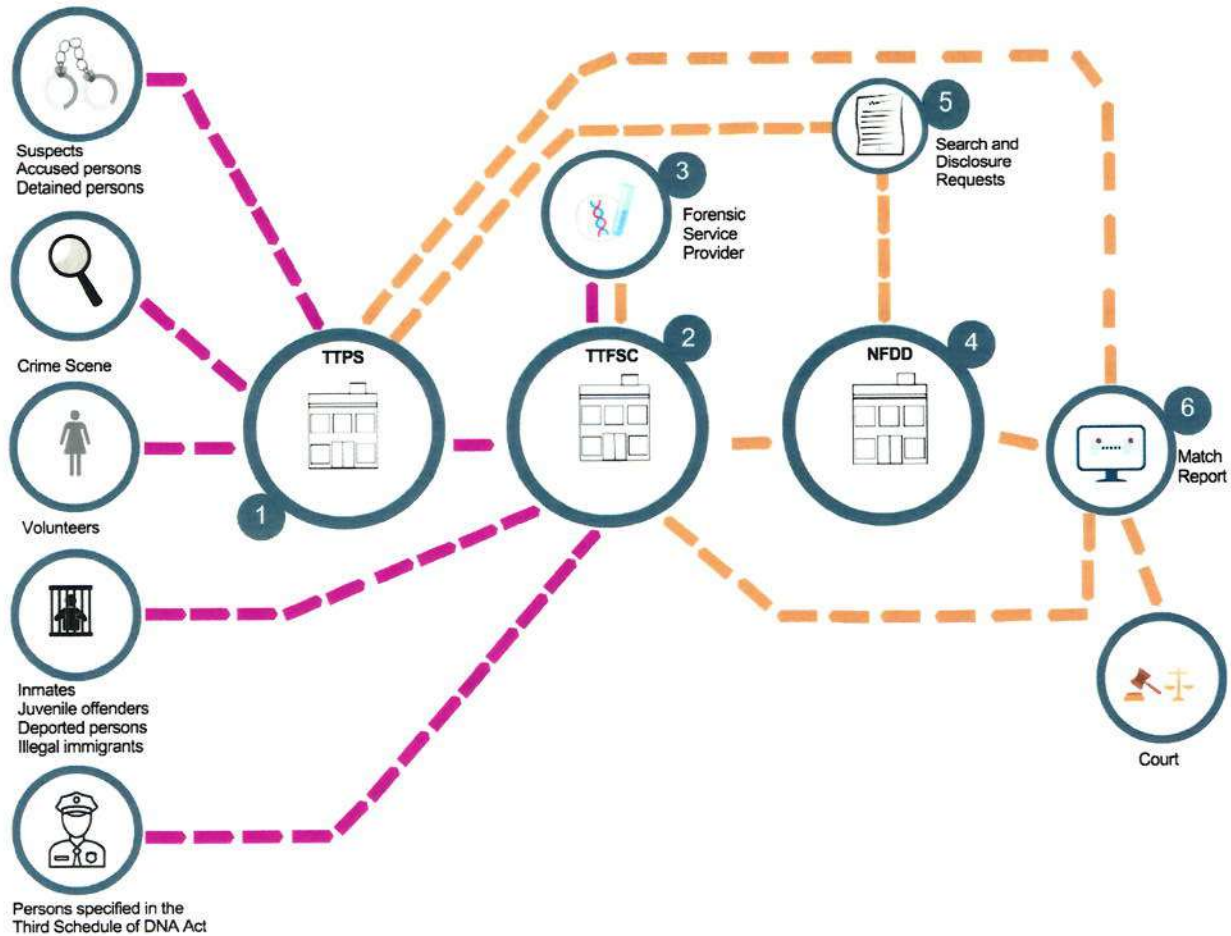
The NFDD is an investigation tool for law enforcement, utilized to:

- i. determine potential perpetrators and suspects of unsolved crimes;
- ii. ascertain the source of crime related biological stains/materials; and
- iii. link crime scenes to other crime scenes

As illustrated in Diagram 1 below, these functions are effected once DNA profiles generated from collected crime scene evidence and specific individuals are entered onto the NFDD and cross-referenced amongst each other in order to find matches, familial associations and contamination.

The NFDD of Trinidad and Tobago uses the DNA Profile Matching System database software known as **SmallPond™**.

THE NFDD PROCESS – Diagram 1



KEY

- █ DNA Samples
- █ DNA data

1 POLICE STATION

Crime scene samples, along with reference samples collected by officers of the Trinidad and Tobago Police Service (TTPS) are transported to the Trinidad and Tobago Forensic Science Centre (TTFSC).

2 TRINIDAD & TOBAGO FORENSIC SCIENCE CENTRE

Reference and crime scene samples are analysed for DNA and the generated profiles are submitted to the National Forensic DNA Databank (NFDD) for loading.

3 FORENSIC SERVICE PROVIDERS (FSP)

In accordance with Section 6 of the DNA Act, forensic DNA services can be provided by an ISO/IEC 17025 accredited laboratory. DNA profiles generated by FSPs are submitted to the TTFSC, which are then submitted to the NFDD.

4 NATIONAL FORENSIC DNA DATABANK

DNA profiles that are submitted to the NFDD are reviewed to determine their eligibility for upload. Once added to the database, each profile is automatically compared against all other profiles stored.

5 SEARCH & DISCLOSURE REQUESTS

In accordance with Section 29 (1) of the DNA Act, Regulation 15 (2) and (3) and Regulation 28 (2) of the DNA Regulations, 2018, the Commissioner of Police or an investigating officer can make Search and Disclosure requests to the NFDD.

6 MATCH REPORTS

When a database match is generated, a candidate match report is created and securely transmitted to the TTFSC. The TTFSC then verifies that the match is legitimate, and once confirmed, a final match report is prepared and issued to the investigating officer(s).

3. Organisational Structure of the Custodian Unit

By Minute No. 1752 dated June 18, 2014 a Custodian Unit was established to oversee, manage and maintain the NFDD.

The organisational structure of the Unit comprises one (1) Custodian Manager, one (1) Deputy Custodian Manager, one (1) Database Specialist, one (1) Databank Analyst, one (1) Information and Communication Technology (ICT) Support Officer, four (4) Business Operations Assistants (BOAs), one (1) driver and one (1) hospitality attendant. However as identified in the chart below, only four (4) of these positions were filled in 2023.

At present, the Deputy Custodian Manager performs the duties of the Custodian Manager as prescribed in Section 8 (2) of the DNA Act and Information and Communication Technology (ICT) Support is provided on an as-needed basis by the Cyber Security and Incident Response Team and the ICT Unit of the Ministry of National Security.

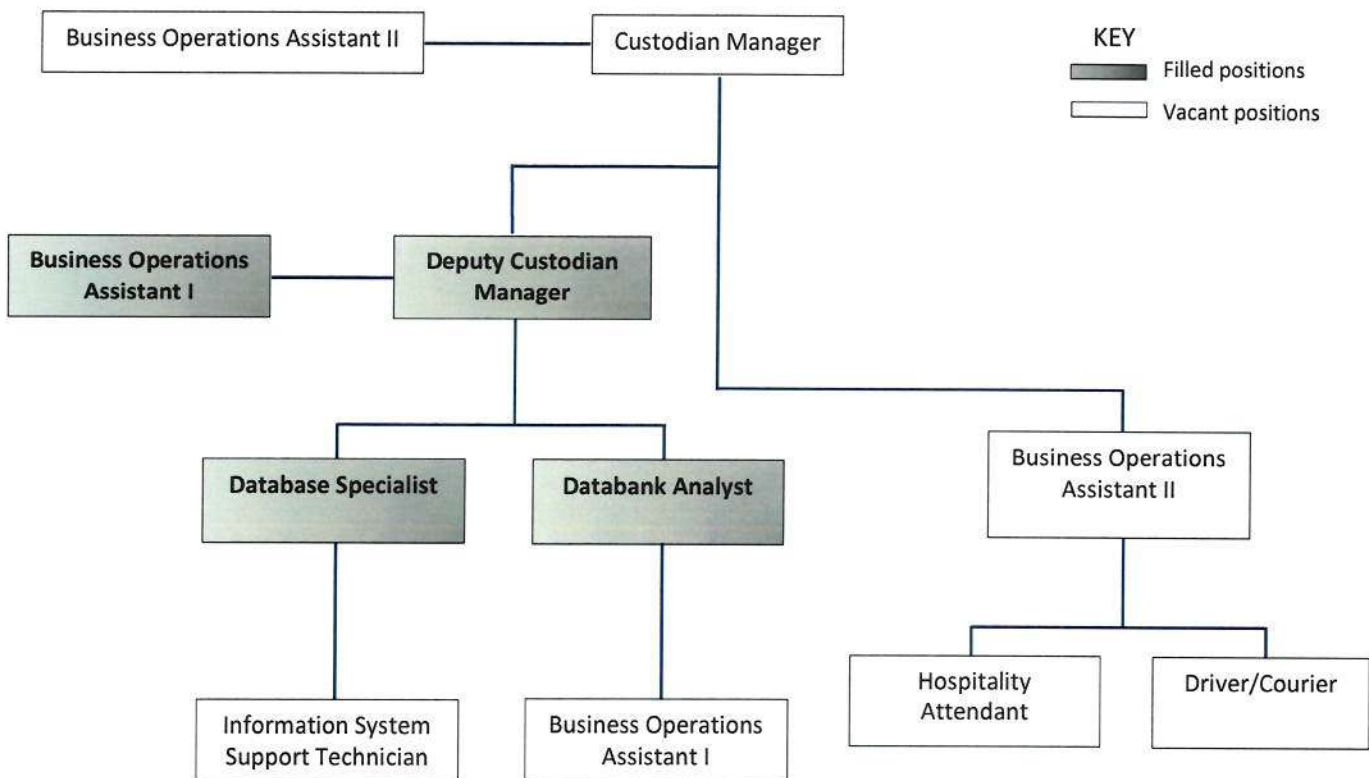


Diagram 2: Custodian Unit Organizational Chart

4. Location of Custodian Unit

The NFDD Custodian Unit is located at:

Level 4 - ABMA Investments
55-57 St. Vincent Street
Port of Spain, Trinidad and Tobago

5. Legislative Parameters

Sections 7 and 8 of the DNA Act provides for the establishment of a DNA databank and the appointment of a Custodian. Section 34 (1) of the DNA Act, provides that DNA Regulations must be created by the Minister in order to give effect to this Act.

All standards and procedures of the Custodian Unit are therefore in compliance with the Administration of Justice (Deoxyribonucleic Acid) Regulations, 2018 (DNA Regulations) and the DNA Act.

The current DNA Regulations authorized under **Legal Notice No. 81** detailed in **Legal Supplement Part B - Vol. 57, No. 74, 7th June, 2018** allow for:

- commencement of Custodian Unit operations;
- commencement of buccal swab sampling of specific persons mentioned in the DNA Act by Police Officers and Medical Practitioners;
- adherence to internationally accepted Storage and Transportation Guidelines for physical evidence collection by authorised persons; and
- development and adherence to minimum standards for entry onto and removal of DNA data from the NFDD.

6. Functions of the Custodian Unit

The Custodian Unit is a stand-alone facility and is required to act **independently**. The Custodian Unit performs the following comparisons to assist the Trinidad and Tobago Police Service (TTPS) with their investigations:

- DNA profiles developed from crime scene material (forensic unknowns or stains) are compared against DNA profiles from other crime scenes to identify potential links between different investigations. "**Forensic-to-Forensic Match** (or stain-to-stain)" is the term used to indicate a DNA match between these profiles.
- DNA profiles developed from crime scene material (forensic unknowns or stains) are compared against DNA profiles from accused, suspects, arrestees, detainees, convicted offenders, identified deceased victims, suspected missing persons, unidentified human remains and individuals mentioned in the Third (3rd) Schedule (of the DNA Act) to link a subject with a particular crime. "**Forensic-to-Person Match** (or stain-to-person)" is the term used to indicate a DNA match between these profiles.
- DNA profiles developed from unidentified human remains are compared against DNA profiles from family members of suspected missing persons to determine whether there is a **familial association** between these DNA profiles.

In accordance with Section 8 of the DNA Act, the DNA profiles uploaded and stored on the NFDD are provided by the Trinidad and Tobago Forensic Science Centre (TTFSC) and laboratories that have been approved by the Minister by Notification. Both the TTFSC and all approved laboratories must agree to the NFDD's Technical Requirements before becoming an "NFDD Participating Laboratory".

DNA profiles contain sensitive, confidential information and must be retained indefinitely on the NFDD except when profiles qualify for: (i) expunction in accordance with Section 26 of DNA Act and (ii) data deletion as stipulated by Section 9.2 of the NFDD Minimum Standards of Operations. Each DNA profile entered into the NFDD includes a unique identifier (i.e. Specimen ID#) and is securely submitted to the

Custodian Unit by or on behalf of NFDD Participating Laboratories using data transfer methods such as, but not limited to, a secured File Transfer Protocol (FTP) on an ICT network.

DNA Profiles:

- i. in relation to the investigation or prosecution of offenses committed before, on or after the coming into operation of the DNA Act ;
- ii. generated from NFDD Participating Laboratories; and
- iii. obtained from the individuals (itemised under separate database indices) and sources outlined in Table 1;

are eligible for NFDD inclusion.

NFDD Database Index	Autosomal DNA Profiles	Y-STR DNA Profiles
Crime Scene Material – Forensic Unknown/ Stain	Scene of Crime Evidence (i.e. blood, semen, etc.)	Scene of Crime Evidence (i.e. blood, semen, etc.)
Offender – Person Under Suspicion	<ul style="list-style-type: none"> - Accused/Defendant - Suspects - Detainees/ Arrestees - Convicted Offenders - Prisoners - Deportees - Juveniles - Foreign Nationals who breach <i>Immigration Act</i> 	
Victims	<ul style="list-style-type: none"> - Identified deceased - Direct Comparative Evidence allegedly taken from missing persons (e.g. toothbrush etc.) 	<ul style="list-style-type: none"> - Identified deceased - Direct Comparative Evidence allegedly taken from missing persons (e.g. toothbrush etc.)
Family Members	<ul style="list-style-type: none"> - Biological Mother/Father - Biological Offspring - Sibling/ Half-Sibling - Maternal and Paternal Relative 	<ul style="list-style-type: none"> - Biological Father - Biological Offspring - Sibling/ Half-Sibling - Paternal Relative
Unidentified Human Remains	- Unidentified Deceased	- Unidentified Deceased

NFDD Database Index	Autosomal DNA Profiles	Y-STR DNA Profiles
Elimination	<ul style="list-style-type: none"> - Officers of the Protective Services (DNA Act Third Schedule) - Members of the Municipal Police Service - Members of the Special Reserve Police - Members of the Defence Force - Customs Officers - Immigration Officers - TTFSC DNA and Serology Laboratory Staff - Supporting Agency Members (i.e. person who attend crime scenes such as District Medical Officers, Undertakers) 	

Table 1: Sources and individuals whose DNA profiles are eligible for NFDD inclusion

The NFDD can only be used for law enforcement purposes and DNA profiles must be used for the purpose for which they were collected. The NFDD **does not prove guilt or innocence** and all DNA profile matches and associations must be confirmed by NFDD Participating Laboratories before a final match report is engendered and submitted to authorised personnel.

7. Privacy of Information

The NFDD does not store personal identifiable information on individuals such as name, age, address or date of birth and all uploaded DNA profiles are anonymous. This anonymity protects the privacy of individuals allowing for the impartial analysis of matches and associations. Additionally, a balance between privacy rights (i.e. enforcement of the *Data Protection Act, 2011*) and the need for law enforcement (i.e. enforcement of the DNA Act) must be made. This balance speaks to the state's ability to identify suspects and retain 'personal information' on individuals for a specific length of time. According to Section 2 of the *Data Protection Act, 2011*, "personal information" means information about an identifiable individual that is recorded in any form including DNA. Therefore this balance, among other things, will allow:

- i. individuals, whose data is stored on the NFDD, access to their information via an official disclosure request (*Section 29 (1) (b), DNA Act*);
- ii. the expunction of DNA data after a given period of time or under specific circumstances (*Section 26 (10) and (11), DNA Act*);
- iii. DNA profiles to be used strictly for the purpose they were generated.

Stringent operational procedures governing the submission, storage, access, security and use of DNA profiles will ensure that the privacy rights of individuals are protected. The NFDD can only be used for law enforcement purposes and the Custodian Unit does not share the NFDD data with anyone other than authorised agencies and persons listed in Section **29 (1)** of the DNA Act; and Regulations **15(2)** and **28** of the DNA Regulations.

8. Data Security and Quality Management System

The Custodian Unit is responsible for **data security, availability and integrity**. Data security is enabled through the implementation and maintenance of a framework that includes 24-hour armed security, Biometric Door Access Control, data servers, firewalls, encrypted storage devices, data centers with Netbotz monitoring, CCTV monitoring and the **SmallPond™** DNA Profile Matching System. Data Security is also enabled due to the isolated nature of the Custodian Unit. The NFDD operates on its own ICT network and incoming electronic data is transferred using an encrypted process. Continuous operability of the Information Systems (IS) is monitored by the Database Specialist and compiled in quarterly and annual IS reports.

Additionally, data security, availability and integrity is regulated by the **NFDD Quality Management System (QMS)** which includes but not limited to the Quality Assurance Manual, the Health and Safety Manual, Standard Operating Procedures, the Risk Management program, Information Systems (IS) Control Policy and the NFDD Custodian Unit Minimum Standards of Operations.

According to **DNA Regulation 4(1)**, the Custodian shall, from time to time, set the Minimum Standards, in accordance with international best practices, for entry onto and removal of data from the Databank, which shall be published in the Gazette. These Minimum Standards of NFDD Operations were approved by the **Trinidad and Tobago Bureau of Standards (TTBS)** in **September 2019**, which according to the Standards Act 1997, is the national standards body, the national quality certifying body and the national laboratory accrediting body. Subsequently, the minimum standards were published in **Gazette No. 93 of 2020 (June)**.

Strict adherence to the QMS ensures compliance with DNA Legislation and international best practice resulting in secured, confidential and accurately loaded data. Data integrity is also maintained as NFDD Participating Laboratories that submit DNA profiles for databank loading are subject to quality assurance assessments.

Direct access to DNA profiles stored on the NFDD is limited to Custodian Management and authorised members of staff. The TTPS, personnel from the Ministry of Attorney General and Legal Affairs (AGLA) and the Judiciary may submit to Custodian Management, a request for an official search or disclosure of NFDD information.

9. Populating the Databank

The efficiency of a forensic DNA databank is dependent on its **size** and the **maintenance of quality**¹. Generally, as a database expands, its efficiency increases, however, if the uploaded profiles (input data) are not accurate, then the databases matches (output data) are of little value¹.

DNA databases that are populated with large quantities of high quality DNA profiles generated from **arrestee samples** and **crime scene samples**, are more likely to generate matches that link crime scenes, identify serial offenders and aid investigators in the analysis of crime patterns¹.

As illustrated in Table 2 below, the NFDD has a small population of six hundred and seven (607) profiles, most of which were generated from **victims**. These profiles were submitted by the Trinidad and Tobago Forensic Science Centre.

NFDD Database Index	No. of Profiles
Crime Scene Material – Forensic Unknown/ Stain	107
Offenders/Suspects/Accused/Detained persons	185
Victims	283
Family Members (including Volunteers)	18
Unidentified Human Remains	14
Elimination (for persons listed in the Third Schedule of DNA Act)	0
TOTAL	607

Table 2: Number of database entries per database index

To improve the NFDD's efficiency, more crime scene profiles and arrestee profiles (offenders, suspects, accused and detained persons) need to be uploaded onto the database, as these profiles currently account for 18% and 30% respectively of the profiles currently uploaded (see Diagram 3).

¹ J. Butler, *Advanced Topics in Forensic DNA Typing: Methodology*, Elsevier, London, 2012.

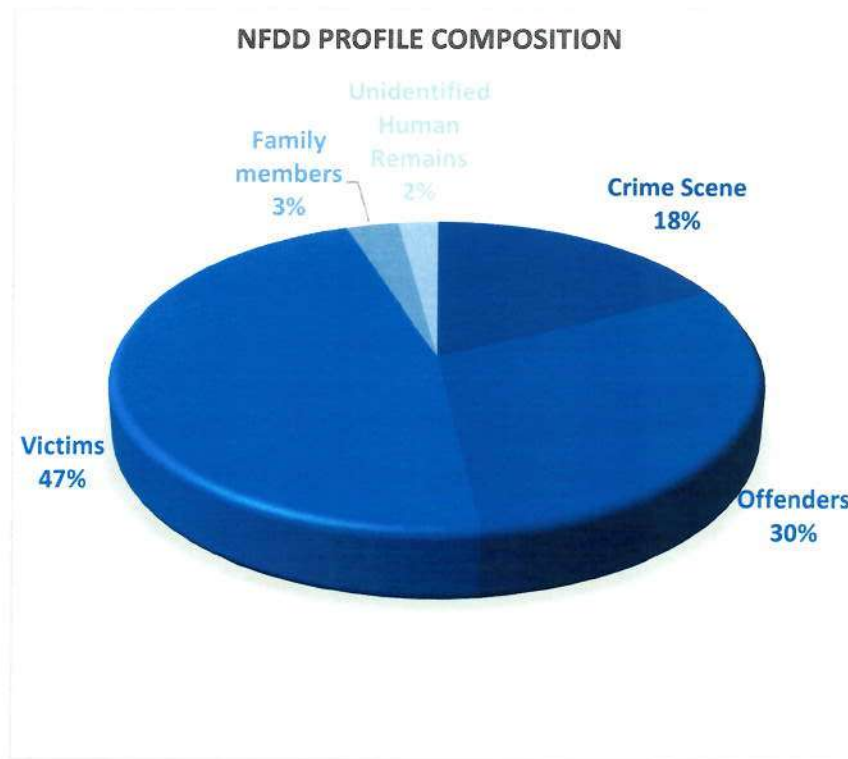


Diagram 3: Current size of each database index

As prescribed in Section 8 of the DNA Act and demonstrated in Diagram 1 (page 8), the NFDD can be populated with DNA profiles generated by the **Trinidad and Tobago Forensic Science Centre** and/or an approved **Forensic Service Provider**.

The Trinidad and Tobago Forensic Science Centre (TTFSC)

The TTFSC has not submitted any DNA profiles to the Custodian Unit for upload onto the NFDD during the period January 2023 to December 2023.

It should be noted that in accordance with Regulation 3, 4 and 5 of the Administration of Justice (Deoxyribonucleic Acid) Regulations, 2018, in order for the NFDD Custodian Unit to accept and upload DNA profiles onto the NFDD, the TTFSC must satisfy the following requirements:

- i. Have protocols and procedures which are specific to DNA analysis which demonstrate that the TTFSC is competent and able to produce DNA profiles that are compatible with those on the NFDD, has adopted internal handling processes and procedures that conform to the rules of continuity and

preservation of evidence, and is carrying out an internal quality assurance program in accordance with identified specifications;

- ii. Meet minimum FBI Quality Assurance Standards (QAS) for DNA testing and databasing laboratories or similar internationally accepted quality assurance standards, and provide a statement of compliance to the NFDD Custodian Unit upon request. Request shall be made once every two (2) years for Approved Laboratories;
- iii. Provide a copy of the External Quality Assurance Standard (QAS) Audit documentation for review including the audit report, clarifications, responses and corrective action plans to NFDD Custodian Unit within twenty (20) to thirty (30) working days of a request from the NFDD Custodian Unit. This request will be made once every two (2) years and the NFDD Custodian Unit shall document review using NFDD External Quality Assurance Standard (QAS) Audit Document Review Record;
- iv. Adhere to the Scientific Working Group on DNA Analysis Methods (SWGDM) Recommendations and Interpretation Guidelines; or similar internationally accepted recommendations and guidelines, and provide a statement of compliance to the NFDD Custodian Unit upon request. Request shall be made once every two (2) years for Approved Laboratories;
- v. Accept annual on-site visits by NFDD Custodian Unit management for inspection of DNA analysis facilities to verify facilities have ability to perform the requisite services; and
- vi. Enable a secured communication channel with the NFDD Custodian Unit to exchange documentation, alert Custodian Unit when DNA profiles have been submitted for upload, provide notifications and any other information pertaining to the DNA analysis of the samples.

For the reporting period, the TTFSC did not meet all the requirements above.

10. Buccal Swab Sample Collection

The Buccal Swab Sample Collection exercise, which is one of the Unit's major strategies for growing the DNA databank, continued in 2023. For the period under review, a total of one thousand four hundred and three (1 403) reference samples were collected from officers of the Trinidad and Tobago Police Service, officers of the Trinidad and Tobago Fire Service, members of the Defence Force and an employee at the Trinidad and Tobago Forensic Science Centre. This was significantly less than the number of reference samples collected in 2012, (8 976), however, many factors including the availability of kits and the availability of collectors may have contributed to this decline.

The following table details the number of persons sampled from each agency for 2023:

MONTH	NUMBER OF BUCCAL SWABS COLLECTED			
	Trinidad & Tobago Police Service	Trinidad & Tobago Defence Force	Trinidad & Tobago Fire Service	Forensic Science Centre
January	1	15	-	-
February	15	-	-	-
March	80	-	33	-
April	360	-	126	-
May	8	19	-	-
June	162	197	70	1
July	109	82	-	-
August	37	25	-	-
September	14	4	-	-
October	8	6	-	-
November	-	14	-	-
December	-	17	-	-
TOTAL	794	379	229	1
	1403			

Table 3: Buccal Swabs Collected from Persons Specified in the Third Schedule of the DNA Act for 2023

Collected samples will be analyzed by an approved laboratory and the DNA profiles submitted to the NFDD Custodian Unit pursuant to Section 8 (1) of the DNA Act. Suitable profiles will be uploaded to the **Elimination Index** of the NFDD thereby increasing the database's population.

Sample collection will continue for persons listed in the Third Schedule, however the collection of buccal swabs from the prison population (inmates) will be prioritized in 2024 as these DNA profiles hold the greatest evidential value¹ and would likely lead to more probative database matches.

11. NFDD Performance and Statistics

Performance of the NFDD is measured in terms of **matches**, **associations** and **investigations aided**. The definition of these terms are as follows:

Match	A match occurs when database software links two or more DNA profiles and a confirmation process is started by laboratory personnel.
Association	A search result that matches DNA profiles based on shared alleles and kinship algorithms; it does not reflect a direct identity match between profiles but shows possible familial relation.
Investigation Aided	The total number of matches and associations that have added value to the police’s investigative process.

Annual Match Data (2023)

For 2023 there were zero (0) NFDD entries and therefore zero (0) matches were observed.

Investigations Aided (2023)

Zero (0) investigations were aided.

Cumulative Match Data (2019-2023)

Of the **607** DNA profiles uploaded onto the National Forensic DNA Databank, there has been:

- thirteen (**13**) forensic-to-forensic matches (i.e. scene of crime to **scene of crime**)
- seven (**7**) forensic-to-victim matches (i.e. scene of crime to identified deceased **victims**)
- ten (**10**) forensic-to-offender matches (i.e. scene of crime to suspects or accused **offenders**)

Investigations Aided (2019-2023)

One (1) investigation was aided resulting from one (1) final match.

Based on the number of observed matches, the efficiency of the NFDD can be calculated. It must be noted that matches are based on many factors not constrained to the NFDD and its capabilities. These factors include investigation techniques of law enforcement, quality of evidence submitted to testing laboratories, analytical methods of testing laboratories and quality of data originating from testing laboratories. Notwithstanding these factors, **NFDD Efficiency** is assessed on the following parameters:

- Number of 'stain-to-person' matches relative to number of persons in a database index
- Number of 'stain-to-stain' matches relative to number of forensic unknowns (stains)
- Number of 'stain-to-person' matches relative to number of forensic unknowns (stains)

Therefore for the seven (7) **forensic-to-victim matches**, NFDD efficiency relative to the number of **victims** is calculated as:

$$7/283 \times 100 = 2.47\%$$

For the ten (10) **forensic-to-offender matches**, NFDD efficiency relative to the number of **offenders** is calculated as:

$$10/185 \times 100 = 5.41\%$$

For the thirteen (13) **forensic-to-forensic matches**, NFDD efficiency relative to the number of **forensic unknown** samples or scene of crime samples is calculated as:

$$13/107 \times 100 = 12.15\%$$

For the seven (7) **forensic-to-victim matches**, NFDD efficiency relative to the number of **forensic unknown** samples or scene of crime samples is calculated as:

$$7/107 \times 100 = 6.54\%$$

For the ten (10) **forensic-to-offender matches**, NFDD efficiency relative to the number of **forensic unknown** samples or scene of crime samples is calculated as:

$$10/107 \times 100 = 9.35\%$$

To date, zero (0) familial associations have been detected; and zero (0) search or disclosure requests have been made by the TTPS/authorized agencies. Therefore **no statistics are available** to indicate the number of:

- search and disclosure requests
- familial associations
- familial searches
- elimination database matches
- 'forensic-human remains' matches (i.e. scene of crime to unidentified deceased victims)

Additionally, no modifications (suspensions, amendments, deletions, reinstatements, transfers or expungements) were made to NFDD entries in 2023.

12. Accomplishments and Challenges

Below are the activities, achievements, outcomes, challenges and remarks related to NFDD operations:

▪ Organizational Structure of NFDD Custodian Unit

Task/ Activity	Achievements and Outcomes	Risks or Comments
Contract renewal of the Deputy Custodian Manager	<ul style="list-style-type: none"> The Deputy Custodian Manager's contract was renewed on September 20, 2023 for one (1) year. 	
Hiring of a : <ul style="list-style-type: none"> - Custodian Manager - Business Operations Assistant (BOA) I - Driver - Hospitality Attendant 	<ul style="list-style-type: none"> Efforts continue to be made to fill all vacant posts. 	<ul style="list-style-type: none"> Custodian Manager's position has been vacant since July 2020. BOA I's position has been vacant since July 2023. Driver and Hospitality Attendant are provided by General Administration upon request.

▪ Training and Development of NFDD Custodian Unit Staff

Task/ Activity	Achievements and Outcomes	Risks or Comments
"Leading with Emotional Intelligence" hosted by the Ministry of National Security	<ul style="list-style-type: none"> Held on April 24, 26 and May 2 - 3, 2023 at the Courtyard, Temple Court I and attended by the Database Specialist. 	<ul style="list-style-type: none"> Areas of focus included "Developing Self Awareness", "Self Control Techniques", "Empathy", "Transparency" and "Enhancing E.I".
NFDDCU's ICT Acceptable Use Standards Training and Refresher Session facilitated by the Database Specialist	<ul style="list-style-type: none"> Held on September 27, 2023 at the NFDDCU and attended by the Deputy Custodian Manager and Databank Analyst. 	<ul style="list-style-type: none"> Session entailed the roles and responsibilities of employees, the importance of passwords and password lengths, and cyber security concerns and controls.
Databank Analyst's Annual Competency Test issued by the Deputy Custodian Manager	<ul style="list-style-type: none"> Satisfactorily completed by the Databank Analyst on December 01, 2023. 	<ul style="list-style-type: none"> Competency test included a written and practical component, along with an Expert Witness Court Room Assessment.

▪ **NFDD Budget and Finance Management**

Task/ Activity	Achievements and Outcomes		Risks or Comments
	Allocation (TTD)	Expenditure (TTD)	
Budget and Expenditure (NFDDCU Vote)	\$150 000.00	\$133 750.54	<p>Completed purchases for 2023 included:</p> <ul style="list-style-type: none"> ▪ Annual renewal of SmallPond™ Software License. ▪ C&W (FLOW) Dedicated internet (5 mbps) and Broadband internet (75 mbps) services. ▪ Single servicing of the NFDDCU’s high security access control system. ▪ Payment of T&TEC bills.

▪ **NFDD Custodian Unit Establishment**

Task/ Activity	Achievements and Outcomes	Risks or Comments
Establishment of NFDDCU at ABMA building (PSIP)	<ul style="list-style-type: none"> ▪ A CCTV Monitoring System, two (2) Secure Server Racks and a SFTP Server License were purchased. 	<ul style="list-style-type: none"> ▪ With the exception of the Fire Suppression System, all other items under the establishment of the NFDD have been procured. ▪ A Fire Suppression System cannot be installed unless the building that houses the NFDDCU becomes fire certified.

▪ **NFDD Quality Management System**

Task/ Activity	Achievements and Outcomes	Risks or Comments
<p>NFDD Quality Management System</p>	<ul style="list-style-type: none"> ▪ NFDD Risk Assessment Report (ICT) - In January 2023 a risk assessment of the NFDD CU operations was conducted where security risks were identified, the impact of the risk materialising was measured and an action plan for the mitigation of these risks outlined. The assessment revealed that majority of the potential threats at the Unit are low. ▪ NFDD Internal Audit - In December 2023 the annual NFDD Internal Audit was performed and completed satisfactorily. This audit showed that the NFDD Custodian Unit operations are in alignment with international best practices. ▪ HSE Audit and Risk Assessment - Health & Safety Manual and Risk Assessment document was reviewed and revised in December 2023. Additionally, the annual Health & Safety audit was satisfactorily completed. 	<ul style="list-style-type: none"> ▪ NFDD Quality Management System is dynamic and revised annually therefore amendments are expected as new equipment and software are acquired. ▪ Discussions are in train with the Trinidad and Tobago Bureau of Standards to commence ISO 9001:2015 certification of the NFDD. ▪ For the period under review, there was one (1) reported “near miss”.

▪ **Databank Population and Forensic Service Providers participation in the DNA Databank**

Task/ Activity	Achievements and Outcomes	Risks or Comments
Population of the NFDD	<ul style="list-style-type: none"> As of December 2023 the NFDD is populated with six-hundred and seven (607) DNA profiles and has had one (1) reported hit/final match. Therefore one (1) TTPS investigation was aided. 	
Receipt of DNA profiles from the Trinidad and Tobago Forensic Science Centre (TTFSC)	<ul style="list-style-type: none"> No DNA profiles received/uploaded during the period January 2023 to December 2023. 	<ul style="list-style-type: none"> International best practice stipulates that DNA data uploaded to a Forensic DNA Database must originate from ISO 17025 accredited agencies. TTFSC is not yet ISO 17025 accredited. However, as a quality assurance measure, Technical Requirements for the Participation in the NFDD were drafted and agreed upon by both parties in April 2019. These requirements were issued in accordance with Regulation 4 (1) of the Administration of Justice (Deoxyribonucleic Acid) Regulations, 2018 and approved by the Trinidad and Tobago Bureau of Standards. The NFDD CU has requested quality assurance documentation and the authorisation to conduct an on-site visit in accordance with Regulation 3 (2) of the Administration of Justice (Deoxyribonucleic Acid) Regulations, 2018. The NFDD CU is awaiting a response from the TTFSC.
Receipt of DNA profiles from external Forensic Service Providers (FSPs)	<ul style="list-style-type: none"> Ministerial approval of Caribbean Forensic Services Limited (CFSL) for the provision of forensic DNA services to the state. 	<ul style="list-style-type: none"> The NFDD CU recommends that that forensic DNA services be outsourced (pursuant to Section 6 of the DNA Act). The practice of outsourcing has been adopted by DNA databanks all over the world, and will provide the following benefits to Trinidad and Tobago:

Task/ Activity	Achievements and Outcomes	Risks or Comments
		<ul style="list-style-type: none"> - Decreased backlog at the Biology Section (Trinidad and Tobago Forensic Science Centre); - Decreased turnaround time for analysis of bulk samples as many international forensic DNA laboratories are fully automated; - Decreased cost per sample as samples can be analyzed in bulk by fully automated DNA analysis systems. Forensic DNA services at the Trinidad and Tobago Forensic Science Centre are not fully automated. - Decreased chances of human error due to the process being fully automated and conducted in an ISO/IEC 17025 accredited facility; and - Population of the DNA Databank with DNA profiles from an ISO/IEC 17025 accredited laboratory which aligns with international best practice. ▪ A final determination on the procurement of forensic DNA services from local and external providers has not been made.
<p>Preparation of Note for Cabinet, No. NS(22)80 – Proposed Strategies for Populating the National Forensic DNA Databank</p>	<ul style="list-style-type: none"> ▪ Cabinet by Minute No. 959-2022/06/02 agreed to the “Proposed Strategies for Populating the NFDD” 	<ul style="list-style-type: none"> ▪ Some strategies including sensitization and buccal swab sampling of specified individuals have commenced. The next steps include the sampling of prisoners, juvenile offenders, deported citizens and detained non-nationals.

▪ **Buccal Swab Sample Collection Training for DNA Act Stakeholders**

Task/ Activity	Achievements and Outcomes	Risks or Comments
Buccal Swab Sample Collection “train-the-trainer” training sessions for Stakeholders/ agencies mentioned in the DNA Act	<ul style="list-style-type: none"> ▪ Training of stakeholders was completed in August 2022. 	<ul style="list-style-type: none"> ▪ Training for new volunteer collectors will be ongoing, however no training sessions were held in 2023.

▪ **DNA Reference Sample Collection from Protective Service Agency Members listed in Third Schedule of DNA Act; and Persons detained in institutions to which the *Prison Act* applies**

Task/ Activity	Achievements and Outcomes	Risks or Comments
DNA Sample Collection from persons listed in the Third Schedule of the DNA Act	<ul style="list-style-type: none"> ▪ One thousand four hundred and three (1 403) buccal swabs were collected in 2023. 	
DNA Sample Collection from inmates	<ul style="list-style-type: none"> ▪ A supplier was selected and the NFDDCU is awaiting the delivery of an additional fifteen thousand (15 000) kits. 	

13. Conclusion

In 2023, the Custodian Unit successfully procured all outstanding ICT equipment required for the establishment of the NFDD, facilitated the collection of one thousand four hundred and three (1 403) reference samples from persons listed in the Third Schedule and initiated the procurement process for the supply of fifteen thousand (15 000) buccal swab kits.

Despite these achievements, the NFDD remains underpopulated and underutilized, and it is recommended that forensic DNA services be outsourced in accordance with Section 6 of the DNA Act.

Looking ahead, the NFDD Custodian Unit plans to commence ISO 9001: 2015 (Quality Management System - Requirements) certification, commence buccal swab sample collection of prisoners and build the databank with DNA profiles generated by ISO/IEC 17025 accredited laboratories.

End of Report