U. S. Department of Justice
Federal Bureau of Investigation
Science and Technology Branch

Guide to All Things Rapid DNA

Version 1.3

March 1, 2025

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Contents

1. Overview of Rapid DNA

This document explores multiple aspects of Rapid DNA, discusses how the FBI is moving forward with the implementation of Rapid DNA for CODIS, and provides resources for agencies with Rapid DNA implementation questions.

Rapid DNA, or Rapid DNA analysis, is a term used to describe the fully automated process of developing a DNA profile from a reference sample mouth swab in 1-2 hours without the need for a DNA laboratory and without any human interpretation. The overall goal of the Rapid DNA initiative is to immediately enroll qualifying arrestees in CODIS so that every arrestee is searched against all unsolved crimes in CODIS within 24 hours. The FBI also has established the DNA Index of Special Concern (DISC) containing complete crime scene profiles from unsolved homicide, sexual assault, kidnapping and terrorism cases. Using Rapid DNA, DISC profiles can be searched in near real time during the booking process. A match to a DISC profile will result in an immediate notification to the booking agency, arresting agency and investigating agency via the Wants and Warrants network, NLETS. This technology has the potential to dramatically impact law enforcement's ability to generate investigative leads while an arrestee is still in custody, possibly preventing additional crimes and making communities safer.

Reference Sample Rapid DNA at a Glance

Reference Sample	Booking Station	Accredited Laboratory	Law Enforcement Agency
Approved Rapid DNA devices for casework reference sample mouth swabs	NO	YES	NO
Approved for qualifying arrestee mouth swabs for CODIS	YES	YES	NO
National Standards and Procedures for processing qualifying reference sample mouth swabs for CODIS	YES	YES	NO
Best practice guidance for non-CODIS use of Rapid DNA	NO	YES	YES

Rapid DNA is **not** currently approved for use on crime scene samples for enrollment and/or search in CODIS. The FBI and its partners have been addressing several challenges for Rapid DNA devices to be reliably used for crime scene sample analysis for CODIS entry and search. It is important to note Rapid DNA analysis requires a greater amount of DNA per sample than conventional laboratory forensic DNA analysis.

Forensic Evidence Sample Rapid DNA Requirements at a Glance
(Effective July 1, 2025)

The FBI has approved changes to the Quality Assurance Standards (QAS), effective July 1, 2025, which shall **not** be applied retroactively (pre-issuance copies are available at SWGDAM.org). These changes include the addition of two new forensic Rapid DNA Standards. Below are the high-level requirements for a forensic evidence sample processed on a Rapid DNA instrument in a CODIS Laboratory or in partnership with a CODIS Laboratory on or after July 1, 2025, to be eligible for CODIS.

Forensic (Crime Scene Evidence) Sample Rapid DNA Requirements for CODIS
1. The Rapid DNA Instrument location and operation must fall under the ISO 17025 accreditation of a CODIS laboratory
2. The forensic evidence samples must be processed in accordance with the 2025 Forensic Quality Assurance Standards (QAS) on or after July 1, 2025
3. The Rapid DNA cartridge/chip used must be approved by NDIS for forensic sample use
4. The CODIS laboratory has validated modified Rapid DNA analysis for the specific Rapid DNA Instrument cartridge/chip
5. The Rapid DNA generated forensic sample data has undergone interpretation and review by qualified laboratory personnel prior to upload or search in CODIS
6. The forensic evidence meets CODIS eligibility requirements (evidence originating from a crime scene attributed to the putative perpetrator)

Failure to meet all the requirements above when the sample is processed on the Rapid DNA instrument will render that Rapid DNA data ineligible for CODIS. For more details on Forensic Rapid DNA, please see section 3 and for implementation framework for Forensic Rapid DNA Programs, section 3.4.

2. Booking Station Rapid DNA

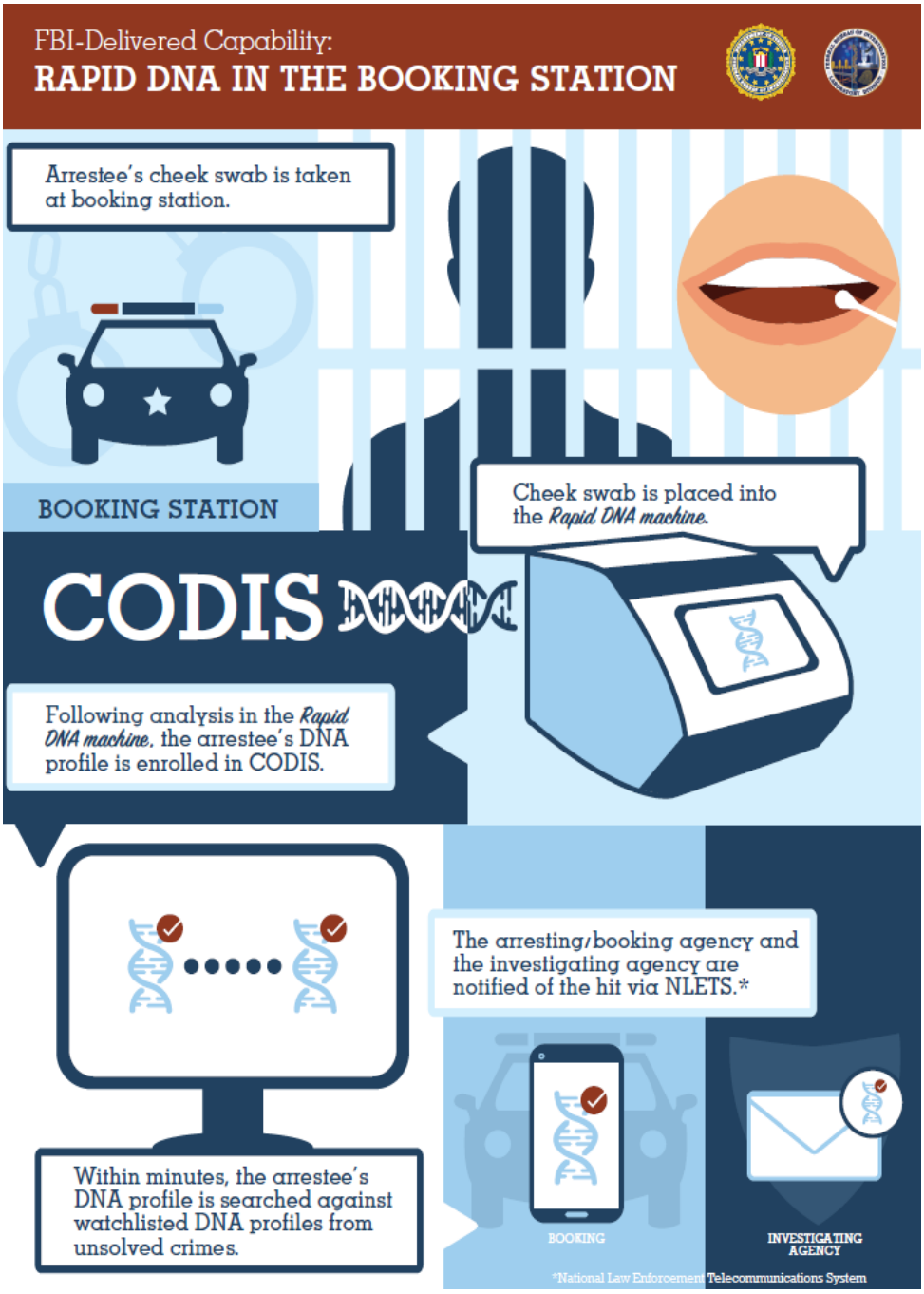

Figure 1: This graphic represents the high-level concept of operation for Rapid DNA in the Booking Station. A qualifying arrestee's mouth swab is taken at arrest and placed into a Rapid DNA device. Following analysis, the arrestee's DNA profile is immediately enrolled into CODIS and searched against a special watchlisted set of DNA profiles from high interest unsolved crimes. A match will result in an immediate notification to the booking agency, arresting agency, and investigating agency via the Wants and Warrants network, NLETS.

The Rapid DNA Act of 2017 (Public Law 115-50) became Federal law on August 18, 2017. The Act authorizes the FBI Director to "issue standards and procedures for the use of Rapid DNA instruments and resulting DNA analyses." The FBI Laboratory Division worked with the FBI Criminal Justice Information Services (CJIS) Division and the CJIS Advisory Policy Board (CJIS APB) Rapid DNA Task Force to plan for the effective integration of Rapid DNA into the booking station process. The FBI also worked with their DNA advisory body, the Scientific Working Group for DNA Analysis Methods (SWGDAM) and other stakeholders to develop *Standards for the Operation of Rapid DNA Booking Systems by Law Enforcement Booking Agencies*, the corresponding *Audit Document* for these standards, and the *National Rapid DNA Booking Operational Procedures Manual* for the FBI approval and operation of the Rapid DNA devices in booking agencies for immediate CODIS enrollment.

The FBI recognizes that National DNA Index System (NDIS) approval of Rapid DNA Booking Devices and the training of law enforcement personnel in the proper use of the approved devices are integral to ensuring that Rapid DNA is used in a manner that maintains the quality, integrity and public trust of our National DNA Database to combat crime. It is important to note that Rapid DNA Booking Systems are configured with safeguards specifically for the booking station application of Rapid DNA analysis and are unable to process non-Booking System Rapid DNA cartridge/chips.

2.1. Booking Station Integration Planning

The State CODIS Agency is the primary agency responsible for the implementation of Rapid DNA in the booking environment for a state. It is critical for booking agencies to work with their State CODIS Agency to ensure all requirements are met when implementing Rapid DNA in the booking environment. A great initial resource for states considering the implementation of Rapid DNA in the booking station can be found here. Information Technology (IT) enhancements, including automated fingerprint capture (Live Scan) and criminal history information integration, are required for booking station submissions of arrestee DNA profiles to CODIS.

Below is an abbreviated list of requirements that must be met in order for federal, state, and local booking agencies to be approved to utilize Rapid DNA (for a complete list see *National Rapid DNA Booking Operational Procedures Manual)*:

- The state must have implemented an arrestee DNA sample collection law that authorizes DNA sample collection at the time of arrest with no additional requirements (i.e., a determination of probable cause prior to arrest). Federal booking agencies already meet this prerequisite.
- The state/booking agency must integrate Electronic Fingerprint (Live Scan) capture during the booking process for obtaining State Identification Numbers (SID) (UCN for federal booking agencies) from the State Identification Bureaus (FBI for federal) in near real time.
- The booking agency must have network connectivity with the State Identification Bureau (SIB)/CJIS Systems Agency (CSA).
- The booking agency and/or state must integrate Rapid DNA within their automated fingerprint process in a way that ensures only qualifying arrestees are processed.

Links to important documents for the implementation of Rapid DNA at the booking station:

- *Considerations for States Implementing Booking Station Rapid DNA*
- *National Rapid DNA Booking Operational Procedures Manual*
- *Standards for the Operation of Rapid DNA Booking Systems by Law Enforcement Booking Agencies*
- *CODIS Arrestee Enrollment Format*
- *CODIS Rapid Import Format*
- *Original Rapid DNA Booking Station Requirements*

2.2. Approved Booking Station Devices

Rapid DNA Booking Device(s) approved for use at NDIS by a law enforcement booking station:

- **ANDE 6C Series G** v1.0, v1.01
- **RapidHIT™ ID DNA Booking System** v1.0, v1.1, v1.1.2

For the most up-to-date list of approved devices, please see the FBI's main Rapid DNA website here.

*It is important to note that NDIS approval of a Rapid DNA Booking Device **does not include approvals demonstrating compliance with the CJIS Security Policy required by state and local IT networks**. Such approvals shall be obtained before implementation of an NDIS approved Rapid DNA Booking Device in a law enforcement booking agency.*

2.3. Benefits of Booking Station Rapid DNA

Integration of Rapid DNA at the booking station for qualifying arrestees has many benefits. These benefits include, but are not limited to:

- Improved sample collection compliance of qualifying arrestees
  - Prevents missed collections
  - Prevents duplicate collections of samples already in CODIS
  - Prevents collection of non-qualifying arrestees
- DNA results are loaded into CODIS while the arrestee is in custody
  - Immediate searching of the arrestee against high-interest unsolved crimes (DISC)
  - Searching of all crimes in CODIS within 24 hours
  - Generates immediate investigative leads
  - Eliminates arrestee confirmation process since identity is confirmed prior to enrollment in CODIS

3. Crime Scene Samples and Rapid DNA

Since the enactment of the Rapid DNA Act of 2017, there has been significant interest by law enforcement to use Rapid DNA on crime scene samples. However, currently, crime scene samples

processed by Rapid DNA are **not** authorized for uploading and/or searching in CODIS and NDIS. Enhancements to the Rapid DNA technology are needed to bring the technology into compliance with the FBI Quality Assurance Standards (QAS) for Forensic DNA Testing.

Mouth swabs are ideal for Rapid DNA devices, as they contain large amounts of fresh DNA from one individual. However, crime scene samples can vary widely due to factors such as age, exposure to the elements, or characteristics related to the amount and quality of DNA. Of critical concern, crime scene samples often contain mixtures of DNA from more than one individual which require interpretation by a trained scientist. For these reasons, all crime scene samples must be processed by an accredited forensic DNA Laboratory that follows the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories to be eligible for entry into CODIS.

3.1. Addressing Challenges with Crime Scene Samples and Rapid DNA

The FBI is committed to addressing the challenges presented by the analysis of crime scene samples using Rapid DNA technology by monitoring the enhancements to the technology and interfacing with the Rapid DNA industry. This will ensure the reliable use of Rapid DNA for the analysis of crime scene samples necessary for such samples to be eligible for CODIS entry and searching in the future. Some of these major challenges include the development of automated expert Rapid DNA systems that can reliably interpret single source crime scene samples, the ability to manually interpret mixtures of DNA from more than one individual, and the ability to determine the amount of DNA present in a sample (necessary to assess the resulting quality of the DNA profile, assess for contamination, etc.).

Major milestones accomplished to date for addressing these challenges are listed below.

- **March 2018:** In coordination with the National Institute of Justice (NIJ), the FBI invited all major law enforcement organizations to a meeting in Washington, DC to discuss Rapid DNA. The meeting led to the formation of the FBI's Rapid DNA Crime Scene Task Force to investigate the potential use of Rapid DNA for the analysis of crime scene evidence. The Task Force is composed of two Task Groups: The Non-CODIS Rapid DNA Best Practices/Outreach and Courtroom Considerations Task Group (**non-CODIS Best Practices Task Group**) and The Rapid DNA Crime Scene Technology Advancement Task Group (**Advancement Task Group**).
- **July 2018:** The Scientific Working Group on DNA Analysis Methods (SWGDAM) formed the Forensic DNA Casework Expert Systems Working Group to explore the potential use of expert systems for the automated interpretation of single source crime scene samples in an accredited DNA laboratory. Lessons learned from successful implementation in the laboratory setting can be applied to single source crime scene Rapid DNA samples in the future.
- **September 2019:** The non-CODIS Best Practices Task Group published "Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use" on FBI.gov. This product of the non-CODIS Best Practices Task Group provides valuable guidance for the use of Rapid DNA for non-CODIS purposes. It is important to note that there may be a potential triage role for Rapid DNA technology. Using a Rapid DNA device to triage crime scene samples would require the collection of duplicate samples (A-Swab / B-Swab) using the bouquet method described in the Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use document. One sample (A-Swab) would be collected for submission to the forensic laboratory for analysis using current DNA technology. A second sample (B-Swab) would be collected and could be analyzed immediately using the Rapid DNA device in the field for investigative or triage

purposes. Only the results from the accredited forensic laboratory analysis would be used for upload and/or searching in CODIS and for court testimony purposes.

- **July 2020:** The Advancement Task Group published a joint position statement with SWGDAM and the European Network of Forensic Science Institutes (ENFSI) titled "Rapid DNA for crime scene use: Enhancements and data needed to consider use on forensic evidence for State and National DNA Databasing – An agreed position by ENFSI, SWGDAM, and the Rapid DNA Crime Scene Technology Advancement Task Group" (Forensic Science International: Genetics 48 (2020) 102349). The Advancement Task Group is diligently working with the Rapid DNA industry regarding these required enhancements as well as developing a multi-laboratory testing plan to evaluate the enhancements once they are available. Data and recommendations from the multi-laboratory study will be presented to SWGDAM for consideration.
- **August 2020:** The non-CODIS Best Practices Task Group published "Rapid DNA Testing for non-CODIS uses: Considerations for Court" on FBI.gov. This product of the non-CODIS Best Practices Task Group is a follow-up document to the "*Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use*," and provides valuable guidance for the use of Rapid DNA for court purposes.
- **July 2021:** The CJIS APB Rapid DNA Task Force was reconvened and expanded to develop crime scene Rapid DNA requirements for CODIS similar to the original *Rapid DNA Booking Station Requirements* produced by the Task Force in 2017 for booking station implementation.
- **September 2021**: NIJ provided funding for a multi-laboratory study to test the limitations of the Rapid DNA enhancements once they are available from manufacturers. The study was designed by the Advancement Task Group and based on the publication from July 2020. The FBI coordinated the study and partnered with NIST for study sample creation and data analysis.
- **June 2023**: The CJIS APB approved the Rapid DNA Task Force's *Crime Scene Rapid DNA Requirements for CODIS* document at the June 2023 APB meeting. The CJIS APB Rapid DNA Task Force was reconvened in 2021 to draft these requirements. This document is intended to help guide law enforcement agencies (LEAs) and CODIS laboratories in planning for the future use of crime scene Rapid DNA for CODIS once national standards and procedures are in place. The requirements do not identify all the policies, procedures, or issues an individual LEA or CODIS laboratory will need to address to implement Rapid DNA for CODIS, but will serve as a foundation for future national standards and procedures once the enhanced Rapid DNA technology is available. The CJIS APB recommendations were provided to the FBI Director for approval.
- **August 2023**: The FBI/NIST/NIJ multi-laboratory study funded in September 2021 began. The study was designed by the Advancement Task Group to test the limitations of the Rapid DNA enhancements and was based on the publication from July 2020. Both Rapid DNA manufacturers were participants in the study. The goal was to publish two independent publications of the multi-laboratory study data, one for each manufacturer, in calendar year 2024.
- **December 2023**: On December 4, 2023, the FBI Director approved the CJIS APB's June 2023 recommendations to endorse the Rapid DNA Task Force's *Crime Scene Requirements for CODIS* document.
- **January 2024**: Multi-laboratory study data and draft recommendations based on the data from the Advancement Task Group were presented to SWGDAM for consideration.
- **February 2024:** *Advancement Task Group Recommendations* were finalized and provided to SWGDAM and NDIS.

- **September 2024:** SWGDAM submitted recommended changes to the 2020 FBI Quality Assurance Standards (QAS) for Forensic DNA Testing to the FBI for consideration. Recommend changes included the addition of specific forensic Rapid DNA Standards.

- **December 2024:** Results from the August 2023 FBI/NIST/NIJ multi-laboratory study were published in two manufacturer independent manuscripts. (https://doi.org/10.1016/j.fsir.2024.100395, https://doi.org/10.1016/j.fsir.2024.100396)

- **January 2025:** The FBI approved changes to the Quality Assurance Standards (QAS), effective July 1, 2025, and the July 1, 2025, QAS shall not be applied retroactively (pre-effective date copies of the 2025 QAS are available at SWGDAM.org)

3.2. Future Vision of Rapid DNA Integration for Crime Scene Sample Analysis and CODIS

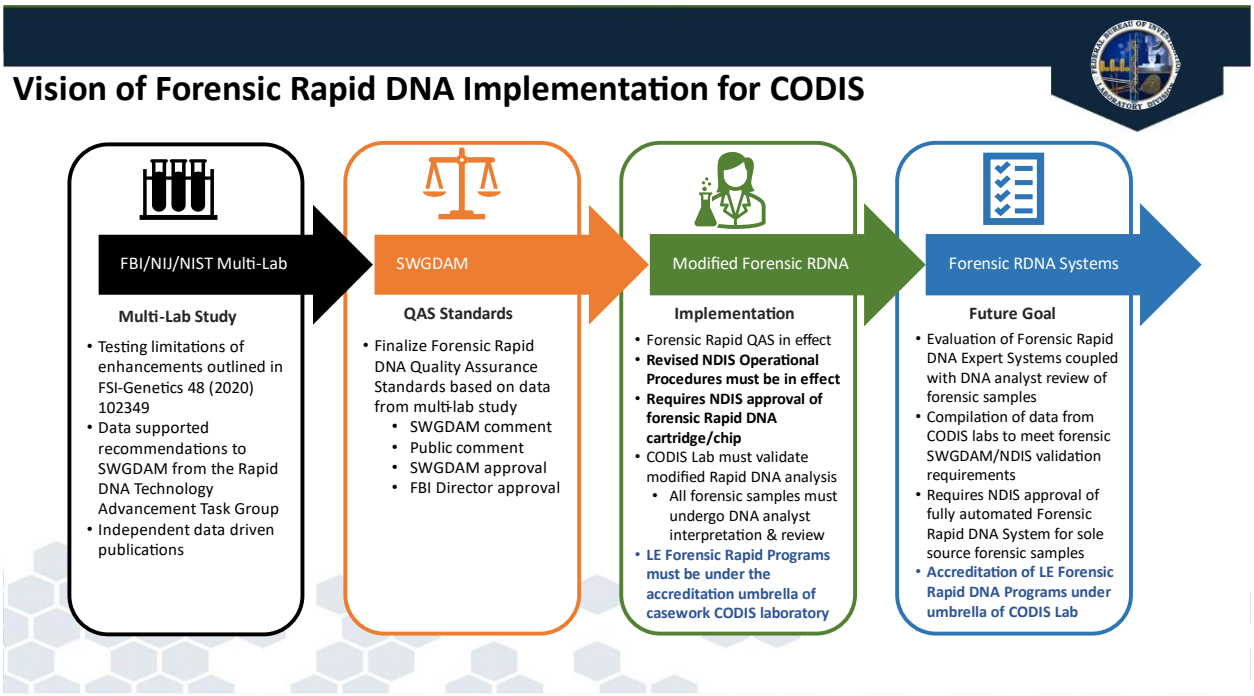

Figure 2: This graphic represents the FBI's future vision to integrate Rapid DNA for crime scene sample analysis and CODIS. With the help of our external partners on the Technology Advancement Task Group, SWGDAM, the NDIS Operational Procedures Board and the CJIS Advisory Policy Board Rapid DNA Task Force, the FBI continues to monitor the maturity of the Rapid DNA technology for future crime scene sample analysis for CODIS. The Rapid DNA industry has made the required enhancements to the Rapid DNA technology outlined in the July 2020 joint position statement by leading scientists in the United States and Europe (Forensic Science International: Genetics 48 (2020) 102349). The Technology Advancement Task Group designed a multi-laboratory study to look at the capabilities and limitations of the improved Rapid DNA technology that began in August 2023 and two multi-laboratory manuscripts were published in 2024. Data from this study supported the use of the improved Rapid DNA technology on crime scene samples and the Technology Advancement Task Group made recommendations to

SWGDAM. SWGDAM made changes to the FBI's Quality Assurance Standards (effective July 1, 2025) to allow for the use of Rapid DNA on crime scene samples and development of crime scene Rapid DNA programs under the accreditation umbrella of the CODIS laboratory. Initially, the data developed from crime scene samples will need to be interpreted and reviewed by qualified DNA analysts (modified Rapid DNA analysis) in the CODIS laboratory while additional information is collected regarding the onboard expert systems and their ability to identify single source crime scene sample data. The implementation of modified Rapid DNA analysis for crime scene samples will require the following to be completed: Quality Assurance Standards for the forensic use of Rapid DNA; revised NDIS Operational Procedures addressing the forensic use of Rapid DNA; NDIS approval of new forensic Rapid DNA cartridges/chips; and validation of modified Rapid DNA analysis by the laboratory.

As outlined in the July 2020 joint position statement by leading forensic scientists in the United States and Europe (Forensic Science International: Genetics 48 (2020) 102349), enhancements are needed before Rapid DNA is suitable for crime scene CODIS applications. The Advancement Task Group continues to monitor the maturity of Rapid DNA and is making plans to evaluate the capabilities and limitations of the technology after enhancements are made.

Milestones which still need to be accomplished are listed below:

1. Rapid DNA technology improvements and data were needed (Forensic Science International: Genetics 48 (2020) 102349) for use on crime scene samples intended for CODIS upload.
    a. Coordinated multi-laboratory study was led by the Advancement Task Group to evaluate the capabilities and limitations of the improved Rapid DNA technology. The multi-lab study was initiated in August 2023.
    b. Data supported the use of the improved Rapid DNA technology on crime scene samples. The Advancement Task Group made recommendations to SWGDAM regarding the maturity of Rapid DNA for crime scene samples analysis and CODIS.

Milestones 2, 3 and 4 are dependent on data and completion of Milestone 1

2. Development of a Crime Scene Rapid DNA Program that is covered under the accreditation umbrella of a CODIS laboratory provides the quality structure needed to:
    a. Dramatically increase the capacity of an accredited CODIS laboratory by increasing the number of trained technicians available (remote processing).
    b. Address the need for qualified DNA analyst data review required for crime scene sample data.
    c. Provide ability to search crime scene Rapid DNA profiles in CODIS.

3. Development of Rapid DNA Standards and Procedures for crime scene sample and CODIS use as outlined in the Rapid DNA Act of 2017.

4. Approval of Expert Systems for crime scene sample use.
    a. SWGDAM's Forensic DNA Casework Expert Systems Working Group is developing guidance in this area for use with single source crime scene samples in an accredited DNA laboratory.

b. Lessons learned from accredited laboratory use can be applied to Rapid DNA in the future for the automated interpretation of single source crime scene samples.

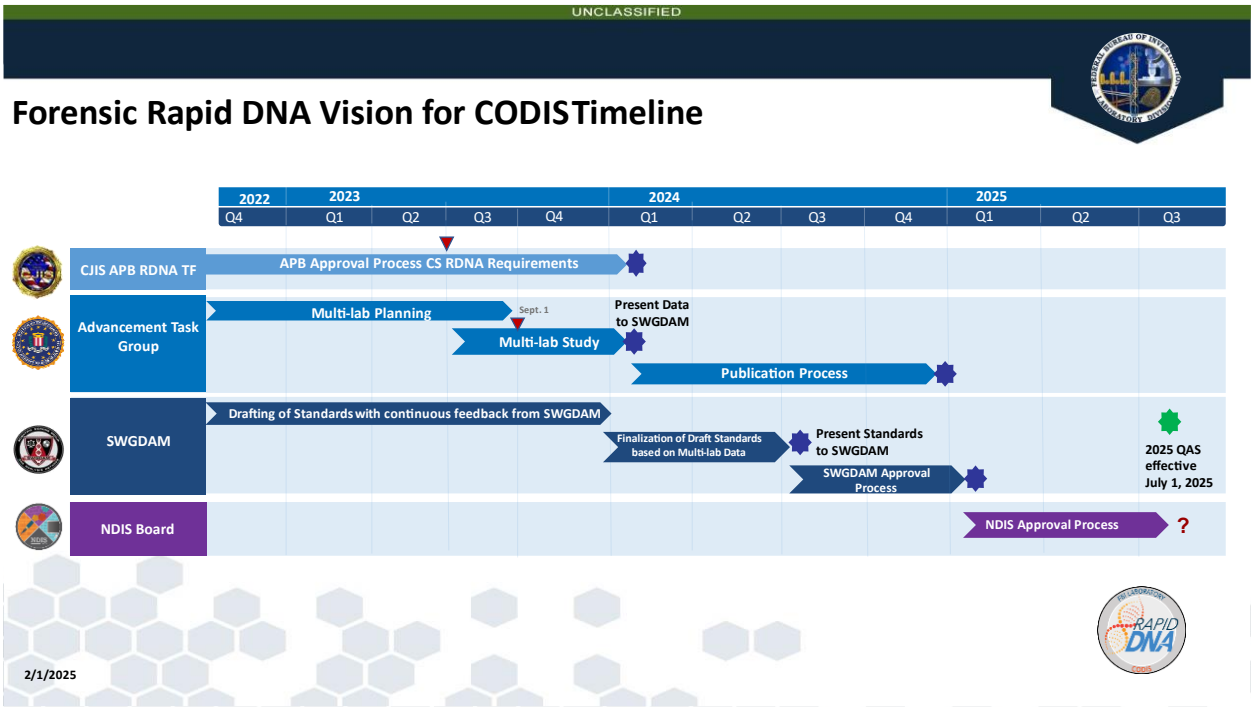

Figure 3: This graphic represents the FBI's timeline for crime scene Rapid DNA for CODIS. This timeline was heavily dependent on data from the multi-laboratory study supporting the use of improved Rapid DNA technology specific for crime scene samples. The CJIS APB Rapid DNA Task Force's Crime Scene Rapid DNA Requirements document was approved in January 2024. The Rapid DNA Technology Advancement Task Group planned and coordinated the multi-laboratory study that began in August 2023. Data from the multi-laboratory study was presented to SWGDAM in January 2024 and published in December 2024. SWGDAM finalized draft Standards for the use of Rapid DNA on crime scene samples based on data from the multi-laboratory study from the improved crime scene technology. The finalized draft Standards went through a formal approval process that includes an official SWGDAM comment period, a public comment period, SWGDAM approval/recommended to the FBI, and review and followed by approval from the FBI Director. The FBI has approved changes to the Quality Assurance Standards (QAS), effective July 1, 2025, and shall not be applied retroactively (pre-issuance copies are available at SWGDAM.org). NDIS Operational Procedures will be updated and released prior to the effective date of the 2025 QAS (July 1, 2025). NDIS approval of the newly enhanced Rapid DNA cartridges/chips is required prior to use on crime scene samples for uploading and searching CODIS. Please see section 3.3 for more information regarding NDIS approval. At the time of this publication, nothing has been submitted to initiate the NDIS approval process. Initially, the data developed from crime scene samples will need to be interpreted and reviewed by qualified DNA analysts in the CODIS laboratory while additional information is collected regarding the onboard expert systems and their ability to identify single source crime scene sample data.

The FBI is dedicated to facilitating the advancement of Rapid DNA technology in order to ensure its reliable, responsible, and appropriate implementation for crime scene and CODIS use.

3.3. NDIS approval of Forensic Rapid DNA Cartridges/Chips for Modified Rapid DNA Analysis on Crime Scene Samples

NDIS approval of the newly enhanced Rapid DNA cartridges/chips will be required prior to use on crime scene samples for uploading and searching CODIS. The NDIS approval process will follow Appendix F *Guidelines for Submitting Requests for Approval of New PCR loci or New/Modified PCR Kits* in the *NDIS Operational Procedures Manual*. In addition to the requirements of Appendix F, NDIS approval may also incorporate completion of the five requirements outlined in the joint position statement titled *Rapid DNA for crime scene use: Enhancements and data needed to consider use on forensic evidence for State and National DNA Databasing – An agreed position by ENFSI, SWGDAM, and the Rapid DNA Crime Scene Technology Advancement Task Group* (Forensic Science International: Genetics 48 (2020) 102349) as well as any recommendations regarding NDIS approval from the *Advancement Task Group Recommendations* document.

It is recommended that an NDIS participating laboratory planning to submit a request for approval of a forensic Rapid DNA cartridge/chip contact the NDIS Custodian early in the validation process to ensure a complete submission. Requests for approval shall be reviewed and evaluated by a panel designated by the FBI who shall consider the criteria referenced above. The NDIS Custodian may request additional information and documentation, as necessary, to ensure a thorough review and evaluation.

3.4. Implementation Framework for Crime Scene Rapid DNA for CODIS

The FBI and its partners have been developing the framework needed for CODIS laboratories to implement forensic Rapid DNA programs in their laboratory and implement Rapid DNA in partnership with non-CODIS partner agencies (effective July 1, 2025). Below are some important documents to help guide CODIS laboratories and partner agencies when developing forensic Rapid DNA programs for CODIS.

1. *Crime Scene Rapid DNA Requirements for CODIS* (CJIS APB)
2. 2025 Quality Assurance Standards for Forensic Testing Laboratories effective July 1, 2025 (available at SWGDAM.org)
3. 2025 Guidance Document for 2025 Quality Assurance Standards
4. *Considerations for CODIS Laboratories Implementing Forensic Rapid DNA Programs with Partner Agencies*
5. *Considerations for Law Enforcement Agencies Implementing Forensic (Crime Scene Evidence) Rapid DNA Programs with CODIS Agencies*

4. Disaster Victim Identification and Body Identification

When DNA is needed in body identification or disaster victim identification (DVI), the use of Rapid DNA can help expedite the identification process. It is critical to involve laboratory personnel and the medical examiner/coroner when establishing an identification program. Identification should be a coordinated effort as expertise is needed during the identification process.

Identification requires the comparison of an unidentified human remain to some sort of reference sample. A direct reference sample is a sample that can be verified as originating directly from the missing person or deduced as coming from the missing person. Some examples of verified and deduced reference samples can be seen below:

Verified Direct Reference Sample (preferred)	Clinical biopsy sample Clinical blood sample Newborn screening sample Mouth swab from identification kit
Deduced Direct Reference Sample	Toothbrush Razor Eyeglasses Jewelry

If a direct reference sample is not available, it is important to collect reference samples from biological relatives of the unidentified/missing person. Two or more biological relatives should be collected whenever possible as genetic comparison to biological relatives can be complex. Documentation of the exact biological relationship and consent to use a biological relative sample for comparison is necessary. Primary biological relatives are the best for comparison and are preferred. Secondary relatives should only be collected when two primary relatives are not available.

Primary Biological Relatives (preferred)	Biological Parents Biological Children Biological Siblings
Secondary Biological Relatives	Biological Aunts Biological Uncles Half-Siblings Biological Grandparents

It is recommended that body identification or DVI programs outside an accredited laboratory follow the Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use.

It is important to note that if the unidentified human remains or the family reference sample(s) should ever be placed in the CODIS National Missing Persons Database, the samples must be worked in an accredited laboratory following the FBI's Quality Assurance Standards. CODIS laboratories can add additional locations under their scope of accreditation to process family reference samples via Rapid DNA outside the physical laboratory. This may be possible for unidentified human remains once the requirements of section 3.2 *"Future Vision of Rapid DNA Integration for Crime Scene Sample Analysis and CODIS"* are met.

5. Rapid DNA in an Accredited Laboratory

The Forensic and Database Quality Assurance Standards for accredited DNA laboratories address the use of Rapid DNA in the laboratory setting for known, database or casework reference samples. CODIS eligible reference samples can be uploaded to CODIS as well as NDIS at the national level of CODIS. Please see the *NDIS Operational Procedures Manual* for more details and necessary requirements.

CODIS laboratories can add additional locations under their scope of accreditation to process casework reference samples via Rapid DNA.

5.1. Benefits of Laboratory Rapid DNA Use

Integration of Rapid DNA for reference mouth swabs in the laboratory has many benefits. These benefits include, but are not limited to:

- Reference sample mouth swabs can be easily analyzed using a separate and faster workflow from evidence samples.
- Forensic DNA analysts can focus on crime scene evidence samples.
- Suspect and elimination samples submitted after the evidence in the case does not disrupt the forensic DNA analyst's examination plan.
- DNA data from suspect and elimination samples are quickly available for comparison in the case.

6. Law Enforcement FAQs Regarding Rapid DNA

1. What is Rapid DNA?
   Rapid DNA, or Rapid DNA analysis, is a term used to describe the fully automated (hands free) process of developing a DNA profile from a reference sample mouth swab in 1-2 hours without the need of a DNA laboratory and without any human interpretation. Rapid DNA devices were originally designed for operation in booking stations to enroll and search an arrestee's CODIS profile during the booking process. This technology has the potential to dramatically impact law enforcement's ability to generate investigative leads while an arrestee is still in custody. Ultimately, Rapid DNA in the booking station has the potential to prevent additional crimes from being committed by that individual, resulting in safer communities.

2. What is the DNA Index of Special Concern, or DISC?
   The DISC is a collection of DNA profiles from unsolved cases (homicides, sexual assaults, kidnapping and terrorism cases) specifically identified by NDIS participating laboratories that will be searched immediately every time an arrestee sample is successfully processed in a Rapid DNA device located in a booking station. If a match is made in DISC to an unsolved crime scene sample, this will enable law enforcement to detain these individuals during the booking process. DISC profiles are searched at the state and national level.

3. What is the Rapid DNA Act of 2017 and what does it mean to law enforcement?
The Rapid DNA Act of 2017 authorized CODIS enrollment of qualifying DNA profiles developed in an approved Rapid DNA device. Previously, DNA had to be developed in an accredited laboratory by a trained scientist with degree requirements. The law now allows the FBI to create a path for DNA profiles to be uploaded to CODIS directly from these devices.

4. Does a Rapid DNA device produce a full CODIS eligible DNA profile?
A Rapid DNA device can produce a full CODIS-eligible DNA profile from a reference mouth swab about 85-90% of the time. If a sample does not produce a full CODIS eligible DNA profile, a second sample must be attempted or submitted to the laboratory for analysis. Please consult your laboratory to determine the best option for your situation.

5. How much training is required to use a Rapid DNA device?
Rapid DNA devices have been designed to be operated by non-laboratory personnel, i.e., law enforcement personnel. Only minimal training is required to operate a Rapid DNA device. The training required is similar to that needed to operate a LiveScan fingerprint device.

6. How many samples can be processed by a Rapid DNA device?
Sample capacity varies from device to device but ranges from 1 sample per run to 5 samples per run.

7. Can Rapid DNA devices be used on crime scene samples for CODIS?
Not at this time. Currently available Rapid DNA devices were specifically developed for reference sample mouth swabs collected from arrestees during the booking process. Reference sample mouth swabs contain pristine DNA that makes them ideal for this application. Crime scene samples do not routinely contain pristine DNA and are therefore precluded from being processed using a Rapid DNA device for CODIS purposes at this time.

   It is important to note that there may be a potential triage role for Rapid DNA. Using a Rapid DNA device to triage crime scene samples would require the collection of duplicate samples (A-Swab / B-Swab). One sample (A-Swab) would be collected for submission to the forensic laboratory for analysis using current DNA technology. A second sample (B-Swab) would be collected and could be analyzed immediately using the Rapid DNA device in the field for investigative or triage purposes. Only the results from the accredited forensic laboratory analysis would be used for upload and/or search in CODIS and for court testimony purposes. See Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use and Rapid DNA Testing for non-CODIS uses: Considerations for Court for more information.

8. How could Law Enforcement utilize Rapid DNA for CODIS?
There are three main opportunities for the law enforcement community to utilize Rapid DNA for CODIS.
   - The first is the use of Rapid DNA in an accredited laboratory. This is already a reality as there are NDIS approved Rapid DNA Systems that a forensic laboratory can use for known reference mouth swabs and qualifying samples can be enrolled in CODIS/NDIS.

- The second is the use of Rapid DNA technology in the booking station environment for the processing of a qualifying arrestee sample.
- The third opportunity is the potential use with crime scene samples for enrollment and searching in CODIS, which is perhaps the most challenging scenario and represents a long-term strategy. The FBI is currently working with other Federal, State and Local law enforcement partners as well as the Rapid DNA industry to help advance this technology as it relates to the processing of casework samples.