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# All Things Rapid DNA

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## FBI Rapid DNA Collaboration Efforts



-  CJIS Advisory Policy Board (APB) Rapid DNA Task Force
-  FBI Rapid DNA Crime Scene Task Force
  - Technology Advancement Task Group
  - Best Practices/Outreach Task Group Non-CODIS (LE Use)
-  SWGDAM
  - Rapid DNA Committee
-  NDIS Board
-  ENFSI
  - DNA Automation Working Group

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## Rapid DNA Implementation



From a law enforcement perspective, there are three opportunities for implementation of Rapid DNA

Laboratory	Booking Station	Crime Scene
		

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### Rapid DNA Systems – Laboratory Use

- 2 Rapid DNA Systems (**fully automated**) currently approved for **accredited laboratory use on reference sample buccal swabs**
- 2020 FBI Forensic and Database Quality Assurance Standards (QAS) addresses Rapid DNA use for Casework Reference and Database Reference Samples
- Only **A-chip (ANDE)** and **ACE cartridge (Thermo)** are included in NDIS approval



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### Modified Rapid DNA – Laboratory Use

- QAS** defines internal validation requirements, and **NDIS Procedures** define NDIS requirements for Modified Rapid DNA
  - Internal validations are required and must cover range of **casework/database reference sample types** used
- Validations must cover different chip/cartridge types used
  - Chip/cartridges types are very different (A-chip vs I-chip, ACE cartridge vs INTEL cartridge)
  - Must be an **NDIS approved PCR STR typing test kit**
    - DNA typing kit with corresponding part number or catalogue number
    - NDIS participating laboratory must have documentation that the chemistries and concentrations are exactly the same as the NDIS accepted PCR STR typing kit.
    - Kit must be listed in Appendix E of the NDIS Procedures.
      - ANDE, FlexPlex27 (A0210001057)
      - Life Technologies (AB), GlobalFiler® Express (Part Numbers 4474665 & 4476609)
- Rapid DNA section (4.6) was completely updated in July 1, 2021 version**

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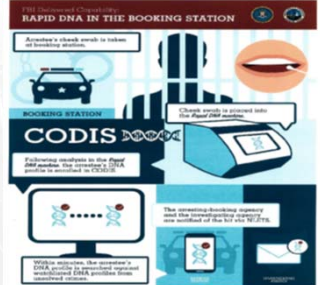
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### Rapid DNA Implementation at the Booking Station

- A mouth swab is taken after a qualifying arrestee is identified via fingerprints
- A CODIS DNA profile is automatically developed by the Rapid DNA Booking System
- The qualifying arrestee's DNA profile is immediately **enrolled** in the State and National DNA Database
- DNA Profile is immediately **searched** against the DNA Index of Special Concern (unsolved "DNA Watchlist")
  - Arrestee profile searched against all other forensic profiles within 24 hours
- Hits to DNA Index of Special Concern are immediately disseminated via Nlets



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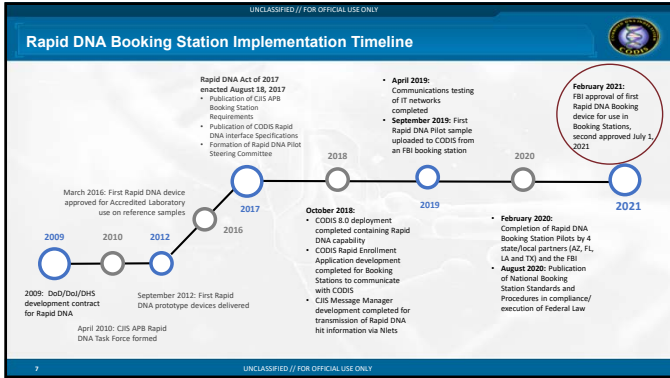
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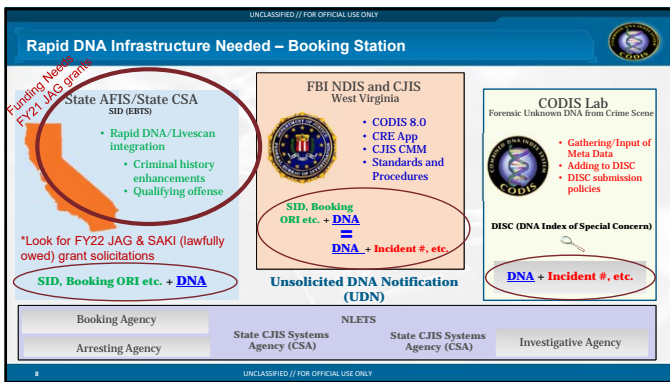
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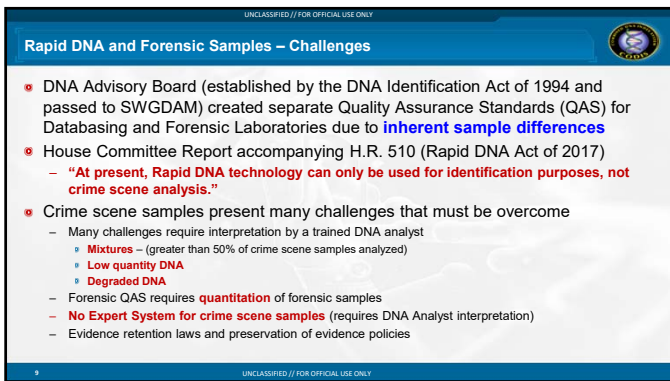
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## SWGDM Forensic DNA Casework Expert System WG

- SWGDM's Forensic DNA Casework Expert System Working Group first convened during July 2018 SWGDAM meeting



**SWGDM Committees**

Please click here for a current listing of SWGDAM Committee participants.

In accordance with the SWGDAM System, Section 5, the SWGDAM Policy is established and Committee Chair responsibilities are defined. SWGDAM is a non-profit organization that is a 501(c)(3) corporation. SWGDAM is a non-profit organization that is a 501(c)(3) corporation. SWGDAM is a non-profit organization that is a 501(c)(3) corporation.

**Forensic DNA Casework Expert System Working Group**

SWGDM has empaneled a Forensic DNA Casework Expert System Working Group (FESWG) to explore the potential of developing guidelines for the validation and use of allele calling software as expert systems for the interpretation of forensic DNA casework samples. The FESWG is essentially an extension of the 2005 SWGDAM Expert System Committee that recommended the current expert system requirements that NDIS adopted. Working Groups are generally convened by SWGDAM to provide feedback on specific issue(s) within a limited time frame and outside of regular SWGDAM meetings. The chair of the FESWG is Amy McGuckian of the Palm Beach County Sheriff's Office and the vice chair is Darrell Outbre of the FBI Laboratory.

**Tasks**

- The FESWG will evaluate the feasibility of using allele calling software tools as expert systems (as defined in the NDIS Operational Procedures) for interpreting forensic casework samples in ways similar to or different from the manner in which these tools are already used by DNA databasing laboratories.

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## Joint ENFSI, SWGDAM, and Technology Advancement TG Publication



Forensic Science International: Genetics 48 (2020) 102349

Contents lists available at ScienceDirect

Forensic Science International: Genetics

journal homepage: [www.elsevier.com/locate/fgigen](http://www.elsevier.com/locate/fgigen)

Letter to the Editor

**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 statement by ENFSI, SWGDAM and the Rapid DNA Crime Scene Technology Advancement Task Group**

<https://doi.org/10.1016/j.fsigen.2020.102349>

Received 13 March 2020  
Available online 08 July 2020  
1872-4973/ Published by Elsevier B.V.

**Identifies 5 major areas that must be addressed before Rapid DNA instruments can be tested and evaluated for the analysis of forensic evidence for State and National DNA databasing purposes**

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## Path for Rapid DNA Crime Scene Sample Use for CODIS

-  CJIS Advisory Policy Board (APB) Rapid DNA Task Force
-  FBI Rapid DNA Crime Scene Task Force
  - Technology Advancement Task Group
-  SWGDAM
  - Rapid DNA Committee
-  NDIS Board

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**Path for Rapid DNA Crime Scene Sample Use for CODIS**

- Questions for the "Groups" to deliberate moving forward for CODIS use:
  - Requirements
  - Accreditation
  - Training
  - Need for expert analysis of crime scene sample data
  - Modified Rapid (Rapid Use in a CODIS Lab by a Forensic DNA Examiner)
    - Mixtures
    - Partials
  - CODIS eligibility
  - Secure data transfer
  - Mechanism for searching CODIS
  - Consumption of evidence
  - Development of national Rapid standards and procedures
  - Other considerations to be determined

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**Rapid DNA Webpage**

- Rapid DNA Webpage  
<https://www.fbi.gov/services/laboratory/biometric-analysis/codis/rapid-dna>
- [RapidDNA@fbi.gov](mailto:RapidDNA@fbi.gov)
- New totally redesigned web page coming in 2021



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