

# **Disclaimer**

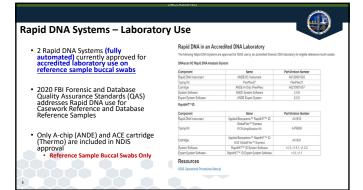


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#### Modified Rapid DNA - Laboratory Use

- QAS defines internal validation requirements and NDIS Procedures define NDIS requirements for Modified Rapid DNA

   Reference samples other than buccal swabs require internal validation and modified Rapid DNA

   Examples liquid blood, Fit, Bode collector, etc.

   Internal validations are required and must cover range of casework/database reference sample types used

- 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 a NDIS approved PCR STR typing test kit

  DNA typing kit with corresponding part number or catalogue number

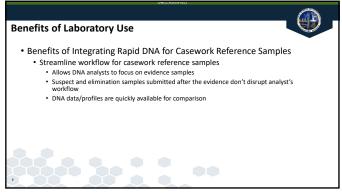
  NDIS participating laboratory must have documentation that the chemistries and concentrations are exactly the same as the NDIS accepted PCR STR typing kit.

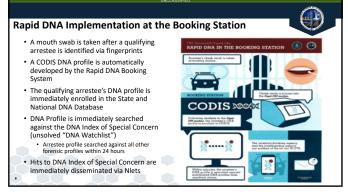
  Kit must be listed in Appendix of the NDIS Proceedures.

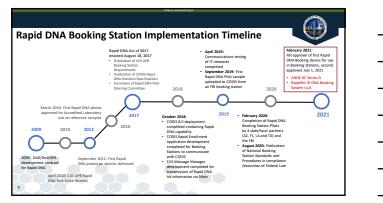
  ANDE, FlexPica27 (A0210001857)

  Life Technologies (AB), GlobalFiler® Express (Part Numbers 4474665 & 4476609)
- Rapid DNA section (4.6) of the NDIS Procedures









#### Rapid DNA Booking Station Implementation Timeline



The Louisiana State Police Crime Laboratory went online with a single booking station on August 2, 2022



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# Benefits Arrestee Collection and Booking Station Rapid DNA



- Benefits of Rapid DNA at the Booking Station
- Improves sample collection compliance
   Prevents missed collections
- Prevents duplicate collection of samples already in the database
  Allows for collection of qualifying arrestees only
  DNA results loaded into CODIS while arrestee is in custody

- Immediate searching of high interest unsolved crimes
   Searching of all crimes within 24 hours
- Quick investigative leads
- Release of Hit information faster due to qualifying offense and confirmation of identity at time of collection
- Resource Needs
  - Requires upgrading and integrating Rapid DNA into electronic booking process

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#### Rapid DNA and Forensic Samples - Challenges



- DNA Advisory Board (established by the DNA Identification Act of 1994 and passed to SWGDAM) created separate Quality Assurance Standards (QAS) for Databasing and Forensic Laboratories due to inherent sample differences
- House Committee Report accompanying H.R. 510 (Rapid DNA Act of 2017)
  - "At present, Rapid DNA technology can only be used for identification purposes, not crime scene analysis."
- Crime scene samples present many challenges that must be overcome

  Many challenges require interpretation by a trained DNA analyst

  Mixtures (greater than 50% of crime scene samples analyzed)

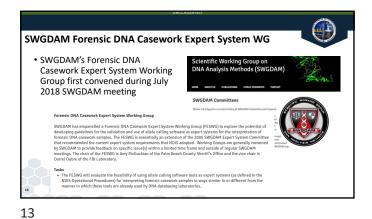
  Low quantity DNA

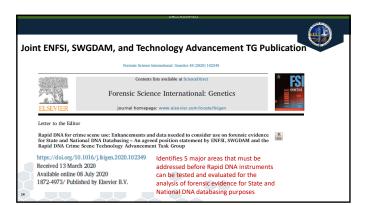
  Degraded DNA

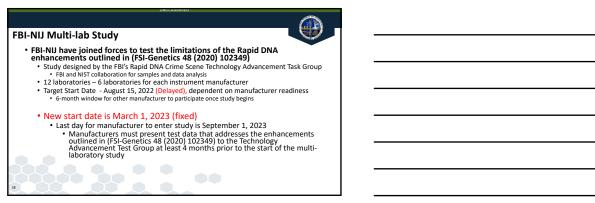
  Forensic QAS requires quantitation of forensic samples

  No Expert System for crime scene samples (requires DNA Analyst interpretation)

  Evidence retention laws and preservation of evidence policies







# FBI-NIJ Multi-lab Study



- Main objectives of the multi-lab study are:
  - Determine the limitations of the enhanced technology through sensitivity and mixture studies involving the extraction process
    - Target DNA concentrations will be calculated by the number of cells present in each sample.
  - Determine the variability between the instruments of the same manufacturer
  - · Publish independent articles

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# Path for Rapid DNA Crime Scene Sample Use for CODIS











- FBI Rapid DNA Crime Scene Task Force Technology Advancement Task Group

   Published Rapid DNA for crime scene use: Enhancements and data needed to consider use on forensic evidence for Visite and Network DNA DNA probability and appear doublent sciencement by NLOS OF DNA and the Rapid Control of the Cont



- SWGDAM Casework Expert Systems Working Group and Rapid DNA Committee

   Develop Guidance and Standards for use of Expert Systems on single source crime scene samples in an accredited laboratory

   Develop Quality Assurance Standards for crime scene Rapid DNA use



- ADIS Board

  Approve enhanced Rapid DNA STR typing kits for use on crime scene samples

  For use with Modified Rapid DNA analysis

  Approve crime scene Rapid DNA System(s) for use on single source crime scene samples

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# Path for Rapid DNA Crime Scene Sample Use for CODIS



- The FBI envisions the development of a crime Scene Rapid DNA program that is covered under the accreditation umbrella of a CODIS laboratory. This provides the quality structure needed to:
  - Dramatically increase the capacity of an accredited CODIS laboratory by increasing the number of trained technicians available (remote processing)
  - Address the need for qualified DNA analyst data review required for crime scene sample data
  - (laboratory reach back capability)

    Provide ability to search crime scene Rapid DNA profiles in CODIS
- Both Accrediting bodies have mechanisms to add additional locations to the Laboratory's Accreditation through scope extension.

