Procedure for CODIS – DNA Database
DNA Database Section
Issued by DNA Database Forensic Scientist Manager and CODIS Administrator

Version 3
Effective Date: 07/01/2020

Procedure for CODIS – DNA Database

1.0   **Purpose** – The purpose of this document is to define the responsibilities of CODIS Users, to provide procedures for profile management in CODIS, to explain CODIS systems operation, and to outline CODIS hit procedures. The goal of the CODIS system is to provide a means for known DNA profiles to be searched against unknown DNA profiles potentially providing investigative information that could solve a crime.

2.0   **Scope** – The procedures in this document apply to all CODIS related functions performed by CODIS Users in the DNA Database Section of the State Crime Laboratory. In addition, the procedures contained herein are established to comply with the National DNA Index System (NDIS) Acceptance Standards Operational Procedures.

3.0   **Definitions** – See Section Definitions List

4.0   **Equipment, Materials, and Reagents** – computers with CODIS software, CODIS server, external media storage device, SpecMan, Forensic Advantage (FA) system, Adobe Pro software.

5.0   **Procedure**

   5.1   **General CODIS Procedures**

   5.1.1   **DNA Database Forensic Scientist Responsibilities**

   5.1.1.1   After technical review, the DNA Database Forensic Scientist is responsible for importing the profiles of all eligible convicted offenders and arrestees into CODIS.

   5.1.1.2   After importing convicted offender and arrestee profiles, the DNA Database Forensic Scientist is responsible for identifying and reconciling any duplicate database samples.

   5.1.1.3   The DNA Database Forensic Scientist is responsible for the deletion of a specimen pursuant to an approved expungement request.

   5.1.1.4   All qualified CODIS Users are responsible for successfully completing the FBI/NDIS Annual Eligibility Training, as assigned.

   5.1.2   **CODIS Administrator**

   5.1.2.1   The CODIS Administrator is responsible for ensuring that the DNA Database Section is in compliance with NDIS sample acceptance policy.

   5.1.2.2   The CODIS Administrator is responsible for the oversight of all operations of the CODIS system.

   5.1.2.3   The CODIS Administrator is responsible for administering the Laboratory's CODIS network.

   5.1.2.3.1   This responsibility includes, but is not limited to, the following: software updates, user maintenance, national and state uploads,

processing of incoming and outgoing search requests, and communication with other laboratories and law enforcement agencies.

5.1.2.4 The CODIS Administrator (or designee) is responsible for evaluating SDIS and NDIS candidate matches to determine if they may have come from the same individual. The CODIS Administrator (or designee) shall view every match that occurs in Match Manager as a result of a state or national upload and shall disposition the matches according to the NDIS operational procedures.

5.1.2.5 The CODIS Administrator shall inform DNA Database Forensic Scientists of any CODIS considerations related to new procedures and software upgrades.

5.1.2.6 The CODIS Administrator shall be responsible for the maintenance and completion of all paperwork required for NDIS participation such as the addition of new users, changing user names, and termination of users no longer employed by the State Crime Laboratory or involved with CODIS. The CODIS Administrator shall ensure that all QAS audit documentation and Laboratory responses shall be provided to the FBI within 30 days of the Laboratory's receipt of the audit documents or report.

5.1.2.7 The CODIS Administrator shall be responsible for the maintenance and completion of all paperwork required for NDIS participation of all local labs.

5.1.2.8 The CODIS Administrator shall be responsible for ensuring that the security of the DNA profiles stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures.

5.1.2.9 The CODIS Administrator shall be responsible for the oversight of CODIS computer training. This includes scheduling and documenting computer training of all CODIS users in the laboratory.

5.1.2.10 The CODIS Administrator shall be responsible for ensuring that the quality of data stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures.

    5.1.2.10.1 This is accomplished through the review process.

    5.1.2.10.2 The CODIS Administrator shall have the authority to remove any profiles that do not meet NDIS requirements.

5.1.2.11 The CODIS Administrator shall have the authority to terminate any North Carolina laboratory's participation (including the State Crime Laboratory) or any user if it is determined by the CODIS Administrator that unreliable data is being uploaded and/or the security of the computer data is not ensured.

5.1.2.12 The CODIS Administrator shall be responsible for preparing documentation required for NDIS participation.

5.1.2.13 The CODIS Administrator is the designated State official.

5.1.2.14 The CODIS Administrator shall successfully complete CODIS software training as well as the FBI's QAS auditor training.

5.1.3 CODIS Assistant Administrator

5.1.3.1 Shall meet the same minimum requirements as the CODIS Administrator.

5.1.3.2 Shall perform the duties of CODIS Administrator in his/her absence.

5.1.3.3 Shall perform the duties listed above as delegated by the CODIS Administrator.

5.1.3.4 Shall complete CODIS software training as well as the FBI's QAS auditor training.

5.2 Procedure for CODIS Systems Operations

5.2.1 Procedure for CODIS Backups

5.2.1.1 NCDOJ IT shall schedule and initiate the backup of CODIS data.

5.2.1.2 A full backup shall be run automatically once a week and incremental backups shall be run on the remaining days of the week.

5.2.1.3 A monthly full backup shall also be run.

5.2.1.4 Monthly backup sets shall be kept offsite.

5.2.1.5 Backups shall be scheduled to occur during off peak hours.

5.2.2 Procedure for CODIS File Storage

5.2.2.1 DNA Database files shall be stored per DNA Database Section procedures.

5.2.3 Procedure for CODIS Security

5.2.3.1 All CODIS users are responsible for security of the software.

5.2.3.2 When a user is finished with a CODIS work session, the user shall log out of CODIS and out of the Network.

5.2.3.3 CODIS Helpdesk users shall be monitored by the CODIS Administrator while using Windows Remote Desktop on the State Crime Laboratory network.

5.3 Procedure for Local CODIS Laboratories

5.3.1 Any local CODIS laboratory in North Carolina which wishes to link to the State Crime Laboratory shall:

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5.3.1.1   Meet all NDIS requirements.

5.3.1.2   Be accredited.

5.3.1.3   Meet National Quality Assurance Standards for Forensic DNA Testing Laboratories, including, but not limited to, the requirement for a yearly audit, proficiency tests, and DNA Database Forensic Scientist qualifications.

5.3.1.4   Provide NDIS required paperwork to the State Crime Laboratory in a timely fashion.

5.3.2   Any CODIS laboratory within North Carolina linked to the State Crime Laboratory's DNA State Database which fails to comply with the above listed requirements or to maintain the required control and privacy standards specified by the State Crime Laboratory for the State DNA Database shall have its CODIS connection and rights to the State DNA Database/Databank terminated.

5.3.2.1   The decision to take these steps shall be made by the CODIS Administrator in conjunction with the DNA Database Forensic Scientist Manager.

5.3.2.2   This decision shall be made after notification is given to the State Crime Laboratory Director and after seeking guidance from State Crime Laboratory Legal Counsel.

5.3.2.3   Notification of revocation of CODIS rights shall be made via letter to the Laboratory Director of the laboratory in question and the NDIS Custodian. The NDIS Custodian shall determine if the DNA records contributed to NDIS should be removed based on the facts and circumstances of each case.

5.4   **Procedure for Profile Management**

5.4.1   **Procedure for Acceptance of DNA Records at SDIS and NDIS**

5.4.1.1   DNA records submitted to SDIS and NDIS shall be *interpretable*.

5.4.1.2   Database and reference samples shall be accurate and complete for the CODIS core loci; efforts shall be made to obtain results for each locus and to enter all of the results as part of the DNA profile.

5.4.1.2.1   Database samples with potential allelic or locus dropout at any locus shall be entered as "Offender – State" or "Arrestee – State." These samples shall not be uploaded to NDIS and shall remain at SDIS until a new sample is submitted and a complete DNA profile is obtained.

5.4.1.3   Composite DNA records may be submitted to SDIS or NDIS.

5.4.1.4   Y STR data are accepted at SDIS. DNA records for database samples must have an amplification attempt at the 13 CODIS Core Loci when data from a Y STR

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specific amplification kit is present.

5.4.1.5 Y STR data are accepted at NDIS. DNA records at NDIS containing Y STR data must meet specimen category specific CODIS Core Loci requirements. At NDIS, Y STR data are searched with the missing person-related indexes only.

5.4.2 Procedure for CODIS DNA Records

5.4.2.1 **Originating Agency Identifier:** Every DNA record submitted to SDIS or NDIS shall have an Originating Agency Identifier (ORI) assigned that is associated with the DNA lab in which the DNA record is generated.

5.4.2.2 **User ID:** Every DNA record submitted to SDIS or NDIS shall have a User ID assigned that identifies the DNA personnel that generated or has taken ownership of that DNA profile.

5.4.2.3 **Specimen ID Number**: Every DNA record submitted to SDIS or NDIS shall have a unique Specimen ID Number.

5.4.2.3.1 The specimen ID shall unambiguously describe the sample. No name or identifying information shall ever be attached to a specimen ID in CODIS.

5.4.2.3.2 The DNA Database specimen ID shall be a unique barcode number or a five digit consecutive number preceded by the full year (i.e., 2000-00001). Note: Some years only contain a two digit prefix.

5.4.2.3.3 The employee/staff specimen ID shall be a four digit consecutive number followed by a five digit consecutive number (i.e. 0001-00001.)

5.4.3 Procedure for Entering DNA Database Profiles into CODIS

5.4.3.1 DNA profiles shall be imported into CODIS directly from GeneMapper ID- X.

5.4.3.1.1 In GeneMapper ID-X, select the appropriate specimen category for export.

5.4.3.1.2 Go to File, select Export Table for CODIS.

5.4.3.1.2.1 Choose CMF 3.3 (.xml) from the drop down menu for Export File As.

5.4.3.1.2.2 Under CODIS Laboratory IDs, ensure the Source and Destination are set to NCBCI0094.

5.4.3.1.2.3 Export the file to an external media storage device.

5.4.3.1.3 On a CODIS computer, open Analyst Workbench and select the Specimen Manager module.

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5.4.3.1.3.1 Select the Import File icon (blue cylinder with green arrow).

5.4.3.1.3.2 Select the file to be imported.

5.4.3.1.3.3 Assign profiles to your user ID and click OK.

5.4.3.1.4 Select the CODIS Message Center module.

5.4.3.1.4.1 Select Import STR Files, double click on the file to be imported (should be in bold type).

5.4.3.1.4.2 Select Import STR Reports, double click on the file and review the reconciliation report for the sample to ensure that the import was successful (should be in bold type).

5.4.3.1.4.3 If there is a problem with the specimen, refer to the reconciliation codes at the bottom of the report.

5.4.3.1.4.4 If a specimen has an off-ladder or microvariant allele that does not import correctly, refer to the CODIS website for a list of acceptable allele calls for CODIS.

5.4.4 Procedure for Conducting Routine Searches

5.4.4.1 All database profiles shall be searched by the DNA Database Forensic Scientist after every database upload using Autosearcher.

5.4.4.1.1 The "Duplicate Arrestee and Offender" Autosearch shall be conducted as follows:

5.4.4.1.1.1 The Arrestee Index shall be searched at high stringency against the Arrestee, Offender, and Multi-allelic Offender Indices with a minimum of thirteen (13) core loci and allowing for one (1) mismatch.

5.4.4.1.1.2 The Offender Index shall be searched at high stringency against the Arrestee, Offender, and Multi-allelic Offender Indices with a minimum of thirteen (13) core loci and allowing for one (1) mismatch.

5.4.4.1.1.2.1 If a potential duplicate arrestee or offender sample is identified, the DNA Database Forensic Scientist shall compare the name and other identifying information in SpecMan. If the same, the specimen category of the specimen with the least amount of

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DNA profile information shall be changed to "Arrestee Duplicate" or "CO Duplicate" in CODIS. A note shall be entered into the specimen record of SpecMan indicating that the specimen is a duplicate. A status change in SpecMan is not necessary. Refer to the Procedure for Match Manager and Hit Dispositioning section of this procedures for hit disposition in Match Manager.

5.4.4.1.1.2.2 If a potential duplicate arrestee or offender sample is identified and the DNA Database Forensic Scientist cannot verify that the DNA profile came from the same individual based on the personal identifying information in SpecMan, the Database Manager shall be notified. Once a determination has been made regarding the potential duplicate samples (see the Procedure for Sample Accessioning and Processing), the DNA Database Forensic Scientist shall place the specimen in the appropriate specimen category in CODIS and shall make a note in the specimen record of SpecMan. The match shall be dispositioned according to NDIS guidelines.

5.4.5   Procedure for Deletion/Changing of Profiles

5.4.5.1   A DNA Database Forensic Scientist may remove a specimen pursuant to an approved expungement request or if the specimen is deemed no longer eligible.

    5.4.5.1.1   The DNA Database Forensic Scientist shall note the reason for removal in the comments section of the specimen record prior to the removal of the profile.

5.4.5.2   A DNA Database Forensic Scientist may update a specimen. No notation is required if the update consists of the import of additional loci as that information is tracked via the CODIS audit trail.

    5.4.5.2.1   Hand entry of additional loci shall be witnessed and noted by a DNA Database Forensic Scientist, Supervisor, or Manager.

5.4.5.3   The CODIS Administrator shall make changes to or remove specimens if the DNA Database Forensic Scientist is not available or able to do so.

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5.4.6 **Procedure for Search Requests Received and Sent**

    5.4.6.1 Profiles generated by another NDIS participating laboratory or Interpol sent via fax or email shall be searched in the NC database by the CODIS Administrator and/or designees.

        5.4.6.1.1 DNA profiles shall be PCR-STR profiles and have been developed from a laboratory that has been properly audited with the FBI Quality Assurance Standards.

        5.4.6.1.2 The laboratory shall have a contract to perform casework.

        5.4.6.1.3 A copy of the search report shall be retained along with the request form.

        5.4.6.1.4 The requesting laboratory shall be notified that the search was completed and the results of the search.

        5.4.6.1.5 If a match occurs which requires a confirmation, the confirmation shall be completed as described in the DNA Database Section Procedure for CODIS Hits.

5.4.7 **Procedure for Conducting One-Time/Keyboard Searches**

    5.4.7.1 The following procedure shall be used when a DNA Database Forensic Scientist is requested to search a profile in CODIS:

        5.4.7.1.1 Open Analyst Workbench and select the Searcher module.

        5.4.7.1.2 Enter the Lab ORI Number.

        5.4.7.1.3 Enter the Specimen ID Number and the alleles for each locus. If the profile was previously entered, it may be retrieved from the database.

        5.4.7.1.4 A keyboard search of an autosomal profile shall be conducted as follows: the Forensic, Forensic Partial, Forensic Mixture, Offender, Arrestee, Suspect, Missing Person, and Unidentified Human Remains Indices shall be searched at moderate stringency, with a minimum of five (5) core loci, and allowing for zero (0) mismatches.

        5.4.7.1.5 A keyboard search of a Y STR profile generated for familial searching shall be conducted as follows: the Offender and Arrestee Indices shall be searched at high stringency, with a minimum of ten (10) Y STR loci, and allowing for one (1) mismatch.

        5.4.7.1.6 Click on the Search button.

        5.4.7.1.7 Once the search is completed, review the Match Details window.

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5.4.7.1.8 If a match occurs which requires a confirmation, the DNA Database Forensic Scientist shall provide the CODIS Administrator a copy of the Match Detail Report.

5.4.7.1.9 The DNA Database Forensic Scientist shall save these matches to Match Manager by selecting the Save Results to Match Manager icon.

5.4.7.1.10 See Procedure for Match Manager and Hit Dispositioning within this document regarding the viewing of matches in Match Manager and hit dispositioning.

5.4.8 **Procedure for Match Manager and Hit Dispositioning**

5.4.8.1 In order to view any matches, open Analyst Workbench and select the Match Manager module.

5.4.8.1.1 Select the Edit icon.

5.4.8.1.2 To sort by Match Date, select (=) and add the date of the search.

5.4.8.1.3 Once the parameters are chosen, select OK.

5.4.8.2 The CODIS Administrator (or designee) shall view every match that occurs in Match Manager as a result of a state or national upload and shall disposition the matches according to the NDIS operational procedures.

5.4.8.2.1 A match between an unsolved case and a convicted offender shall be dispositioned as an "Offender Hit."

5.4.8.2.2 A match between an unsolved case and an arrestee shall be dispositioned as an "Arrestee Hit."

5.4.8.2.3 A match between a solved case and a convicted offender or arrestee, shall be dispositioned as a "Conviction Match." A name verification shall be performed in order to confirm the match between the offender or arrestee and the solved case. If necessary, the appropriate NDIS participating laboratory shall be contacted in order to verify this information. Additional information (i.e. FBI number or SSN) may be exchanged in order to confirm the match. A confirmation of the arrestee or offender sample shall be performed if there are any unresolved discrepancies (see Procedure for Offender/Arrestee Hits within this document).

5.4.8.2.4 A match between two (or more) arrestee or offender samples that have been confirmed as duplicates shall be dispositioned as an "Offender Duplicate."

5.4.8.2.5 A hit between two specimens that have been determined not to

match shall be dispositioned as a "No Match."

    5.4.8.2.6   Additional match situations may occur that shall be dealt with on a case-by-case basis. These matches shall be dispositioned according to NDIS guidelines.

5.5   **Procedure for CODIS Hits**

    5.5.1   **Procedure for Offender/Arrestee Hits**

        5.5.1.1   In the instance of a NC offender/arrestee hit to a NDIS/CMPD case, the CODIS Administrator (or designee) shall create and assign a CODIS hit record in SpecMan upon receipt of a written confirmation request that includes, but is not limited to the following information: the name of the requesting agency, the type of crime committed, and the date that the crime occurred.

            5.5.1.1.1   The CODIS Administrator shall provide a copy of Match Detail report to the assigned DNA Database Forensic Scientist.

        5.5.1.2   The CODIS hit confirmation for NC offenders/arrestees shall be completed as described in the DNA Database Section Procedure for CODIS Hits.

        5.5.1.3   The "CODIS Hit Confirmed" queue shall be monitored; upon administrative approval of the letter he/she shall then update the status of the CODIS Hit in SpecMan to "Completed."

        5.5.1.4   A copy of the signed letter shall be emailed to the NDIS lab CODIS Administrator whom requested the confirmation. If this letter contains personally identifying information, it shall be password protected.

6.0   **Limitations –** N/A

7.0   **Safety –** N/A

8.0   **References**

State Crime Laboratory Quality Manual

DNA Database Section Administrative Policy and Procedure

DNA Database Section Procedure for CODIS Hits

DNA Database Section Procedure for Genemapper ID-X Analysis and STR Interpretation with PowerPlex Fusion

DNA Database Section Procedure for Samples Analyzed In-House

NDIS Operational Procedures, CODIS Website

9.0   **Records –** N/A

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10.0 Attachments – N/A

Revision History		
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07/01/2020	3	Definitions-Moved to section definitions list; 5.1.2.6-Updated external audit documentation to QAS audit documentation; 5.4.1.4-Updated core loci requirements; 5.4.3.1.1-5.4.3.1.2-Combined, Removed navigation instructions; 5.4.4.1.1.2.1-Added Procedure for Match Manager and Hit Dispositioning section name; 5.4.7.1.4-Clarified autosomal profile search; Added 5.4.7.1.5; Removed 5.5.1.3-5.5.1.3.2; Removed 5.5.1.3.4

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