MNPD Crime Laboratory

Tenprint Unit

Technical Procedures Manual

Metropolitan Government of Nashville & Davidson County
Police Department

Table of Contents

TENPRINT UNIT SCOPE OF TESTING

Requests for Service

Requests for Tenprint services are as follows:

- MNPD Form 133 (Request for Tenprint Comparison)
- Email communication from the ME's office with MNPD Form 133 and deceased prints attached
- Email communication from the Courts
- Email communication from Warrants Division
- All requests for service will require a MNPD Form 133

Examinations Conducted

The TPU conducts testing of exemplars on requests as follows:

- Manual comparisons to subject exemplars as requested via MNPD Form 133
- Manual comparisons of subject exemplars via email communication and MNPD Form 133 from ME's office, court system, and warrants.
- Analysis of all requested exemplars to determine workability
- Searches of deceased individuals in the MNPD Automated Fingerprint Identification System (AFIS)
- Searches of deceased individuals in the FBI/ Next Generation Identification (NGI) database

1 INTRODUCTION

1.1 SCOPE: To relay the goals of the Tenprint Unit (TPU) and objectives of the Tenprint Unit Procedures Manual (TPUPM).

1.2 POLICY

- Performs friction ridge skin examinations using known to known images and the methodology of Analysis, Comparison, Evaluation, and Verification (ACE-V) process.
- Utilizes the Metropolitan Nashville Police Department (MNPD) AFIS (Automated Fingerprint Identification System) database to enter, search, and verify fingerprints. May require use of NGI, the FBI database, upon occasion. There is also use of MNPD's Record Management System (RMS) to update and maintain demographic and arrest information.
- Completes reports on scientific analysis of examinations and conclusions.
- Establishes and maintains documents and files pertaining to fingerprint records and comparisons (Tenprint cards, citations, deceased prints, arrest reports, etc.)
- Provides expert witness testimony in courts of law when applicable.

1.3 PROCEDURE

- The TPUPM provides an outline of the methods and procedures utilized by the unit with functions and duties of the technicians. It provides the TPU an orderly workflow to provide a quality product to customers.
- Many of the procedures are described in a general sense. There may be variations or special circumstances that may arise at the time services are provided. In this instance a deviation would be submitted, and the customer will be notified, if appropriate.
- Resources and reference materials may be used when scenarios arise that have not been previously encountered. These materials will guide technicians in decision making, as well as ensuring proper implementation of policies and procedures have been followed (Scientific Working Group on Friction Ridge Analysis, Study, & Technology [SWGFAST] documents, Quality Manual [QM], etc.)

2 EXAMINATIONS and VERIFICATIONS

2.1 SCOPE: Describes the process for manual examinations, verifications, and analysis of poor quality.

2.2 POLICY

Many examinations conducted in a Tenprint environment are documented using an automated process. It is adequate when information is retained and retrievable from electronic logs. Examinations conducted that are not sufficiently documented through an automated process will be documented manually. Any manual fingerprint examination will be documented using MNPD Form 133, Tenprint Examination Worksheet and Verification, Technical and Administrative Review Checklist Consultation Worksheet as needed, and Tenprint Comparison Report. These examinations may include, but are not limited to:

- Record Corrections
- Deceased persons and/or unknown coma victims
- Requests from the Courts
- Requests from the Warrants Section
- Manual examination of poor-quality prints obtained during the booking process requiring a Tenprint technician's intervention.

2.3 PROCEDURE

- A technician will perform all procedures to determine verification.
- Another qualified technician will perform a second examination verifying all identifications, accuracy of decisions, and proper documentation has been completed and included in the case file.
- All service requests are processed by a qualified technician in the Tenprint Unit.
- Assistance of a latent examiner or technician may be requested for AFIS, Idemia and FBI/NGI searches as needed.
- Assistance of a latent examiner or technician may be requested for poor quality submissions.

2.3.1 Procedure for Assistance from Latent Print Unit

1.Images may be forwarded to the Latent Print Unit to be searched through the MNPD AFIS, Idemia, and FBI/NGI Databases.
2. All images must be acquired into DEMS prior to the request for assistance from Latent Print Unit.
3. An email will be sent to the Latent Print Supervisor stating the related incident number in DEMS.
4. Printouts of the searches and results will be signed and dated by the Latent Print Unit staff member who performed the search and uploaded into DEMS.
5. An email will be sent to the Tenprint unit upon completion for processing.
6. All communication between the units will be retained in the Tenprint casefile.

Note: Latent Print staff are only assisting with performing the database search. At no time will they be involved with the actual processing and direct comparison of the tenprints.

Refer to the following sections:

- Examinations, Methodology, and Conclusions
- Documentation for Exam Records
- Identifications- Documentation and Notifications

2.4 Procedure for Poor Quality Submissions and Suitability Determinations

Sustainability and poor quality submissions will be determined using ACE-V methodology through analysis of Level 1, 2, and 3 details. A submission which is determined to be suitable for comparison will be completed according to the TPUPM. Subsequently, if the analysis determines the submission is of poor quality it will be forwarded to LPU for completion.

Suitability Determinations

- Once a technician determines a submission is of value for comparison, the print will be compared to the exemplars of individuals associated with the case, such as names submitted by the customer.
- A technician must be able to confidently observe sufficient quality and quantity of agreement or obtain a possible candidate utilizing the MBIS (Multi-Biometric Identification System) Quick Search function to be considered suitable.

Poor Quality Determinations

- During the analysis phase, the inability to confidently observe and mark more than 6 minutia and insufficient quality of friction ridge detail signifies “Poor quality” at the Tenprint technician level.
- Should a technician make the determination of poor quality, the comparative analysis shall conclude and the procedure for poor quality submissions must be followed.

Note: There is no current scientific basis for minimum requirements of characteristics for identification as other factors should be considered. Prints that are submitted of poor quality, and are more complex, will be forwarded via email to the Latent Print Unit after completing analysis, comparison, and evaluation. The report will reflect that the submission has been forwarded to the LPU for further testing. These instances would include identification of deceased, record consolidations, and manual confirmations.

2.5 References

SWGFAST Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V) in Tenprint Operations

3 RECORD CORRECTIONS

3.1 SCOPE: Describes the procedure for completing a Record Correction requiring fingerprint examinations.

3.2 POLICY

- Several areas generate requests for record corrections, examples include but are not limited to: Record Corrections discovered by TPU employees, record corrections requested by the Criminal Court Clerk, Davidson County Sheriff's Office (DCSO), Warrant Division, Officers, IT, and victims.
- Request for fingerprint examination may be made from various sections of this department, as well as other governmental agencies by the submittal of MNPD Form 133.
- The supervisor (or designee) on duty will determine if the examination needs to be made immediately. The supervisor (or designee) will also determine the supporting documentation needed based on the circumstances of the situation.
- Circumstances that indicate immediacy are ones that involve arrest or release of the subject in question. If two experienced technicians are not available, the TPU supervisor will be contacted.

3.3 PROCEDURE

3.3.1 Record Corrections discovered by TPU Employees

In the event that a record correction is necessary as a result of the discovery of an incorrect bureau number, or demographic information associated with the record, the TPU will determine whether the fingerprint records originated from the same individual by performing an examination. Items such as sex, race, ethnicity, and unauthorized characters(periods, commas etc.) are generally changed immediately upon discovery. TPU must report incorrectly recorded demographics to the TBI & FBI. This will be accomplished by sending an e-mail to the TBI designee.

3.3.2 Informational Record Corrections by Sections outside TPU and by other agencies

Requests for corrections coming from people outside TPU will not be made without some form of documentation or supplemental report supporting a change. A copy of the affidavit to change the arrest charge, an e-mail with supporting information, copy of a driver's license, or other official document, etc. must be presented for corrections to be made. TPU Supervisor, or authorized personnel will handle these corrections.

The original documentation will be maintained within the casefile on the L-Drive. Notes can be made in the narrative tab of the Master Name Index (MNI) record.

3.3.3 Making the examination

For those not requiring an immediate examination the following steps will be taken:

- Refer individual to MNPD Fraud Unit (only if warrant for identity theft is being issued)
- If fingerprints must be collected, TPU will be notified by MNPD Fraud Unit (MNPD Form 133)

- A copy of the individuals ID will be checked verifying demographic information and fingerprints will be collected
- Fingerprint examination will be conducted and documented per TPUPM
- The requestor will receive a Tenprint Comparison Report with the results.
- In some instances, an NGI search with Latent Print assistance may be necessary.

4 RECORD CONSOLIDATIONS

4.1 SCOPE: Describes the procedure for completing a Record Consolidation requiring fingerprint examinations.

4.2 POLICY

Before a record can be consolidated, Tenprint personnel must investigate the records that do not "Hit" during the initial AFIS search that is performed. The investigation will include demographic information, quality control, State Identification (SID), and FBI numbers.

- Request for fingerprint examinations may be made from various sections of this department, as well as other governmental agencies by the submittal of MNPD Form 133.
- The supervisor or designee on duty will determine if the examination needs to be made immediately.
- The supervisor (or designee) will also determine the supporting documentation needed based on the circumstances of the situation. Circumstances that indicate immediacy are ones that involve arrests or release of the subject in question. If two experienced technicians are not available, the TPU supervisor will be contacted.

4.3 PROCEDURE

- Technician will refer to the submitted MNPD Form 133 to determine the information to be consolidated
- Technician will perform a quality check and identify any incorrect demographic information using the MNPD Record Management System (RMS).
- Any reference materials will be retrieved from the AFIS archives database or Tenprint file room and a comparison of records will be performed.
- All analysis and comparison images will be captured in Digital Evidence Management System (DEMS) per TPUPM.
- If an identification is made, the information will be forwarded to TPU Supervisor or other authorized personnel to consolidate records in RMS
- Technicians will release the report to requesting parties and notify DCSO booking via email of information to be updated in Criminal Justice Information System (CJIS)
- All reports, communication, and documentation will be saved on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

5 DECEASED PRINTS and UNKNOWN COMA VICTIMS

5.1 SCOPE: Describes the procedure for processing deceased prints of individuals or coma victims.

5.2 POLICY

- Processing fingerprints of deceased persons, or those of unknown coma victims, are tasks performed by the Forensic Services Division, TPU. The fingerprints of deceased individuals and unknown coma victims may be referred to from hereon as "deceased prints".
- TPU will process requests for identification of fingerprints of all deceased persons and coma victims.
- TPU will notify the TBI, FBI, update the Record Management System (RMS), and MNPD AFIS database upon completion of processing and comparison of deceased fingerprint submissions.

5.3 PROCEDURE

- All in-coming deceased prints will be submitted via email to ID.Request@nashville.gov and accompanied by a service request form (MNPD Form 133).
- Once the fingerprints are searched and compared, a Tenprint Comparison Report will be generated.
- All analysis and comparison images will be captured in DEMS per TPUPM.
- A report with conclusion/findings will be sent to the requesting agency.
- All reports, communication, and documentation will be saved in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint
- All originals will be returned to the requestor after proper documentation.

*** Prior to February 1, 2023, deceased records were saved in Integra Archives folders. Unknown- CRDA0006000000; Known- CRDA0007000000

5.3.1 Requests for immediate search/identification of deceased prints

- Request must be from an Investigative / Patrol supervisor or medical examiner
- Requires approval of the TPU Supervisor
- If there are not sufficient TPU personnel working to do the examination and verification of the prints the TPU supervisor will be contacted.

5.3.1.1 MBIS Database Quick Search

- Searches shall be completed using the Quick Search option found in the Tenprint application.
- Select the + symbol to start a new transaction.
- Select Single Finger Quick Search option to capture the image to be used for the search.
- Image shall be captured at 500 dpi.
- Once image has been captured perform any editing and save changes.
- Choose the inquiry option and select the inquire button to submit package
- Once the package has been submitted the job can be found in the job queue application to determine a Hit/No Hit.

- If the search returns a Hit candidate, the technician shall proceed according to casework procedures.
- If the result of the search is not a hit; assistance from the LPU will be initiated (Refer to 2.3.1)

Printouts of all searches and results will be uploaded into the DEMS casefile.

Modify the criminal record by:

- Go to RMS
- Choose Search Master Name Index
- Enter the deceased Originating Case Agency (OCA) number
- Go to the Death Info tab click Edit/View/Death Info-Click reported on option and enter date.
- All reports, communication, and documentation will be saved in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

**Not Applicable if deceased is not identified or identified as an Applicant*

5.3.1.2 Reporting Results of Known and Unknown Deceased

5.3.1.2.1 Known

- Complete Tenprint Comparison Report
- Send copy of report,, and deceased prints to the TBI via email to TBI.data.quality@TN.gov
- All reports, communication, and documentation will be saved in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

5.3.1.2.2 Unknown (No Hit on the Deceased)

- Technician will complete Comparison Report reflecting the proper result of "no hit".
- The Technician will select the appropriate boxes of database searches completed (i.e. NGI, MBIS, State Search)
- An Examination and Verification worksheet will be included but only documenting for examination purposes.
- The note section will reflect there was no verification required.
- Emails and all correspondence will be sent to the requesting agency with reports included.

5.3.1.2.3 Correspondence from TBI or FBI regarding Deceased

- Send copy to requestor
- Save in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

6 AFIS Verification and Review

6.1 Scope

Describes the Inquiry process of receiving, searching, and verifying fingerprints received from Davidson County Sheriff's Office (DCSO) Booking/Citation or Juvenile Detention and examination/review of those records.

6.2 Policy

The fingerprint documents acquired through the Automated Fingerprint Identification System (AFIS) must be reviewed by fingerprint technicians. AFIS has integrated "Lights Out" programming, which enables an automated search of a specified percentage of records through the AFIS system, eliminating the need for a Fingerprint Technician to manually intervene. The normal processing of fingerprint records obtained through the "Lights Out" program will follow normal processing.

6.3 Procedure

- All verified records will remain in AFIS Tenprint queue until they have undergone a review by another technician
- Technicians assess the fingerprint images that were received and perform a quality control check (checks the core and axis, updates pattern types, and performs roll print substitutions if needed).
- Records that require updates such as rolled print substitutions, pattern, etc will be relaunched as a TI
- Technicians will review fingerprint records obtained during juvenile and adult custodial bookings in the Metropolitan Nashville Police Department (MNPD) Automated Fingerprint Identification System (AFIS). At a minimum, all automated friction ridge review documentation will include the following:

    a. Unique identifiers of the questioned print (s) and known print(s) used to reach the conclusion(s)
    b. Unique identifiers of the technician(s) (e.g., initials, signature, or equivalent electronic signature)
    c. Beginning and End dates of exam records being reviewed

- All review documentation will be stored on K:Drive> ID Division> 10 Print Tracking Forms> Review Log
- Records in need of manual intervention will follow specific guidelines.

6.4 Visual Verifications

Records that fall below a certain threshold, and those that have automatic stops, will require a manual comparison and/or verification. This does not require verification unless the fingerprints are of poor quality. If the fingerprints are of poor quality, manual verifications will be documented per TPUPM.

- Check the print against all possible candidates
- Print out a hard copy to ensure a complete and accurate comparison
- If search prints match a set of prints on the candidate list,
    - Select that candidate and mark HIT
    - Select APPLY
- If the search prints do not match any of the candidates
    - Select NO HIT button

    - Select APPLY.
- If the search prints match more than one set of prints on the candidate list
    - Make the oldest OCA number a HIT
    - Select NO HIT on the other OCA
    - Print off a copy of the fingerprints from the candidate list that has OCA numbers
    - Complete an administrative consolidation form
    - Consolidate the OCA numbers in Archives and RMS

6.5 Initiation of New Record

Records that require the initiation of a new OCA to be created in both the AFIS and RMS database due to a manual confirmation request will be established by the following procedure.

- The technician will perform a comparison of the FID impression and tenprint images captured at the time of booking.
- Images will be acquired into DEMS and follow policy and procedure for casework per TPUPM.
- Once it has been determined to be originating from the same source, the technician will assign a new OCA to the individual from RMS.
- The examination and verification worksheet will be marked as an ident.
- The Tenprint Comparison Report will be marked as “new record” with a note added reflecting the new OCA number.

Note: *When this happens, the new record will be marked as an identification as there is no other known source in the database from past events, and the FID recorded at the time of booking has been compared to the tenprint at that time and found to be originating from the same source. If they don't match, the technician will record it as an exclusion and let the booking operator know so that a new FID and tenprint may be taken.*

7 AFIS DOWN

7.1 Scope

Describe how records will be processed and maintained during AFIS downtime.

7.2 Policy

- DCSO/Booking, TPU, and/or Juvenile Detention staff will notify the AFIS Site Engineer when they suspect an AFIS problem.
- TPU will notify AFIS Site Engineer by email (necam@servicenowservices.com), of any problems they are notified about, with follow-up messages to Metro IT of the problem.
- AFIS Site Engineer will notify TPU and DCSO if it is a problem requiring manual procedures, or other workarounds.
- AFIS Site Engineer will notify all entities of how long to wait to implement procedures and when the problem has been resolved.

7.3 PROCEDURE

7.3.1 DCSO/Booking and Juvenile Detention

- DCSO/Booking and Juvenile will ensure they keep a supply of FBI cards on hand for such emergencies.
- If there is a possible OCA number, it will be placed on the card as well as the arrest numbers.
- DCSO/Booking and Juvenile Detention will send hardcopy cards through the Metro mail to be scanned into NSW later, when the AFIS Livescan does not allow for the file to be stored and submitted electronically
- DCSO/JUV will submit prints electronically to TPU using the ID Request email (ID.Request@nashville.gov) for immediate results.
- DCSO and Juvenile Detention will finalize the arrests after TPU manually verifies the fingerprint record under the booking info tab in RMS.

7.3.2 Tenprint Unit

- TPU will immediately compare old records using master cards located in the file that can be found in the electronic archives system.
- This does not require verification unless the fingerprints are of poor quality. If the fingerprints are of poor quality, document the manual examination/comparison and verification per TPUPM guidelines
- Assuming the conclusion has a positive identification, the information will be updated in the arrest module in RMS.
- TPU will also send an email response to DCSO/JUV with the conclusion of each arrest. If the fingerprints are of poor quality a Tenprint Comparison Report will be attached as well as maintained in the casefile
- Old records will be scanned into NSW as time permits.
- New records will be assigned a new OCA by a technician and confirmed as new until the AFIS system is back in service.
- Once system functions have been restored, and a performance check has been completed, new records will be scanned into NSW to validate any prior conclusions determined by the technician
- All manual examinations/comparisons will be documented per TPUPM guidelines.

8 EXAMINATIONS, METHODOLOGY, and CONCLUSIONS

8.1 SCOPE: Describes procedure for conducting examinations using the ACE-V methodology and formulating conclusions.

8.2 POLICY

Friction ridge impression examinations are conducted using the Analysis, Comparison, Evaluation, and Verification (ACE-V) methodology, utilizing a qualitative and quantitative assessment of Level 1, Level 2, and Level 3 details.

The examination of friction ridge impressions and the resulting conclusions are based on ridge flow and ridge paths; the location, direction, and spatial relationships of minutiae; and ridge structure.

Application of ACE-V includes observations, measurements, assessments, decision making, and documentation, which are enabled by the education, training, skill, and experience of the technician.

ACE-V is not generally applied as a strictly linear process because it may include a return to any previous phase.

Numerous factors affect the qualitative and quantitative aspects of friction ridge impressions. A technician will be mindful of these factors while conducting examinations and that they influence friction ridge impression reproducibility. These factors may cause an apparent dissimilarity between impressions from the same source. Failure to properly assess the occurrence and influence of these factors could result in misinterpretation.

8.3 PROCEDURE

8.3.1 Analysis

Analysis is the qualitative/quantitative assessment of an impression to determine its workability, based on the observed presence and location of Level 1, 2, and 3 details.

If the impression does not support reliable findings for identity/individualization or of exclusion the examination will stop at the analysis phase and will be reported as no value for comparison.

No Value: the determination that a friction ridge impression contains insufficient quantity and quality of detail for comparison.

- Level 1: Includes the general ridge flow and pattern configuration. Level 1 detail is not sufficient for individualization but can be used for exclusion.
- Level 2: Includes ridge paths and formations defined as an ending ridge, bifurcation, dot, or combinations thereof. The relationship of Level 2 detail enables individualization.
- Level 3: Includes all dimensional attributes of a ridge, such as ridge path deviation, width, shape, pores, edge contour, incipient ridges, breaks, creases, scars, and other permanent details.

The assessment evaluates the quality of features (clarity of the observed features), the quantity of features (number of features and area), the specificity of features, and their relationships.

Quality is the assessment of the clarity of ridge features. Generally, as quality increases so does the discernibility and reliability of the ridge features. It is recognized that quality is not necessarily constant throughout an impression.

The level of quality determines the degree of tolerances or allowances for variation in appearance and spatial relationships of ridge features that will be used during the comparison process. High quality will lead to low tolerances and conversely low quality will require high tolerances.

For examinations, impressions are determined to be of value if Level 1, 2, and 3 details are sufficient to allow reliable findings of identity/individualization or of exclusion.

This approach is defined as Approach #1 in **SWGFAST Document #10, Standards for Examining Friction Ridge Impressions and Resulting Conclusions**.

Technicians will utilize the information provided in this document as a guide for determining the level of quality/quantity in an impression, which is described as follows:

- High: Level 1 is distinct; Level 2 details are distinct; there are abundant distinct Level 3 details.
- Medium: Level 1 is distinct; few to most of the Level 2 details are distinct; there are minimal distinct Level 3 details.
- Low: Level 1 may not be distinct; Most of the Level 2 details are indistinct; there are no distinct Level 3 details.

The analysis may also provide possible anatomical information to prioritize the potential corresponding areas and limit unnecessary comparisons.

8.3.2 Comparison

Comparison is the direct or side-by-side observation of friction ridge detail to determine whether the details in two impressions are in agreement or disagreement based upon similarity or dissimilarity, sequence, and spatial relationship, and within the tolerances of clarity and distortion.

If the Analysis phase provides indicators as to the probable anatomical area, a side-by-side comparison with the appropriate area of the known print is initially conducted. In the absence of indicators, all areas of available known impressions must be compared.

The extended analysis during the comparison phase may lead to a decision that impression information does not support reliable findings of identity or exclusion only and will be reported as no value for comparison.

8.3.3 Evaluation

Evaluation is the formulation of a conclusion based upon analysis and comparison of friction ridge impressions.

Once the examination progresses from the Comparison phase into the Evaluation phase, a determination is made as to whether the information is sufficient to form one of several conclusions or return to the Analysis phase and reassess value for comparison.

In the Evaluation phase, the technician will ultimately decide whether the unknown impression is from a different source or the same source as the compared impression or is inconclusive. Exam records will include legible copies of all known standards used in a comparison. Acceptable conclusions are defined below.

8.3.3.1 Identification

Identification is the decision by a technician that there are sufficient quality and quantity of features in agreement to conclude that two friction ridge impressions originated from the same source. Identification of an impression to one source is the decision that the likelihood the impression was made by another (different) source is so remote that it is considered as a practical impossibility.

8.3.3.2 Exclusion

Exclusion is the decision by a technician that there are sufficient quality and quantity features in disagreement to conclude that the two areas of friction ridge impressions did not originate from the same source. Exclusion of a subject can only be reached if all relevant comparable anatomical areas are represented and legible in the known exemplars. Additionally, the criteria listed below will be met to reach an exclusion decision.

- At least one target group of second level characteristics in the friction ridge impression must be present in analysis and used in a comparison. Target groups can be defined as two or more distinct ridge characteristics in proximity to observe relationship between the characteristics. The technician must attempt to define additional target groups if the corresponding area in the known exemplar is unclear.

- The impression must include the presence of an anchor/focal point. An anchor/focal point may include a delta, core, major crease, or distinctive ridge flow (such as a funnel area in the hypothenar of the palm) from which a clear and accurate ridge count or spatial relationship can be determined in respect to the target group(s).

8.3.3.3 Inconclusive

Inconclusive is the decision by a technician that there is neither sufficient agreement to identify, nor sufficient disagreement to exclude an impression of comparison value. The reason for each inconclusive conclusion must be documented and reported. (e.g., poor quality fingerprints and lack of Inconclusive conclusions do not apply to impressions determined to be of no value for comparison).

- **Inconclusive – Need Better Standards**
  Results when a decision of identification or exclusion cannot be reached, due to an absence of complete and legible known prints (e.g., poor quality fingerprints and lack of comparable areas). In such an instance, the inconclusive conclusion means that the impression needs to be re-examined and compared using clearly and completely recorded known impressions.

8.3.4 Verification

Verification is the independent application of the ACE process by a subsequent fully authorized technician, to either support or refute the conclusions of the original technician.

If immediate notifications are called for and are made prior to Technical Review and Administrative Reviews, any identified impression will be initialed and dated by the verifying technician as well as the original technician.

8.4 References

SWGFAST Document #9, Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V) in Tenprint Operations (Tenprint)

SWGFAST Document #10, Standards for Examining Friction Ridge Impressions and Resulting Conclusions (Latent/Tenprint)

Appendix A –DEMS Instructions, Exclusion Documentation

9 DOCUMENTATIONS, VERIFICATION and EXAMINATION RECORDS

9.1 SCOPE: Describes the documentation requirements for case files.

9.2 POLICY

Examination records will be recorded and maintained using unique case identifiers. The MNPD incident number is considered the primary case, however other agency numbers may be used as a reference (i.e., ME#, other agency number).

Known standards from Forensic Services Division are considered exam records and bear a unique identifying number (OCA – Originating Case Agency). Known standards from FBI/NGI are considered exam records and bear a unique identifying number (FBI). Standards from sources other than FSD files and FBI/NGI are considered evidence and are submitted in the same manner as evidence.

9.3 PROCEDURE

Examination records will include:

- Start and finish dates (start of analysis and release of report)
- Each examination activity conducted and sequence
- The results of the examination activities
- Initials (or electronic equivalent) and date of persons making a change on any record

Technician's documentation will be such that another qualified technician can determine what was done and interpret the data. Documentation will be made at the time of the examination and may be in the form of annotated images, narratives, worksheets, annotated legible copies, sketches, Automated Fingerprint Identification System (AFIS) or electronic records, or any combination of these methods. This documentation will be a part of the case record.

A case record consists of the administrative and technical records, whether hard copy or electronic, pertaining to a particular case.

The case record may include digital images, printed photographs, chain of custody records, exemplars, case notes, requests, and reports. Exam notes will indicate which impressions were analyzed, compared, evaluated and conclusions reached.

Observations made during the Comparison and Evaluation phases will be documented on the Tenprint Examination Worksheet and Verification.

During the Comparison phase, technicians must also:

- Conduct analysis of the known exemplars, noting any deficiencies
- Acquire known standards into the DEMS
- The DEMS records should include the electronic signature of the acquiring technician
- Document observations of agreement and/or disagreement in comparison exemplars, as required

When an identification decision results in the Evaluation phase, documentation in the form of comparison images will be stored in the Digital Evidence Management System (DEMS) case file. All significant features should be marked on the comparison images in an appropriate manner to allow another technician to clearly distinguish the features relied upon during comparison. Any significant differences in features observed during analysis and those relied upon during comparison and providing the basis for a conclusion will be noted in the Tenprint Examination Worksheet and Verification notes or documented in DEMS.

At the completion of examination, a DRAFT Tenprint Comparison Report will be created. The completed case file is then submitted for verification.

Note: If the MNPD Form 133 contains multiple comparison requests, a Tenprint Examination and Verification Worksheet and Fingerprint Comparison Report is required for each individual comparison.

9.3.1 Verification

Verification will be conducted on all casework related to MNPD Form 133 Requests with a conclusion of identification, inconclusive, or exclusion, and documented on the Tenprint Examination and Verification Worksheet. A "no hit" conclusion does not require a verification. However, it will be notated on the Tenprint Examination and Verification worksheet and included in the casefile folder.

At minimum, the workable case file submitted to verification will include:

• Tenprint Examination and Verification Worksheet

• All exemplars used for comparison (known and unknown)

• Acquired images in DEMS

A subsequent technician employs the independent application of the ACE procedure to either substantiate or oppose the findings of the initial technician. This is accomplished by reviewing the documentation in DEMS to verify markings, all hardcopies associated, and notes related to the case. Notes will indicate which impressions were analyzed, compared, evaluated and conclusions reached. The verifying technician or supervisor will indicate verification of the identification, exclusion, and/or inconclusive decisions by initialing the digital assets in the descriptive area in DEMS. The technician will also sign and date on the Tenprint Examination and Verification Worksheet. The verifying technician or supervisor will document verifications of identification decisions on the hardcopy exemplars by initialing and dating.

*Blind verifications are not conducted within the Tenprint unit and therefore not a part of casework.

The verifying technician or supervisor will save the completed Tenprint Examination and Verification Worksheet in the proper location on the Crime Lab(L:)> Crime Lab Network Drive>Tenprint.

Following Verification, the completed electronic case file submitted for Technical/Administrative Review will include:

- All Exam Worksheet(s)
- All evidence

- All known exemplars/reference material
- All communications (emails) related to case
- All Requests for Service, MNPD Form 133
- DRAFT Tenprint Comparison Report

9.3.2 DEMS (Digital Evidence Management System) Exam Records

In addition to notes on original evidence (exemplars), DEMS is a primary repository of all comparison exam records for the TPU. These records are captured in DEMS as evidence received and examined. The records include, but are not limited to:

- ACE-V observations
- Analysis of impressions
- Comparisons which resulted in identifications, exclusions, or inconclusive decisions
- Chain of custody

Tenprint impressions captured for documentation and analysis will be captured at no less than 500ppi. The quality of the impression may require capture at a higher resolution. Justification of less than 500ppi will be documented on a case-by-case basis. (e.g., the only available image was captured at a less than 500ppi)

Captured impressions will be saved to the DEMS prior to being subjected to any enhancement techniques. Any enhancements to the image will be saved as a new file**.** The DEMS records all processing steps. See Appendix A: DEMS Instructions

10 IDENTIFICATIONS – DOCUMENTATION and NOTIFICATIONS

10.1 SCOPE: Describes additional documentation and notification requirements associated with findings of identity.

10.2 POLICY

Comparison documentation will be initialed and dated on the known and submitted exemplars used for casework. All writings will be with permanent ink or Photoshop tool annotations.

A legible reproduction of the identified known exemplars will be retained as part of the case record.

10.3 PROCEDURE

Proper documentation on the known exemplars includes:

- The “ident” symbol adjacent to each identified impression
- The fingerprint number (or hand/foot area) of the known exemplar
- The OCA number (or other unique identifying number) of the known exemplar
- The initials of the technician
- The date of the identification
- The incident number associated with the known exemplar(s); to be placed in the top portion of the known exemplar

Prior to any notifications of identity, a second technician or the supervisor will verify, initial, and date the identification documentation.

11 Evidence Processing and Storage

11.1 SCOPE: Outline the steps taken by the TPU upon receiving physical hardcopy evidence and how it is stored following examinations.

11.2 POLICY

All hardcopy evidence received by a technician must be sealed in an envelope, dated, and signed by the submitter.

11.3 PROCEDURE

- Upon receipt, the technician will verify that the evidence is in a secured envelope, the date of receival is visible, and a signature is on the envelope
- MNPD Form 133 will be completed if it is not included.
- The receiving technician will enter all information associated with the evidence onto the evidence log, which initiates the chain of custody.
- Evidence will be transferred to the designated technician for processing. DEMS will reflect the chain of custody.
- A Technician will complete the requests according to Examination and Verification procedures; See: Examinations and Verifications
- All reports, communication, and documentation will be saved in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

Citations or Arrest reports used for examinations will be considered as reference materials and not evidence. At the conclusion of the examination, citations or arrest reports obtained from the Records Division will be kept in the TPU file room, sent back to the Records Division, or sent back to the requester, whichever is most appropriate.

12 Chain of Custody

12.1 Policy

Chain of custody for all evidence will be maintained in DEMS. Although some evidence will be received as physical hardcopies, material will be scanned into DEMS by a technician.

12.2 Procedure

- The primary technician will create a casework folder on Crime Lab (L:) drive and generate all forms needed for the case.
- The evidence log for the case will be maintained in the folder to track chain of custody.
- The primary technician will enter all evidence into DEMS using the incident number corresponding to the evidence.
- The document or documents containing the prints that were examined will be transferred from the primary technician to the verifying technician. Also provided to the verifying technician is the Tenprint Examination and Verification Worksheet.
- The Tenprint Examination and Verification Worksheet and the associated document will be returned to the primary technician once the verification process is finished. Subsequent to completing a DRAFT of the Tenprint Comparison Report, the technician will forward the case for administrative and technical review.
- Any revisions to case documents that occur after the case has been assigned for technical review must be properly documented on the respective worksheet. The reviewer shall notify the technician and supervisor via email. This email should specify what form/s need attention and the case number. A note should be added to the technical review worksheet in the proper section, and the technician making the correction shall date and sign the form. Casework errors are also recorded in the error log, which can be found in the Tenprint folder on the Crime Lab (L:) drive.

13 CONSULTATIONS

13.1 SCOPE: Defines circumstances, procedures, and requirements for documentation related to a consultation.

13.2 POLICY

Consultation is a "significant" interaction between technicians regarding the impression(s) in question. An interaction is considered significant when the dialogue may influence the overall conclusion of the original technician.

- Examples of a significant interaction include, but are not limited to:
  - Value determinations during the analysis phase
  - Discussion of distortion or pressure
  - Presence and/or absence of level 2 and level 3 detail
  - Comparison of the submitted prints and known prints
- Discussion concerning anatomical position, pattern types, AFIS parameters, etc. are NOT considered a consultation.

Consultations are supported as a positive component of the scientific process and may occur at any stage of ACE-V.

Consultations may result in recognition of differences of determinations or conclusions and are also used as part of the process to address such differences.

13.3 PROCEDURE

13.3.1 Documentation of Consultations

1) Consultation and verification are considered separate functions.

2) Consultations will be documented on the Tenprint Consultation Worksheet. The purpose of documenting is to record information or guidance obtained because of the conclusion. Upon completion, the worksheet will be saved in the case file.

3) Documentation of the consultation will include:
   a. Incident # and/or Case # associated with impression
   b. Specific friction ridge impression(s) reviewed (e.g., unique identifier, specific exemplar/impressions)
   c. Nature and result of the consultation (e.g., reviewed impressions)
   d. Initials and date of the consulting technician on the original technician's Tenprint Consultation Worksheet to acknowledge the consultation.

The documentation of the consultation will include whether the consultation was performed in the presence of the original technician, since there will be no electronic chain of custody documented in DEMS.

4) The consulting technician should not serve as the verifying technician. A consulting technician may be required to also serve as the verifying technician should no other technicians be available to perform verifications.

The Tenprint Consultation Worksheet will be saved in the proper location on the Crime Lab(L:)> Crime Lab Network Drive>Tenprint.

13.4 References

Document Examination Standard #19 Terminology of Friction Ridge Examination (Latent/Tenprint) Ver. 4.1

SWGFAST Document #21 Standard for Consultation (Latent/Tenprint)

14 DIFFERENCES in FINDINGS

14.1 SCOPE: Describes the procedure for resolving differences and reporting findings.

14.2 POLICY

The verification and review process may occasionally result in differing of opinions between the original technician and the verifying technician. To maintain quality standards, resolution of these differences will be clearly documented in the case file.

14.3 PROCEDURE

If there is a difference of opinion in the verification process a consultation may occur between the technician and the verifying technician. If this does not resolve the difference, additional examinations may be conducted by different technicians.

There may be differences due to technician tolerances of variations in the impression. If this can't be resolved after additional examinations, the most conservative decision will be reported.

All technicians will clearly document their decisions at each stage of the process including initials and date. The details and resolution will clearly be documented on the Tenprint Examination Worksheet and Verification notes section.

If a new worksheet is produced, the original will be maintained as part of the case file.

If images of analysis, comparison, or evaluation are requested by the any of the technicians involved, they will be included in the case file (DEMS).

If the difference is attributed to what appears to be a technician error, the Supervisor will initiate a review.

15 PROCEDURAL DEVIATIONS

15.1 SCOPE: Describes the process by which procedural deviations are processed and documented.

15.2 POLICY

Documentation of any procedural deviations will be made by completion of the Deviation Request QMS Workflow. Deviations will be reviewed by the Supervisor or designee *prior* to being implemented unless there are extenuating circumstances (see MNPD Quality Manual 7.2.17 (I))

15.3 PROCEDURE

- The need for procedural deviations may be identified and will be reviewed and approved by the Supervisor, or designee, prior to implementation.
- The Supervisor, or designee, will be notified of procedural deviations discovered during casework, and/or technical and administrative reviews.
- The Supervisor (or designee) is responsible for determining whether a procedural deviation has occurred.
- If it is determined that a procedural deviation has occurred, the Supervisor (or designee) is responsible for documenting the deviation and completing a QMS Workflow.
- Deviations will be documented in the case file.

16 TECHNICAL and ADMINISTRATIVE REVIEW

16.1 SCOPE: Describes the responsibilities of Technical Reviewer and Administrative Reviewer and how reviews are documented.

16.2 POLICY

Technical Review (TR) and Administrative Reviews (AR) will be conducted on 100% of manual comparisons. This includes email communication from ME's office (deceased), email communication from the Courts, email communication from the Warrants Division, and any additional requests that are reported on the Fingerprint Comparison Report. The TR/AR should be different individuals, when staffing allows.

Technical and Administrative Review of the Fingerprint Comparison Report decisions will be conducted in accordance with the MNPD CL Quality Manual and is documented on Technical and Administrative Review Checklist.

16.3 PROCEDURE

Reviews will ensure that all exam records are uniquely identified, grammatically correct, and the Social Security number is not reported.

Any discrepancies are noted on the Technical and Administrative Review Checklist, recording the responses and signature (physical or electronic) of the reporting technician.

When all discrepancies are noted and corrected, Technical and Administrative Reviewer will sign and date (physically or by digital signature) the checklist. The checklist will be saved in the proper location on the Crime Lab(L:)> Crime Lab Network Drive>Tenprint

16.4 References

SWGFAST Glossary

17 REPORTING

17.1 SCOPE: Describes the procedures for reporting conclusions.

17.2 POLICY

Interpretations and opinions that result from MNPD Form 133 are reported onthe Tenprint Comparison Report. The results will be reported accurately, clearly, unambiguously, and objectively.

17.3 PROCEDURE

Interpretations and opinions that result from MNPD Form 133, email request from the Office of the Medical Examiner, Courts, and Warrant Division are reported onthe Tenprint Comparison Report.

The Tenprint Comparison Report will be specific to subject(s) that was/were compared via the MNPD Form 133.

When comparative examinations result in the exclusion of an individual the report will clearly communicate the exclusion.

When there is an inconclusive conclusion, the report will clearly communicate the reason(s).

Release of test results are made at the conclusion of Technical and Administrative Reviews and according to the Crime Lab Quality Manual.

The Tenprint Comparison Report will be saved in the proper location on the Crime Lab(L:)>Crime Lab Network Drive>Tenprint

17.4 References

SWGFAST Document #5, Standard for Reporting Friction Ridge Examinations (Latent /Tenprint)

18 QUALITY PROGRAM

18.1 SCOPE: Describes procedures for assuring the quality of test results. Defines nonconforming work encountered in analyzing and comparing friction ridge impressions and responsibilities for documenting and correcting errors.

18.2 POLICY

In addition to the quality assurance measures of the MNPD Crime Laboratory, the TPU employs several measures to ensure the quality of test results.

18.3 PROCEDURE

18.3.1 Reviews of Comparisons and Official Reports

Fingerprint Comparison Reports are reviewed for accuracy as follows:

18.3.1.1 Verification of conclusions and Technical Review (TR)

- The Verifier is responsible for determining that all decisions are supported by exam records per TPUPM. After completion, they will sign the Tenprint Examination Worksheet and Verification.
- The Technical Reviewer is responsible for ensuring all appropriate exams have been conducted, conclusions verified, and all properly documented per TPUPM. After completion, they will sign the Tenprint Technical and Administrative Review Checklist.

18.3.1.2 Administrative Review (AR)

- Technicians or the Supervisor review Fingerprint Comparison Reports and documentation for clerical and grammatical accuracy. After completion, they will sign the Tenprint Technical and Administrative Checklist.
- The Fingerprint Comparison Report is released upon completion of all reviews.

18.3.2 Quality Spot Checks

A quality spot check may be performed on casework that has been completed. If errors are discovered, where appropriate, an amended report will be uploaded to the casefile and issued to the customer. Any errors that do not require an amended report will be recorded in the casework error log. A QSN workflow will be filed for all errors discovered whether they require an amended report or not. The unit supervisor or any other trained technician may be randomly assigned these checks. The technician will correct any errors that do not need an amended report and record them in the casework error log. Once the process for casework errors is followed, the supervisor should be notified via email.

18.3.3 Quality System Notifications

Information concerning incidents, procedures, issues, or equipment that may impact the quality of test results is recorded using the QMS Workflow and in accordance with the Crime Lab Quality Manual. The TPU supervisor tracks casework errors in a log stored on the L-Drive, and this information may be used to support a reported quality system notification.

18.3.4 General Errors

The results of fingerprint comparisons have direct bearing on arrest processing, investigations of deceased persons, matters of identity fraud, and additional requests from the judicial system. Errors may be discovered as technicians review the work during verification, technical, and administrative reviews of examinations.

18.3.5 Fingerprint Processing Errors

- Erroneous identification- a technician erroneously identifies two separate fingerprint records as belonging to the same individual.
- Missed identification- a technician fails to correctly identify two fingerprint records as belonging to the same individual.

An error discovered at verification or technical review is considered as the work of the reporting technician.

Verified erroneous conclusions are considered as errors on the part of the technician ***and*** the verifier.

Clerical errors are not considered erroneous conclusions if other case records document the correct conclusion.

There may be circumstances in which technicians' differences in opinions are variances in tolerance or interpretation of impression data. This is not considered non-conforming work/errors.

18.3.6 Revisions to Case Documents

Procedure:

- Alterations/amendments must be tracked and maintained within the casefile
- The technician making corrections shall strike through incorrect information, initial, date, and include the revisions on the original. This will be saved in the casefile folder.
- The technician may create a revised worksheet, if corrections are needed, but the original must be maintained and labeled "Do Not Use".

19 Reconciliation of Completed Records

19.1 Scope

To describe reconciliation of completed records which are discovered by completing database maintenance.

19.2 Policy

TPU Supervisor will run a report in RMS to investigate all duplicate records. This search is completed by setting specific parameters to populate for adult and juvenile records. A MNPD Form 133 is not needed for this request. However, a comparison of the duplicate records will be performed if two or more OCA's are in question.

19.3 PROCEDURE

- Technicians will perform a quality check and identify any incorrect demographic information using the MNPD RMS
- Any reference materials will be retrieved from the AFIS archives database or Tenprint file room and perform a comparison of the records, per TPUPM guidelines
- If an identification is made the information will be forwarded to TPU Supervisor or other authorized personnel to consolidate records in RMS
- DCSO will be notified via email of information to be updated in CJIS
- Documentation will be stored on the Crime Lab L: drive

  *For capturing in DEMS, TPU technicians will generate an incident number for each consolidation request. A log of the generated numbers will be stored on the Crime Lab L:drive>Tenprint>Incident Log

20 Performance Check of AFIS

20.1 Scope

To describe and define the process by which it is ensured that the Automated Fingerprint Identification System (AFIS) performs as expected. To communicate processes in maintaining the reliability of AFIS equipment and its performances.

20.2 Policy

AFIS is a system operated by the Metro Nashville Police Department (MNPD). The AFIS equipment and all scanners are under the ultimate control of MNPD. As a part of their management of the system, MNPD contracts with NEC to provide maintenance and performance monitoring. The AFIS system is monitored by the system vendors to ensure accuracy and quality of the equipment's performance.

20.3 Procedure

TPU will perform equipment checks internally to ensure systems functions.

- Once a month a technician will use a "known" source to be entered into AFIS
- After entry a "hit" should be returned. The expected "hit" is verification that AFIS is functioning properly at the internal level
- If a "no hit" is returned the technician will investigate why there was a "no hit" and take appropriate actions.
- Should it be determined that AFIS is not functioning properly (i.e., record not returning, candidate falls below threshold, etc.) the NEC vendor will be contacted.
- Signage will be placed on the equipment reflecting that it is out of service.
- The return to service of a workstation is contingent upon its performance demonstrating proper operation.

APPENDIX A DEMS INSTRUCTIONS

Acquiring

- All known standards used for comparison must be captured/scanned in DEMS (Adams Web)
- Use Professional mode- reflective- document table- photo-600 or 1000 resolution if scanning documents use 300 resolution
- Uncheck all Adjustments (such as Unsharp mask)
- Preview- place/adjust box around item to scan- SCAN
- Scan again if doing multiple Acquires- otherwise, Complete
- Open ADAMS Web and go to the Acquire function
- Enter the incident # and confirm the incident #
- Check that acquiring as INCIDENT (not CASE) and Contributing agency is MNPD
- Select Crime Type
- Select Category
- Use of "unknown" as a crime category is acceptable
- Select files to be acquired
- Start upload

At completion of capture

- Go to incident folder view
- Select individual asset
- Update the Description field for each asset by selecting the Edit option
    - Update the description field for each item (Descriptions will include unique numbers, such as FPs of 123456, ME office # of deceased prints.
    - Descriptions should also indicate the purpose of the image, such as Analysis or comparison
- Save changes to the asset by selecting OK
- Refresh page to see the changes

Documenting analysis and comparison

Move items to Photoshop processing

- Select assets/items for Photoshop processing (multi-select)
- Choose PROCESS option and make appropriate selection (example: Process in Photoshop as TIF; this will direct your images to Photoshop)

Size Items

- If working with both comparison images in Photoshop, there will be two images open on the tool bar.
- On each image:
    - Crop
    - Window- Arrange- Tile
    - Adjust percentage at bottom left of each image, as needed, so that both are close to the same percentage.

Annotate images- Level two detail should be marked using Brush tool as:

- Blue markings: confident detail
- Yellow markings: cautious detail
- Red markings: agreement in both images
- Additional markings of observations should be described in the notes section

If an identification is documented with non-mated blue marks, an explanation should be given in the case notes (worksheet or DEMS Notes related to the comparison image)

Photoshop tools for processing:

- Brightness/Contrast
- Levels
- Curves
- Black/White
- Invert
- Shadows/Highlights
- Crop & Zoom

Document comparison with two separate images

- Mark Level Two details as described above
- Click on each image- File- Save- Okay- Okay

Document comparison with one image/ side-by-side impressions

- Bring both images/impressions into Photoshop and crop them.
- Highlight (select) one of the images on tool bar
- Go to Window-Arrange Tile
- Make images 100% (or similar size)
- Choose move tool
- Drag one image to approximate same area on the other image (a small envelope should appear as you drag the image)
- Close image- Do not save changes
- There will be two layers; rename layers by double clicking on the text to the right of image. Delete/hide previous text layers as needed.
- Go to Image- Canvas- Adjust canvas size appropriately in inches
- Click on specific layer (of one image) to move images side by side
- Crop two images together
- Mark Level Two details as described above (must be on layer one or top layer to chart both images)
- File- Save (as a single image)

When all documentation is completed, closing images returns to DEMS.

There will be the option to replace or new (only if changes were made to the image)

In DEMS Assets View

- Click on RETURN
- New images will appear at end of row
- Add a description to the new images (e.g., Comparison)

Documentation of exclusion

When documenting an exclusion, technician may use separate layers or images in Photoshop. Exclusion images should be documented in DEMS.

Creating an Exclusion Image

Mark target groups in one of the impressions

- Target groups can be defined as 2 or 3 minutiae
- Use original analysis image
- Minutiae use should be of high confidence
- Define two separate target areas in each image (circle target groups using different colors)

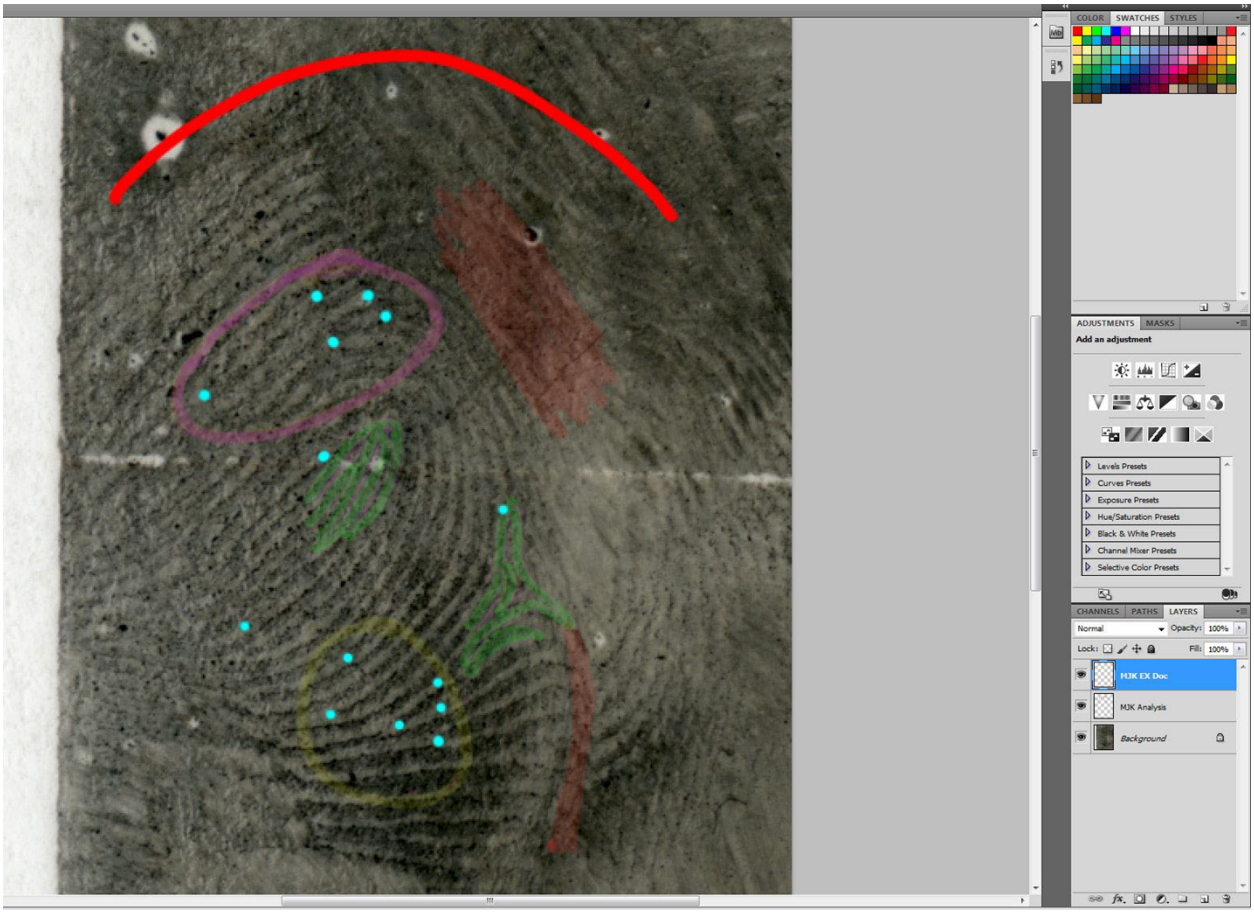
Mark Anchor/Focal Points

- Anchor points are deltas, cores, major crease, or distinctive ridge flow from which clear accurate ridge count or spatial relationship can be determined in respect to the target groups.
- Trace the anchor areas for comparison using a low opacity

Creating an Exclusion Image (second impression)

- Documentation must clearly indicate what areas were compared to the second impression.
- Circle or shade the area compared using the same corresponding color as the circled target group(s) in the first impression (where you would expect your target group to be in the second impression)
- The second impression should be marked in an appropriate manner to allow another Technician to clearly distinguish the significant differences in features relied upon during comparison.

The detailed analysis of the impression may be documented similarly to the sample image below:



Blue marks- high confidence; Yellow marks- cautious (when applicable); Red shading may be used for any cautious areas of distortion. Two colors used to circle the target groups. Green tracing (low opacity) used for the anchor areas.