Quality Assurance Manual

A2LA ISO/IEC 17020:2012(E)

Escondido Police Department
Forensic Services Unit

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0. INTRODUCTION

Mission Statement and Goal

To provide dependable, impartial, and quality forensic services to the Escondido Police Department in a timely manner.

Objectives

- To accurately document crime scenes and collect evidence for fingerprint processing.
- To use reliable and validated methods.
- To provide accurate and traceable results.
- To provide relevant, professional, and impartial testimony.
- To ensure all specialists are competent and are provided continuing education and training.
- To demonstrate through appropriate documentation that the quality assurance program is operating as intended.
- To keep abreast of forensic related topics and research new ideas and techniques to enhance the forensic capabilities of the unit.
- To maintain good working relationships in the field both internally and externally.

The Escondido Police Department Forensic Services Unit (FSU) quality system, represented by the Quality Assurance Manual (QAM) and the representative Technical Procedure manuals, provides a mechanism for identifying and implementing the practices that support excellent performance. All members of FSU are responsible for the incorporation of quality practices and procedures consistent with the requirements of the quality system into daily unit functions.

All members of FSU share in the responsibility for adherence to the established quality measures as well as the overall success of the quality program.

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1. SCOPE

International Standard 17020:2012 states the requirements for the competence of bodies conducting inspections and for the impartiality and consistency of their inspection activities. The international standard has been amplified by A2LA in their Document *C318 – Specific Checklist: Forensic Examination Accreditation Program – Inspection*.

For the purpose of this program, "forensic inspection" is defined as the examination of an item or location, and on the basis of professional judgment, the determination of conformity with proposed events or known conditions.

When using the International Organization for Standardization/International Electrotechnical Commission International Standard (ISO/IEC) 17020 standard with Document *C318*, the terms "inspector" and "inspection" are equivalent to "specialist" and "examination" respectively.

Testing activities conducted by Forensic Services fall into the category of *functional testing.* Functional activities, such as the comparison of a latent print recovered from a crime scene with a known print, is part of the normal activities of Forensic Services and is therefore within the scope of ISO/IEC 17020.

The purpose of the Escondido Police Department (EPD) Forensic Services Unit's (FSU) quality management system is to ensure quality forensic services are provided to the Escondido Police Department within the Crime Scene Investigation and Latent Print disciplines. This quality assurance manual contains or references the policies, practices and procedures of the FSU's quality system that ensure technical competence and valid forensic examination results. The Quality Assurance Manual (QAM) and the Technical Procedure Manuals of each discipline facilitate meeting the ISO/IEC 17020:2012 requirements.

The QAM and technical procedure manuals also facilitate internal and external audits of the quality system to evaluate Escondido Police Department's conformance with requirements of the ISO/IEC 17020 International Standards for the Competence of bodies performing inspections, and for the impartiality and consistency of their inspection activities [ISO/IEC 17020:2012(E)]. The A2LA Supplemental Requirements for the Forensic Examination Accreditation Program are also incorporated in the QAM and technical procedure manuals.

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2. NORMATIVE REFERENCES

- ISO/IEC 17020, International Standard; Conformity Assessment-Requirements for the operation of various types of bodies performing inspection
- MA 3012, A2LA ISO/IEC 17020 Accreditation Requirements for Forensic Inspection Bodies
- EA-5/03 M:2008, Guidance for the Implementation of ISO/IEC 17020 in the field of crime scene investigation
- ILAC-G19:08/2014, Modules in a Forensic Science Process
- ILAC-P15:07/2016, Application of ISO/IEC 17020:2012 for the Accreditation of Inspection Bodies
- Escondido Police Department Department Instructions
- Escondido Police Department Forensic Services Crime Scene Technical Procedure Manual
- Escondido Police Department Forensic Services Latent Print Analysis Technical Procedure Manual
- Escondido Police Department Forensic Services Latent Print Development Technical Procedure Manual
- Escondido Police Department Forensic Services Safety Manual
- Escondido Police Department Training Technical Procedure Manual
- The Organization of Scientific Area Committees for Forensic Science (OSAC) https://www.nist.gov/topics/forensic-science/organization-scientific-area-committees-osac

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3. TERMS AND DEFINITIONS

AAS: *Automated Archive System - California DOJ's archival, storage and retrieval system for finger and palm prints obtained from tenprint forms.*

Accountability: *The quality of subordinate workers by which they are responsible for their own work and answerable to a superior.*

Accreditation: *A process by which an authoritative body, such as A2LA, gives formal recognition that an entity is competent to carry out specific tasks.*

ACE-V: *The acronym for a scientific method; Analysis, Comparison, Evaluation and Verification (see individual terms).*

Adequate: *The principle of being sufficient for a specific requirement.*

Administrative documentation: *All case related documents that are not examination documentation, such as chain of custody records, service request documentation, correspondence received/sent, and other pertinent information.*

Administrative error: *A clerical error, such as a typographical error, that may occur in an examination report or in the preparation of a proficiency test.*

Administrative personnel: *Staff who provide administrative/clerical support.*

Administrative review: *An evaluation of the report and supporting documentation for consistency with organization policies and for editorial correctness.*

Administrative reviewer: *The Unit Supervisor, Technical Leader or qualified designee who conducts an administrative review.*

AFIS: *The acronym for Automated Fingerprint Identification Systems. A generic term for a fingerprint matching, storage, and retrieval system. Reference in general terms to the many computerized systems available throughout the world, for the rapid storage, search and retrieval of finger and/or palm prints. The term is generic for all fingerprint/palm print searching and is conventionally divided into two parts: a) All ten fingerprints and palm prints are involved in the searching process; b) Only one partial area of friction ridge detail is searched. Noteworthy, is that under careful quality control some AFIS system are allowed to "identify" (see Lights Out) a person arrested ("search" print, referred to as arrest ten-prints) to a known person data base ("file" prints) for the purpose of maintaining criminal histories. It is important to note that when an unknown partial area of friction ridge detail (the 'search' print) is computer-searched against a database of known prints (the 'file' print) the AFIS system produces a list of possible candidates for further evaluation by a suitably qualified expert. The AFIS system* ***does not identify*** *finger or palm prints. AFIS systems currently in use at Escondido Police Department include a local AFIS, California DOJ AFIS and the FBI's IAFIS (see definitions).*

A2LA: *An accreditation body in which any forensic service unit may participate to demonstrate that its management, technical operations and overall quality management system meet ISO 17020:2012(E) requirements and A2LA Supplemental Requirements.*

Analysis: *The first step of the Ace-V method. The assessment of an impression to determine suitability for comparison.*

Analytical/Interpretative error: *An error in the examination process that produces an incorrect result or conclusion.*

Appeal: *Request by the provider of the item of inspection to the inspection body for reconsideration by that body for a decision it has made relating to that item.*

Approved Test Provider: *A proficiency test provider that has complied with the test manufacturing guidelines established by the A2LA Guidelines or is 17043 accredited.*

Artifact: *Any distortion or alteration not in the original friction ridge impression, produced by an external agent or action. Any information not present in the original object or image, inadvertently introduced by image capture, processing, compressions, transmission, display, or printing.*

Audit: *A review conducted to compare the various aspects of the laboratory's quality system with criteria for that performance.*

Auditor: *A person who conducts audits.*

Authority: *The power to influence, or command thought, opinion and behavior.*

Basis for Identification: *Statement of Basis for Identification – "The unknown and known fingerprint impressions were compared. This was accomplished by placing the unknown and known fingerprint impressions side by side, and referring backwards and forwards between them. When available, I compared pattern type and ridge flow, friction ridge characteristics, their relative positions to each other and the number of intervening ridges between those characteristics. The comparison process was carried out in a systematic and sequential manner. The methodology applied is otherwise known as ACE-V: Analysis, Comparison, Evaluation, Verification. Opinions of identity are based wholly or substantially on my specialized knowledge."*

Bias: *There are three types of bias a specialist may encounter:*

- ***Cognitive Bias:*** *The effect of perceptual or mental processes on the reliability and validity of one's observations and conclusions.*
- ***Confirmation Bias:*** *The tendency to search for data or interpret information in a manner that supports one's preconceptions.*
- ***Contextual Bias:*** *The effect of information or outside influences on the evaluation and interpretation of data.*

Bifurcation: *The point at which one friction ridge divides into two friction ridges.*

Blind sample: *A proficiency test sample for which the analyst is unaware of the test nature of the sample at the time of analysis.*

Blind Verification: *(See Verification definition). Blind verification is a quality assurance measure which can be employed in certain circumstances in which the verifier or blind verifier is provided with limited or no contextual information and has no knowledge of the conclusions of the previous specialist. The aim of the blind verification is to test reproducibility of the conclusions made at the various steps of the examination (ACE-V) whilst minimizing the influences of any contextual information that may lead to an inaccurate conclusion. The independent examination of one or more friction ridge impressions at any stage of the ACE process by another competent technician who is provided with no, or limited, contextual information, and has no expectation or knowledge of the determinations or conclusions of the original technician.*

Calibration: *The adjusting or standardizing of any instrument and/or equipment to ensure agreement with a reference standard or working standard of known value.*

Cal-ID: *The California Identification program; is a term specified in California state law as the program for each individual county dedicated to the identification (via fingerprints) of all arrestees within the state of California. Local jurisdictions utilize the criminal arrest function as well as the automated searching of latent prints for identification purposes, as specified by each jurisdiction's Memorandum of Understanding (MOU).*

Case documentation: *All administrative and examination documentation for a given case.*

Case / Report Identification Number: *A unique numeric identifier that is assigned to an EPD case submission.*

Case record: *Files containing administrative and examination documentation generated or received by a laboratory pertaining to a particular case.*

Casework: *Activities concerning the examination of evidence and/or crime scenes.*

Certified reference material: *Reference material accompanied by a certificate, whose property values are certified by a procedure, which establishes its traceability to an accurate realization of the units in which the property values are expressed and for which each certified value is accompanied by an uncertainty at a stated level of confidence.*

Characteristics: *Any appendage, joining, interruption or ending of a friction ridge. The term includes short ridges, subsidiary ridges and dots. The terms: points, minutiae, Galton details and ridge details are synonymous. Distinctive details of the friction ridges, including Level 1, 2, and 3 details (also known as features).*

Chain of custody*: Chain of custody is the chronological documentation of the collection, transfer, analysis and disposition of evidence in a case.*

Chain-of-custody log: *A form used to document all transfers of evidence.*

CII Number: *Criminal Investigation and Identification Number. This is a unique number assigned to a person whose prints are contained within the California state Automated Archive System database.*

Clarity: *Visual quality of a friction ridge impression.*

Class Characteristics: *Characteristics used to put things into groups or classes (e.g., arches, loops, whorls).*

Customer: *An entity, such as a detective or investigator from a law enforcement agency requesting the agency to handle all or a specific part of the crime scene investigation or comparisons of friction ridge detail.*

Comparison*: The second step of the ACE-V method. The observation of two or more impressions to determine the existence of discrepancies, dissimilarities, or similarities. The act of comparing one friction ridge skin impression with another to establish whether or not the same area of friction ridge skin produced the two impressions. The analysis can be Ten Print to Ten Print, Ten Print to Latent Print or Latent Print to Latent Print. Generally, there is usually an unknown sample being analyzed against a known sample. The process is undertaken as indicated in the following:*

The two fingerprints must be the same pattern type (it is not necessary that the unknown print exhibits to what pattern type it belongs because it is not required that a complete pattern be shown to establish identity; however, from the identical flow of the ridges, and from the similarity in general shape and form of the visible ridges, it may be deduced that both are of the same pattern type).

A comparison of both prints must reveal that the ridge characteristics of both are of the same type, shape and face the same direction (qualitative factors)

A sufficient number of characteristics must be present in the area under comparison (quantitative factor). It is impossible to say definitively how many characteristics are needed to prove identity because it is essentially a determination that must be made by the specialist/expert on the basis of their specialized knowledge, training, skills and experience.

The same ridge characteristics found in both prints must be similarly interrelated, or must intervene in the same way. The number of ridges that intervene between two given characteristics in the latent print must be the same as in the known print.

Whilst comparing the two prints, the specialist/expert constantly searches for dissimilarities and takes into account any distortion factors

Note: When generalizing with the term "fingerprints", it relates to any area of friction ridge skin on the fingers, hands, soles of the feet, and toe surfaces.

Competency: *Possessing and demonstrating the requisite knowledge, skills, and abilities to successfully perform a specific task.*

Competency test: *The evaluation of a person's ability to perform work in a functional area prior to the performance of independent casework.*

Competent: *Possessing the requisite knowledge, skills and abilities to perform a job.*

Complaint: *Expression of dissatisfaction, other than appeal, by any person or organization to an inspection body, relating to the activities of that body, where a response is expected.*

Complete Friction Ridge Exemplars*: A systematic recording of all friction ridge detail appearing on the palmar sides of the hands. This includes the extreme sides of the palms, joints, tips, and sides of the fingers (also known as major case prints).*

Complex examinations*:* The encountering of uncommon circumstances during an examination (eg., the existence of high distortion, low quality or quantity, or the possibility of simultaneity).

Computer systems: *A complete, working computer to include any software and peripheral devices.*

Conclusion: *Determination made during the evaluation stage of ACE-V, including identification, inconclusive, exclusion.*

Condition adverse to quality: *An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items and nonconformity issues.*

Conflict: *A difference of determinations or conclusions that becomes apparent during, or at the end of, an examination.*

Consensus determination or conclusion: *Agreement reflecting the collective judgment of a group of technicians trained to competency when making determinations or conclusions with respect to one or more impressions.*

Consultation*: A significant interaction between specialists regarding one or more impressions in question.*

Contributor: *Escondido Police Department or other criminal justice agencies that submit evidence to the Forensic Services Unit.*

Control (control sample): *A sample analyzed in with experimental samples that is designed to demonstrate that a procedure worked correctly; a standard of comparison for verifying or checking the finding of an experiment. The test may be run before or in parallel with test items. A material of established origin that is used to evaluate the origin of a test or comparison.*

Controlled document: *A document that is tracked when issued and/or distributed in a trackable manner.*

Core: *The approximate innermost center of the fingerprint impression. A specific formation within a fingerprint pattern, defined by classification systems such as Henry.*

Corrective action: *The process by which a deficiency can be brought into conformity with a standard.*

Correspondence – *An observation of friction ridge details and other information in agreement in terms of their type, orientation, and relative spatial relationship to each other; an accumulation of similarities between two impressions resulting in an overall conformity or agreement.*

Court official: *An individual such as a prosecutor, defense attorney or judge who completes a testimony evaluation form.*

Court Statement: *A written report of the results and interpretations of forensic tests/examinations submitted to court. Such reports may be in a format prescribed in legislation.*

Crime scene: *An area, object or person, from which evidence is identified, documented, collected and/or interpreted; excluding said activities that routinely occur within the laboratory. Scene of an incident prior to establishing whether or not a crime or other action requiring investigation has taken place. Not solely restricted to the location of the incident, but also includes areas where relevant acts were carried out before and/or after the crime and/or the body of a suspected perpetrator.*

Crime scene personnel: *Individuals who handle the identification, documentation, collection and/or interpretation of material at a location external to the laboratory.*

Crime scene reconstruction: *The process of determining the nature of events that occurred at a scene from an evaluation of physical evidence and other relevant information.*

Critical reagent: *A reagent which requires special attention because of the impact of the reagent on the quality of testing. Failure of the reagent due to improper preparation or degradation would affect the testing process.*

Custody: *The care and control of an item implying responsibility for its protection and preservation.*

Customer: *The person, unit or division requesting the Forensic Services Unit to handle all or a specific part of a process. Also called a "detective".*

Deficiency: *An inadequacy; lacking in some necessary quality of an element. Deficiencies include, but are not limited to, missing or incomplete data, or incomplete reports.*

Delta: *A point on a ridge at or in front of and nearest the center of the divergence of ridges, may be a bifurcation, an abrupt ending ridge, a dot, a short ridge or a meeting of two ridges. Also known as a tri-radius.*

Derivative evidence: *Material derived from an item of evidence.*

Detail: *an area comprised of the combination of ridge flow, ridge characteristics, and ridge structure, as demonstrated and reproduced in an impression. Typically grouped as 1st level, 2nd level, and 3rd level.*

Deviation: *An authorized variance from a documented policy, practice, or procedure. A deviation can be major or minor depending on the circumstances. A change in friction ridge path. An alteration of departure from a documented policy or standard procedure.*

Digital evidence: *Information of probative value stored or transmitted in binary form.*

Directing: *The process of motivating, leading, guiding, stimulating, and activating people.*

Discipline: *A major area of casework for which a laboratory may seek accreditation.*

Discrepancy: *Being at variance or different from the accepted consensus. The presence of friction ridge detail in one impression that does not exist in the corresponding area of another impression (compare with dissimilarity).*

Dissimilarity: *A difference in appearance between two friction ridge impressions (compare with discrepancy).*

Dissociated ridges: *Disrupted friction ridges. An area of friction ridge units that did not form into friction ridges, generally due to a genetic abnormality.*

Distinction: *Something as being not the same and often treating as separate or different.*

Distortion: *Variances in the reproduction of friction skin caused by pressure, movement, force, and contact surface.*

DMV: *Department of Motor Vehicles.*

Document: *Information in any medium including, but not limited to, paper copy, computer disk or tape, audio or video tape, electronic file, compact or digital video disc, photograph, overhead, or photographic slide.*

Document control: *The process of ensuring that controlled documents prescribing quality-affecting activities or specifying quality requirements, including revisions, are reviewed for adequacy, approved for release by authorized personnel and distributed for use to the personnel conducting the prescribed activities.*

DOJ: *Department of Justice.*

Dot*: An isolated ridge unit whose length approximates its width in size.*

Edgeoscopy*: Study of the morphological characteristics of friction ridges. Contour or shape of the edges of friction ridges.*

Elasticity*: The ability of skin to recover from stretching, compression, or distortion.*

Elimination Prints: *Fingerprints obtained from person/s that are supplied voluntarily or received by means of the legislative processes, to eliminate investigators, innocent persons, victims or witnesses. These elimination samples can be used in any aspect of the forensic investigation process (i.e.) exhibits, crime scene. Exemplars of friction ridge skin detail of persons known to have had legitimate access to an object or location.*

Enclosure: *A single friction ridge that bifurcates and rejoins after a short course and continues as a single friction ridge.*

Ending ridge: *A single friction ridge that terminates within the friction ridge structure.*

Environmental conditions: *Any characteristic of the facilities that could reasonably be expected to impact the quality of the laboratory's work product.*

Erroneous exclusion: *The incorrect determination that two areas of friction ridge impressions did not originate from the same source.*

Erroneous identification: *The incorrect determination that two areas of friction ridge impressions originated from the same source.*

Error: *Inaccurate conclusion when measured against the ground truth or a stated criterion. For pattern evidence conclusions, this type of error can only be measured in research studies or ground truth testing. Inappropriate or deficient logic or reasoning to support a conclusion. For pattern evidence conclusions, the accuracy of a conclusion cannot be determined, only the appropriateness or acceptability of the conclusion. Inappropriate decision: an error in judgment in interpreting the weight of the data used to arrive at a conclusion (unaccepted tolerance levels), as determined by general consensus. A conclusion reached by a technician that contradicts the matching status of two impressions, and therefore is probably wrong (compare with non-consensus decision).*

Evaluation: *The third step of the ACE-V method wherein a technician assesses the value of the details observed during the analysis and the comparison steps and reaches a conclusion.*

Evidence or Exhibit: *An item submitted for examination(s). Item or sample recovered as part of an investigation, including everything recovered from a crime scene and derived items such as casts of footprints and friction ridge lifts. Also includes an item or sample examined by a forensic unit using the forensic process and can include tenprint exemplars.*

Examination: *An analysis of an item or comparison of items.*

Examination documentation*: Documents that support the results and/or conclusions presented in a laboratory report. Examples of documents include diagrams, printouts, photographs, observations, and results of examinations.*

Examiner (also referred to as Latent Print & Evidence Specialist or Specialist): *Person who conducts and/or directs the inspection of crime scenes or submitted items, examination of latent prints, tenprints, or friction ridge evidence, and conducts comparisons, interprets data, reaches conclusions, and/or testifies in court.*

Examiner (also referred to as Latent Print Specialist or Specialist): *Person who conducts and/or directs the examination (inspection) of latent prints, tenprints, or friction ridge evidence, and conducts comparisons, interprets data, reaches conclusions, and/or testifies in court. (This is conducted by both the Latent Print Specialist and the Latent Print & Evidence Specialist positions).*

Exclusion: *The finding by an expert that a fingerprint could not have originated from a source. This is an opinion expressed by an expert only when the quality and quantity of detail available in the unknown and the known prints allow for the absolute conclusion of excluding that person as the potential source.*

Exemplars: *The prints of an individual, associated with a known or claimed identity, and deliberately recorded electronically, by ink, or by another medium (also known as known prints). A specimen of physical evidence collected from a known origin.*

Expert: *An expert is generally defined as "a person who is skilled in a specific trade or occupation. Because of this particular knowledge, the expert is qualified to analyze or compare a stated set of facts and render an opinion based upon those facts". The expert's opinion is allowed because of his/her specialized knowledge of the subject, which had been gained through training, experience and skill. This knowledge is generally not possessed by the average layperson.*

The courts determine if an 'Expert Witness' is sufficiently qualified to give opinion evidence on a particular issue under consideration, according to the level of skill, knowledge and experience in the field. Definitions vary widely as to just what opinion evidence is and who can give opinion evidence. It is recommended that reference should be made to the many legal textbooks on the subject. Each case possesses its own unique factors.

External Proficiency Test: *A test provided and reviewed by a source external to the unit.*

FBI: *Federal Bureau of Investigation.*

Features: *Characteristics in friction ridge skin utilized to assess and quantify similarity or dissimilarity between two impressions. Typically grouped as 1st level, 2nd level, and 3rd level. Distinctive details of the friction ridges, including Level 1, 2, and 3 details (also known as characteristics).*

Finding: *A nonconformity identified during an audit with documented requirements.*

Fingerprint*: An impression of the intricate design of friction ridge skin found on the volar surface of a person's finger or thumb. The same type of friction skin can be found on the whole palmar surface of the hands and on the plantar surface of the feet in humans. There is no physical, physiological or biological difference between the friction skin on the fingers and that on the palms of the hands and the soles of the feet. The term 'fingerprint' is often loosely employed for any area of friction skin.*

Focal Points*: In classification, the core(s) and the delta(s) of a fingerprint. Another term for target group.*

Follow-up Action: *Action to eliminate the cause of a detected Level 2 non-conformity. This is documented on as a Follow-up Action on the Corrective Action Report.*

Forensic Agency: *Legal entity or a defined part of a legal entity that fulfills any part of the forensic process.*

Forensic Inspection: *Examination of a person, item, or location and on the basis of professional judgment. The determination of conformity with proposed events or known conditions on the basis of professional judgment.*

Forensic Process: *Gathering, evaluation, and assessment of all types of evidence using scientific procedures, as well as the location, documentation, and preservation of evidence.*

Forensic Science: *The examination of scenes of crime, recovery of evidence, examination of evidence, interpretation of findings and presentation of the conclusions reached for intelligence purposes of for use in court.*

Friction Ridge: *A raised portion of the epidermis on the palmar or plantar skin, consisting of one or more connected fridge units.*

Friction Ridge Characteristics: *Minute ridge endings, bifurcations, dots and other ridge details which must match in two impressions in order to establish that the impressions were made by the same finger; also called "identification points", "minutiae" and "Galton details". They are the ultimate proof of identity or non-identity.*

Friction Ridge Detail (morphology): *An area comprised of the combination or ridge flow, ridge characteristics, and ridge structure.*

Friction Ridge Unit: *A single section of ridge containing one pore.*

Furrows: *Valleys or depressions between the friction ridges.*

Fundamental Principles: *The fundamental principles upon which the Science of Fingerprint Identification is based are:*

- *The ridge patterns on the digits never change during the life of an individual, except for increasing in size due to natural growth; or permanent trauma resulting from injury to the underlying layer of skin (dermis). Any such significant trauma becomes a new permanent feature of the ridge pattern.*
- *The ridge patterns are so highly variable from individual to individual, (also from digit to digit) in every person, that the area of friction ridge skin is not replicated anywhere else.*
- *Although all patterns are exclusive and distinct in their ridge characteristics, they vary within limits and this variation permits a systematic classification of the patterns.*

Galton Details: *Term referring to friction ridge characteristics (also known as minutiae) attributed to the research of English fingerprint pioneer, Sir Francis Galton.*

Goal: *A statement of purpose that defines the mission of an organization.*

Good laboratory practice: *Operating practices and procedures for promoting quality and ensuring the integrity of the work product.*

Ground Truth: *Definitive knowledge of the actual source of an impression.*

Henry Classification: *The system of classification developed by Sir Edward Henry around the turn of the century based on the pattern types of the digits from both hands. This system served as the basis of classification in many English-speaking countries. Its use is now declining as Automated Fingerprint Identification Systems have been introduced.*

IAFIS: *Integrated Automated Fingerprint Identification System. The FBI's national fingerprint database for storage and retrieval of fingerprints.*

Identification: *Identification is a specialist's conclusion that two friction ridge skin impressions originated from the same source. This conclusion is a specialist's opinion that the observed friction ridge skin features are in sufficient correspondence such that the specialist would not expect to see the same arrangement of features repeated in an impression that came from a different source, and insufficient friction ridge skin features in disagreement to conclude that the impressions came from different sources.*

The basis for an identification conclusion is a specialist's opinion that the observed corresponding friction ridge skin features provide extremely strong support for the proposition that the two impressions came from the same source and extremely weak support for the proposition that the two impressions came from different sources.

An identification is a statement of a specialist's opinion (an inductive inference) that the probability that the two impressions were made by different sources is so small that it is negligible. An identification is not based upon a statistically-derived or verified measurement or comparison of all friction ridge skin impression features in the world's population.

To identify two fingerprint impressions, it is necessary to link together a sequence of characteristics in the friction ridge skin (e.g.) pattern type, minutiae, ridge count, ridges with no characteristics etc. This involves close scrutiny of all the ridge detail in the latent print and carefully comparing that detail with the ridge detail in the known or reference fingerprint. When the comparison of the friction ridge skin is completed, one should be able to form one of the following four opinions:

- *Identified - the fingerprints were made by one and the same person.*
- *Not Identified – the fingerprints were made by different people.*

- *Inconclusive - the fingerprints have ridge detail consistent, there is insufficient detail to form a conclusive determination, but there are no unexplainable differences.*
- *No Value - There is insufficient friction ridge detail for comparison.*

(also see Basis for Identification).

Impartiality: *Presence of objectivity. Other terms that are useful in conveying the element of impartiality are: independence, freedom from conflict of interests, freedom from bias, lack of prejudice, neutrality, fairness, open-mindedness, even-handedness, detachment, balance.*

Impression: *Friction ridge detail deposited on a surface.*

Incipient ridge: *A friction ridge not fully developed that may appear shorter and thinner than fully developed friction ridges (interstitial, nascent).*

Inconclusive: *An inconclusive finding means that there were ridge details consistent between the two areas of friction ridge skin being analyzed, and there are no unexplainable differences, however there is insufficient detail present to make a conclusive determination with regards to identification or non-identification for this comparison.*

Inconsistency: *Any reported results that differ from the consensus results. Inconsistencies may be classified as administrative, systemic, analytical or interpretive.*

Individual characteristic database: *A collection, in computerized searchable form, of features associated with an object or person uniquely or with a high degree of probability.*

Individual characteristic database sample: *A specimen of known origin from which individual characteristic information originates (e.g., reference blood or biological specimens, fingerprints of unknown individuals, electronic fingerprint records, test fired ammunition).*

Inked Impression: *An area of ridged skin recorded in fingerprint ink on an official fingerprint form.*

ISO: *International Standards Organization.*

Inspection: *Examination of a product, process, service, or installation or their design and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements.*

Inspection of processes can include personnel, facilities, technology or methodology.

Inspection procedures or schemes can restrict inspection to examination only.

Inspection Agency: *An inspection body can be an organization, or part of an organization.*

Inspection System: *Rules, procedures, and management for carrying out inspection. An inspection system can be operated at international, regional, national or sub-national level.*

Intervening Ridges: *The number of friction ridges between two characteristics.*

Item: *Is used in this International Standard to encompass product, process, service or installation, as appropriate.*

Item identifier: *Barcode Number assigned to an item impounded to the Escondido Police Department.*

Internal proficiency test: *Proficiency testing program managed and controlled within the Forensic Services Unit.*

Known prints: *The prints of an individual, associated with a known or claimed identity, and deliberately recorded electronically, by ink, or by another medium (also known as exemplars).*

Known sample: *A specimen of an identified source acquired for the purpose of comparison with an evidence sample; synonymous with exemplar. Those samples whose identity of types is established.*

Latent: *Invisible or only faintly visible areas of friction ridge detail; the word "latent" is Latin for "being hidden".*

Latent Print: *The secretions, substance and/or material left on a surface when touched by the friction ridges of the body, particularly those of the fingers. In touching an object, a film of natural secretions and contaminants on the fingers is transferred to the object, leaving an outline of ridges. Such prints may not be visible to an observer until treated by some physical or chemical process. As a general term, "Latent Print" is usually used to describe fingerprints obtained from crime scenes or from exhibits collected from crime scenes. Transferred impression of friction ridge detail not readily visible. Generic term used for unintentionally deposited friction ridge detail.*

Latent Print Card*: Also referred to as a Latent Lift Card, is a card typically made of a high quality, opaque card stock in which tape lifts used to lift latents, are placed on the card to preserve the fingerprint evidence. The cards usually are of a contrasting color to the fingerprint powder used to develop latent prints. Another form of latent print cards are called hinge lifters, which come with both the tape and the backing card together. These work by removing the Mylar backing from the tape, placing the tape lift on the latent print, and folding the tape onto the backing card after lifting.*

Level 1 detail: *Friction ridge flow, pattern type, and general morphological information.*

Level 2 detail: *Individual friction ridge paths and associated events, including minutiae.*

Level 3 detail: *Friction ridge dimensional attributes, such as width, edge shapes, and pores.*

Lift: *An adhesive plaque, tape or other medium on which recovered latent print detail is preserved.*

Lights Out: *Refers to an automated tenprint matching process which was developed to assist jurisdictions with 'real-time' processing. A matching threshold is set, above which the system makes a determination that the match is a 'Hit'. This user defined threshold is set according to system capabilities and requirements. In addition, a matcher dynamic threshold may be set to return a 'No Hit' result where there is no candidate above this lower threshold. Any score in between these upper and lower thresholds requires manual comparison by a specialist.*

Livescan: *Inkless process using electronic technology to directly scan and convert finger and palm prints into a digital format.*

Major Case Prints: *A systematic recording of all the friction ridge detail appearing on the palmar sides of the hands. This includes the extreme sides of the palms, and joints, tips and sides of the fingers (also known as complete friction ridge exemplars).*

Management system: *The organizational structure, responsibilities, procedures, processes, and resources for implementing quality management; includes all activities which contribute to quality, directly or indirectly.*

Manager: *A person with the responsibility for directing and controlling an organizational unit or program.*

Matrix**:** *The substance that is deposited or removed by the friction ridge skin when making an impression.*

May: *A word used when an element of the quality system is optional or discretionary.*

Measurement of uncertainty: *A parameter associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed.*

Media: *Objects on which electronic data can be stored.*

Method: *The course of action or technique followed in conducting a specific analysis or comparison leading to an analytical result.*

Minor deviation: *A deviation that is not expected to impact the quality system and generally will not have an extended duration.*

Minutiae: *Events along a ridge path, including bifurcations, ending ridges, and dots (also known as Galton details). Fingerprint ridge details that are key identification features of a fingerprint pattern. The three main types are bifurcations, ridge endings, and dots. Minutiae location is critical to modern fingerprint identification, especially for partial prints.*

Must: *A word used when an element of the quality system is required.*

National Measurement Standards: *May be primary standards, which are primary realizations of the SI units or agreed representations of SI units based on fundamental physical constants, or they may be secondary standards which are standards calibrated by another national metrology institute such as the National Institute of Standards and Technology (NIST).*

NGI*: Next Generation Identification. The FBI's replacement to the IAFIS (see IAFIS).*

Nonconformity, Level 1: *A situation or condition that directly affects and has a fundamental impact on the quality of the work product or the integrity of the evidence (see Corrective Action).*

Nonconformity, Level 2: *A situation or condition which may affect the quality of the work but does not, to any significant degree, affect the fundamental reliability of the work product or the integrity of the evidence (see Follow-up Action).*

Non-Operational Areas: *Areas of the laboratory where evidence is not stored and forensic examinations are not conducted.*

Not Identified: *The opinion of an expert that the unknown fingerprint being compared does not originate from the same source as the comparison exemplar. This finding is distinct from the more rigid finding of 'Exclusion', as further information (such as further exemplars) could lead to a Not Identified finding being changed to Inconclusive or even Identified. A finding of Exclusion infers that this further information could not change the expressed opinion.*

Not Identified In So Far As Could Be Determined: *A sub-class of the "Not Identified" conclusion, this is the opinion of a specialist that the latent being compared does not originate from the same source as the comparison exemplar, in so far as can be determined. No or limited areas of agreement have been found, and there may be areas of disagreement, but there is also some ambiguity in the opinion of the specialist as to whether they have enough information present or are examining the correct relative area of friction ridge skin. An example of where this finding may be used would be an open field of friction ridges with no anchor points, such as a core or delta, and limited orientation clues. This opinion may be qualified in reports with the reason(s) for why the not identified has been stated as 'in so far as can be determined'. Examples of these reasons include, but are not limited to:*

- *Due to the poor quality of the latent impression.*

- *Due to the poor quality of the known exemplars. (A further statement requesting better quality known exemplars may accompany this reason).*

Notes: *The documentation of procedures, standards, controls and instruments used, observations made, results of tests completed, charts, graphs, photos, and other documents generated that are used to support a specialist's conclusions.*

Objective: *A measurable, definable accomplishment that furthers the goals of the organization.*

Objective Test: *A test which, having been documented, demonstrated and validated, is under control so that it can be demonstrated that all appropriately trained staff will obtain the same results within defined limits. These defined limits relate to expressions of degrees of probability, measurement uncertainty and numerical values.*

Objectivity: *Means that conflicts of interest do not exist or are resolved so as not to adversely influence subsequent activities of the inspection body.*

Open proficiency test: *A proficiency test, known to the participant as such, prepared to evaluate the participant's competence related to casework.*

Operational Areas: *Areas of the laboratory where evidence is handled and stored, and where forensic examinations are conducted.*

Original Image: *An accurate replica (pixel for pixel) of the primary image.*

Organizing: *The process of identifying, specifying and assigning work, grouping work and resources into a structure and establishing a chain of command between individuals and groups.*

Palmprint: *An impression of the friction ridges of all or any part of the palmar surface of the hand.*

Patent Fingerprint: *Is a term referring to visible areas of friction ridge detail that can be seen with the naked eye, without any application of powders, chemicals, etc.*

Pattern Classification: *Sub-division of pattern type, defined by classification systems such as Henry or National Crime Information Center (NCIC) classifications.*

Pattern Type: *The designation of friction ridge skin into basic categories of loop, arch and whorl.*

Patent Print: *Friction ridge impression of unknown origin that is visible without development.*

Performance Check: *A verification that the equipment, instrument, or process is working as expected.*

Physical Evidence: *Items collected or submitted for examination in relation to a crime or criminal act.*

Plain Impressions: *(See slaps). The four finger prints of each hand taken simultaneously also including the two thumb prints of both hands, making the correct sequence of finger impressions explicit.*

Planning: *The analysis of relevant information from the past and present and the assessment of probable future developments so that a course of action may be determined that enables the organization to meet its stated objectives.*

Police forensic unit: *Forensic unit or agency, such as a crime scene investigation agency, using professional judgment to document (inspect) a scene with the aim of contributing to determining what happened, where it happened, when it happened, how it happened, why it happened, and who was involved. Also a forensic unit such as a friction ridge unit using professional judgment to examine evidence with the aim of contributing to determining if the comparison between items meets certain criteria.*

Policy: *A guiding principle, operating practice, or plan of action governing decisions made on behalf of an organization.*

Poroscopy: *A study of the size, shape, and arrangement of pores.*

Practices: *In this manual, a term used to describe quality affecting processes that are used by FSU.*

Preventive Action: *Action to eliminate the cause of a potential nonconformity or other undesirable situation. This is documented on a Preventive Action form.*

Primary Image: *The first recording of an image onto media.*

Principle: *A basic rule, assumption or quality; a fixed or predetermined policy or mode of action.*

Procedure: *The manner in which an operation is accomplished; a set of directions for completing an examination or analysis – the actual parameters of the methods employed.*

Product: *Result of a process.*

Proficiency: *The ongoing demonstration of competency.*

Proficiency tests: *Tests to evaluate the continuing capability of specialists and the performance of the FSU. The expected results of the test are unknown to those individuals taking the test.*

Process: *Set of interrelated or interacting activities which transforms inputs into outputs.*

Proper seal: *A seal that prevents loss, cross-transfer or contamination while ensuring that attempted entry into the container is detectable. A compliant seal may include a heat seal, tape seal, or a lock with, at minimum, the initials of the person creating the seal being placed across the seal onto the container when possible.*

Protocol: *A directive listing the procedures to be followed in executing a particular laboratory examination or operation; the overall plan for analysis of a particular item of evidence.*

Provision of a service can involve, for example, the following: *An activity executed on a customer-supplied tangible product; an activity executed on a customer supplied intangible product; the delivery of an intangible product; the creation of ambience for the customer.*

Qualified/Competent: *A term used to identify personnel who successfully complete a training program, pass a competency test and participate in the proficiency testing program.*

Qualitative: *The clarity of information contained within a friction ridge impression.*

Quantitative: *The amount of information contained within a friction ridge impression.*

QA / Quality assurance: *The planned and systematic actions necessary to provide sufficient confidence that a laboratory's product or service will satisfy given requirements for quality.*

Quality audit: *A management tool used to evaluate and confirm activities related to quality. Its primary purpose is to verify compliance with the operational requirements of the quality system.*

QC / Quality control: *Activities conducted according to established standards used to monitor the quality of analytical data and to ensure that it satisfies specific criteria.*

Quality documentation: *Documents of records pertaining to the quality system such as audit reports, corrective action forms, deviation forms and testimony evaluations.*

Quality Manager / Technical Manager: *An individual designated who, irrespective of other responsibilities, has the defined authority and obligation to ensure that the quality requirements are implemented and maintained.*

Quality manual: *A document stating the quality policy and describing the various elements of the quality system and quality practices of the organization or unit.*

Quality records: *Documents pertaining to the quality system such as audit reports, corrective action reports and testimony evaluations.*

Quality system: *The organizational structure, responsibilities, procedures, processes, and resources for implementing quality management; includes all activities that contribute to quality, directly or indirectly.*

RAN Board: *Remote Access Network Board. One of the governing bodies of the CAL-ID program as defined in Penal Code §11112.1 et. seq. passed in 1985.*

Reagent: *A substance used because of its chemical or biological activity. A reagent is a chemical substance that is used to create a reaction in combination with some other substance. A reagent is a compound or mixture added to a system to cause a chemical reaction or test if a reaction occurs.*

Record: *A document that provides evidence of a condition, work completed, activities conducted, and/or quality for archival purposes.*

Reference Collection: *A collection of stable materials, substances, objects or artifacts of known properties or origin that may be used in the determination of the properties or origins of unknown items.*

Record Prints: *Original tenprint form received upon first arrest, or other admission to AFIS (e.g. Applicants – security, police, etc.)*

Reference material: *A material or substance having known properties. These materials may be used for the identification of unknown substances, calibration of instruments, assessments of a measurement method, or assigning value to materials.*

Reference standard: *An acquired or prepared sample that has known properties for the purpose of calibrating equipment and/or for use as a control in examinations.*

Relative Position: *Proximity of characteristics to each other.*

Reliability: *Possessing the quality of being dependable; may refer to personnel, materials or equipment.*

Remediated Seal: *A remediated seal is used when there is only one way to open a sealed item by breaking the original seal. A remediated seal is placed over the original seal in an opposing direction. The specialist will initial and date the remediated seal, and then cut through both seals in order to open the item of evidence. This often occurs when opening gun boxes.*

Request: *The act or an instance of a contributor asking for the examination of evidence by the laboratory.*

Reverse Search: *Any tenprint submitted to AFIS, DOJ and FBI is searched against the unsolved latent file held by the respective systems. The candidates returned by these systems are known as 'reverse searches'. Reverse searches are compared in the same way as regular searches to determine if any identifications are present.*

Ridge Characteristics: *See Characteristics*

Ridge Flow: *The direction of one or more friction ridges. A component of Level 1 detail.*

Ridge Path: *The course of a single friction ridge. A component of level 2 detail.*

Ridge Unit: *See friction ridge unit.*

Ridgeology: *The study of the uniqueness of friction ridge skin and its use for personal identification.*

Rolled Impression: *The fingerprint of a single digit made by rolling the digit fully from one nail edge to the other.*

Root Cause: *The fundamental reason for a condition adverse to quality, that, if corrected or precluded, would minimize or prevent that condition, and/or similar conditions, from occurring.*

Root Cause Analysis: *Root cause analysis requires an in-depth investigation of the underlying causation factors rather than cursory symptom analysis. A process review to include technical procedures, instrumentation utilizations and maintenance, controls and standards requirements and employee performance may be required.*

Routine Process/Procedure: *A process or procedure that is conducted on an on-going basis.*

Safety manual: *A document stating the safety policy and describing the various elements of the safety system of the organization.*

SDS: *Safety Data Sheet.*

Secured area: *Locked or otherwise limited access space under laboratory control that has access restricted to personnel authorized by management.*

Service: *Result of at least one activity necessarily carried out at the interface between the supplier and the customer, which is generally intangible.*

Shall: *A word used when an element of the quality system is required.*

Short Ridge: *A single friction ridge beginning, traveling a short distance, and then ending.*

Should: *A word used when an element of the quality system is recommended, but not required.*

Similarity: *An observation that two impressions share a general likeliness of details; not to be confused with correspondence.*

Simultaneous Impression: *Two or more friction ridge impressions from the same hand or foot deposited concurrently.*

Skin: *Skin is a continuous layer of tissue over the surface of the body. Its principal functions are:*

- *It protects tissue beneath from mechanical injury, bacterial infection and desiccation.*
- *It contains numerous sense organs that are sensitive to touch, pain and temperature and so make the organism aware of changes in its surroundings.*
- *It helps to regulate the body temperature.*

The skin consists of two main layers: the outer skin or epidermis, and the inner or true skin, known as the dermis. The epidermis is constantly being worn away and replaced by new skin (a process known as keratinization) generated by the generating/basal layer of the epidermis from the 'blueprint' of the dermis, a papillary layer that is the source of the ridges known as "papillary ridges". The sweat glands, located in the dermis, discharge sweat at the skin surface through sweat pores found at the top of the ridges. The dermal layer of the skin also contains the nerves of touch that terminate at the underside of the epidermis. The epidermis contains no nerves but does contain nerve endings. Fingerprint patterns are not formed at the surface of the skin but are determined by the arrangement of various elements (such as sweat glands, nerves and blood vessels) found below the surface of the skin.

Slaps: *Plain impression (contact) of four fingerprints (thumb excluded) at a time (also known as flats). Slaps allow a fingerprint specialist to observe the correct sequence of fingers for a tenprint.*

Source: *an individual from which an item (e.g. crime scene impression) originates. An area of friction ridge skin from an individual from which an impression originated.*

Source Conclusions: *This establishes the conclusions an examiner may reach when comparing two friction ridge impressions. In reaching a conclusion, an examiner considers the observed similarities and dissimilarities and assesses the relative support of the observations under the following two propositions: the two impressions originated from the same source or from different sources. Similarities generally provide support for the proposition that two impressions originated from the same source, while dissimilarities generally provide support for the proposition that two impressions originated from different sources. An examiner may utilize their knowledge, training, and experience as well as statistical or probabilistic systems to evaluate how much support the observed similarities or dissimilarities provide for one proposition over another. A conclusion shall not be communicated as a fact. It is an interpretation of observations made by the examiner and shall be expressed as an expert opinion.*

> ***Source Exclusion:*** *Is the conclusion that two friction ridge impressions did not originate from the same source. Source Exclusion is reached when in the examiner's opinion, considering the observed data, the probability that the two impressions came from the same source is considered negligible.*
>
> ***Support for Different Sources:*** *Is the conclusion that the observations provided more support for the proposition that the impressions originated from different sources rather than the same source; however, there is insufficient support for a Source Exclusion. The degree of support may range from limited to strong or similar descriptors of the degree of support. Any use of this conclusion shall include a statement of the degree of support and the factor(s) limiting a stronger conclusion.*
>
> ***Inconclusive or Lacking Support:*** *Is the conclusion that the observations do not provide a sufficient degree of support for one proposition over the other. Any use of this conclusion shall include a statement of the factor(s) limiting a stronger conclusion.*
>
> ***Support for Same Source:*** *Is the conclusion that the observations provide more support for the proposition that the impressions originated from the same source rather than different sources; however, there is insufficient support for a Source Identification. The degree of support may range from limited to strong or similar descriptors of the degree of support. Any use of this conclusion shall include a statement of the degree of support and the factor(s) limiting a stronger conclusion.*

Source Identification: *Is the strongest degree of association between two friction ridge impressions. It is the conclusion that the observations provide extremely strong support for the proposition that the impressions originated from the same source and extremely weak support for the proposition that the impressions originated from different sources. Source Identification is reached when the friction ridge impressions have corresponding ridge detail and the examiner would not expect to see the same arrangement of details repeated in an impression that came from a different source.*

Qualifications and Limitations: 1) *An examiner shall not assert that a source identification is the conclusion that two impressions were made by the same source or imply an individualization to the exclusion of all other sources.* ***2)*** *An examiner shall not suggest that the offered conclusion is an expression of absolute certainty.* ***3)*** *An examiner shall not assert or imply that latent print examination is infallible or has a zero error rate.* ***4)*** *An examiner shall not cite the number of latent print comparisons performed in his or her career as a measure for the accuracy of a conclusion offered in the case at hand.* ***5)*** *An examiner shall not use the expression 'reasonable degree of scientific certainty' or similar assertions as a description of the confidence held in his or her conclusion.*

Preliminary Association: *This conclusion is used only as a result of a Preliminary AFIS Association and reported as an investigative lead only. A Preliminary Association is the result of searching an image of a latent print impression in AFIS and the conclusion is reached, based on comparing the returned candidate records onscreen, that the two friction ridge impressions have corresponding characteristics contained within, that are sufficient to conclude they MAY have originated from the same source. Official identifications are NEVER reported from Preliminary AFIS Association results alone.*

Specificity: *The quality or condition of being specific: such as the quality of belonging or relating uniquely to a particular subject.*

Spur: *A bifurcation with one short ridge branching off a longer friction ridge.*

Standards: *Something established by authority, custom, or general consent as a model for example.*

Sub-discipline: *A specific type of analysis within an accredited discipline.*

Substrate: *The surface upon which a friction ridge impression is deposited.*

Subject: *Is any person(s) nominated as being related in some way to a case.*

Sufficient / Suitable: *The determination that there is adequate quality and quantity of detail in an impression for further analysis, comparison or to reach a conclusion.*

Supervisor: *A person directly responsible for overseeing the work in an organizational unit.*

Suspect: *Is a person(s) nominated, by the investigators as a person of interest (POI) in the relevant case.*

Target Group: *A distinctive group of ridge features (and their relationships) that can be recognized.*

Technical Procedure Manuals: *Commonly referred to as Standard Operating Procedures (SOP's). A document that specifies the steps, methods, equipment, and materials necessary to complete a task properly. Technical Procedure Manuals are written to provide instruction and standardization of activities affecting quality.*

Technical procedures: *Of or relating to a practical subject organized on scientific principles.*

Technical review: *An evaluation of reports, notes, data, and other documents to ensure an appropriate and sufficient basis for the scientific conclusions. This review is conducted by a second qualified individual. The review of notes, data, and other documents that form the basis for a scientific conclusion.*

Technical support personnel: *A person who conducts casework related duties within the laboratory at the direction of an analyst.*

Tenprint: *A generic reference to examinations completed on intentionally recorded friction ridge impressions. A controlled recording of an individual's available fingers using ink, electronic imaging, or other medium.*

Trace evidence: *Any analytical procedure utilizing either chemical or instrumental techniques not specifically covered in other forensic disciplines.*

Traceability: *Property of the result of a measurement or the value of a standard whereby it can be related to state references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties.*

Testimony: *The firsthand authentication of a fact.*

Tolerance: *The acceptance of dissimilarity caused by distortion. Within an acceptable range.*

Trifurcation: *The point at which one friction ridge divides into three friction ridges.*

UCN*: Universal Control Number. The FBI's unique number system replacement for the previous FBI – III numbers. UCNs are used in the FBI-NGI system (see NGI).*

ULW: *Universal Latent Workstation. The program used to prepare latents for searching in IAFIS, against the FBI's national database.*

Validation: *The process of completing a set of experiments that establish the efficacy and reliability of a technique or procedure or modification thereof.*

Verification: *Verification is the process by which another specialist completes a secondary analytical examination of the actual evidence, along with conducting a technical review. Verification can also refer to the process used to confirm that a validated method, procedure, or instrument works as expected in the laboratory environment.*

Victim*: An individual/entity who has been disadvantaged, harmed or killed by any criminal offense, accident, or other event or action.*

Will: *A word used when an element of the quality system is required.*

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4. GENERAL REQUIREMENTS

4.1. IMPARTIALITY AND INDEPENDENCE

4.1.1. The Forensic Services Unit shall conduct all activities with impartiality and without prejudice.

ISO/IEC 17020 classifies inspection agencies as type A, B, or C, depending on the degree of independence of the inspection agency from its detective or customer. Type C inspection bodies preform activities for their parent organization along with supplying forensic services to outside agencies. Escondido Police Department's Forensic Services Unit (FSU) would be classified as a Type C agency. Forensic Services are provided to the Escondido Police Department and occasionally, upon request, by outside agencies.

4.1.2. All employees of Forensic Services shall sign an agreement that states they will remain impartial and not allow commercial, financial or other pressures to influence their judgment as it pertains to their work. These signed agreements shall be kept digitally and in hardcopy in the *Quality Assurance Materials* binder.

4.1.3. The Lieutenant overseeing the Forensic Services Unit is aware that being employed in FSU offers an inherent risk of bias and partiality. It is continually instilled in FSU personnel that their work must be independent of any outside influences and pressures. The Captain of the Investigations Bureau recognizes and understands the importance for impartiality and independence.

The Lieutenant who oversees FSU is knowledgeable in the requirements of ISO/IEC 17020 and is knowledgeable of current forensic topics that relate to bias in the field. Training provided internally to FSU personnel touches on this subject. Unfortunately, no one can guarantee that bias and partiality won't arise when involving human interpretations. Critics argue that removing forensic science laboratories and inspection units from law enforcement would reduce bias, but currently no research exists to support this.

The Escondido Police Department and Forensic Services are committed to creating an environment that minimizes bias. If bias is identified, FSU works to resolve the issue and acts accordingly to ensure that inspections are fair and objective. This is accomplished through external and internal trainings and following comprehensive written procedures for all tasks.

The Forensic Services Unit shall identify risks to its impartiality on an ongoing basis. This shall include those risks that arise from its

activities, or from its relationships, or from the relationships of its personnel. However, such relationships do not necessarily present the Forensic Services Unit with a risk to partiality. Therefore, members of the FSU shall conduct examinations without influence and in a location that allows for separation and independence in conducting case work, when possible. If the supervisor conducts an administrative review of a report/case notes containing interpretive data, it shall only be reviewed for grammatical/clerical errors; the results shall not be affected by this review.

Forensic Services personnel shall immediately inform their supervisor if during any portion of an inspection process he or she becomes aware that a person relevant to the inspection is a relative, friend, or someone to whom the specialist has had a significant history with; this can be either negative or positive. The term "significant", as used here, can be described as such – "would someone else who knew of this relation think the specialist's work activities could be skewed by that relationship?" Once notified of a relationship, the supervisor shall make a decision to remove or retain the specialist from the inspection process. If the person with the significant relationship is a superior, then that person shall notify the Lieutenant. The decision to replace the first specialist shall reside with the notified Lieutenant, and shall receive the full support of the assigned Captain of the Investigations Bureau.

Likewise, if a specialist during the course of an inspection becomes aware that he or she has a vested or financial interest in a party or business relevant to the inspection, then the specialist is obligated to inform his or her supervisor as stated in the previous paragraph.

At any point during the examination of a case the specialist recognizes a conflict of interest (i.e. familiarity of the suspect/victim, etc.) or the specialist believes there to be a risk to partiality (including conflict of interest), the specialist shall immediately cease activity and inform the supervisor. The supervisor shall consider the risk and consider reassigning the case to another specialist. The newly assigned specialist should begin examination of the case as if no work had previously been conducted, if possible. The original case notes shall be sealed in an envelope and shall remain with the case record and include a statement indicating the conflict and the course of action taken. In the event of a crime scene investigation, the specialist will be removed from the investigation. A second specialist will then be placed as the lead specialist for the remainder of the investigation. If both specialists need to be removed from the investigation, a request for assistance from the San Diego County Sheriff's Department Crime

Laboratory will be made. If this request is denied, a request will be made to another accredited laboratory within the County of San Diego.

4.1.4. If the Forensic Services Supervisor or the Lieutenant is made aware of such a relationship as described in the previous section (4.13), the official may opt to either remove that specialist from the inspection process or to let he or she continue with the inspection process. In either case, the Forensic Services Supervisor shall make a notation of the circumstance and articulate his or her reasoning for removing or keeping that specialist during the inspection.

If, in the Supervisor's opinion, he or she was notified of the relationship after a substantial period of time, then the Supervisor shall notify in writing to his or her Lieutenant describing the circumstances in full. Either official may require the involved specialist to also document the circumstances and the reasons for the delay in reporting the relationship. A "substantial period of time", as stated above, shall mean that at least one critical decision was made by the specialist prior to notification.

If a circumstance is discovered where there is a possibility that an individual's judgment has been compromised a Root Cause Analysis shall be conducted. The appropriate corrective action will be a result of the Root Cause Analysis. The case may also be sent to Internal Affairs for an independent review.

Police Department Investigations Bureau personnel may give input on casework priorities from their perspective, however no individual or entity outside the Forensic Services Unit has the authority to dictate choice of method, results, or content of case reports or case notes. Personnel outside the FSU may provide information such as court dates and inquire the status of cases, but shall not cause undue pressure or influence to eliminate or curtail processes.

4.1.5. Any decision by the Forensic Services Supervisor or the Lieutenant to remove a specialist from an inspection process based upon a suspected or perceived bias shall have the authority of the Captain of the Investigations Bureau.

4.1.6. The Forensic Services Unit shall be independent to the extent that is required with regard to the conditions under which it executes it services. It is essential that Forensic Services meet the criteria of independence as it pertains to its inspection activities. Independence is demonstrated by the following:

A. Forensic Services is identifiable on the Escondido Police Department's organizational chart as a distinct unit. The unit is

under the overall supervision of the Investigations Bureau, however, only supervisory staff participate in the functional decisions of the unit.

B. Clauses 4.1.2; 4.1.3; 4.1.4; and 4.1.5 are FSU policies and procedures for maintaining impartiality during inspection activities.

    1) FSU standard operating procedures describe how inspection and testing activities are conducted.

    2) Annual proficiency tests, training certificates, competency, and court testimony reviews are part of the unit's quality assurance program that provide feedback to supervisors on the work being accomplished. These documents can be found in each Specialist's Training binder or in the *Quality Assurance Materials* binder.

    3) Employee performance evaluations are also part of the quality assurance program that provides feedback to employees on the work being accomplished, however; these records are confidential and not subject to disclosure. These documents can be found in the Police Department Administration Office.

    4) These clauses and policies provide direction to specialists pertaining to this subject, as well as this manual.

C. Individual employees responsible for conducting crime scene processing, latent print development and latent print examinations have no direct relationship with the case to be dealt with, the persons involved, or with the evidence secured.

D. The services (inspections) of Forensic Services are made available to all interested legal bodies within the scope of the legal process.

4.2. CONFIDENTIALITY

4.2.1. Forensic Services has a responsibility to its customers to protect the confidentiality of all information related to any involvement with the unit. All members of the unit have signed Confidentiality Agreements which are kept digitally and in hardcopy in the *Quality Assurance Materials* binder.

Personnel of FSU are personally responsible for the proper management of information they become privy to in the course of their inspection and testing activities. Violations of the unit's procedures, the department's rules and regulations, Citywide Administrative Directive No. 5, and/or California Records Act pertaining to this, shall result in an investigation to be conducted by the appropriate entity. See section 7.5 of this manual.

Forensic Services personnel have access to confidential and sensitive reports on the electronic records management system. FSU does not disseminate information to the public. FSU only provides information to law enforcement or district attorney offices upon request and, when appropriate, with supervisor approval.

All case reports and media requests are directed to Escondido Police Department's Records Division per Escondido Police Department Instruction 1.18 *Public Records Requests*.

Inspectional information is considered proprietary and shall be considered confidential.

4.2.2. The Forensic Services Unit shall be responsible, through legally enforceable requirements, for the management of all information obtained or created during the performance of inspection activities. The Forensic Services Unit shall inform the detective, in advance, of the information it intends to place in the public domain. Except for information that the detective makes publicly available, or when agreed between the Forensic Services Unit and the detective, all other information is considered proprietary information and shall be regarded as confidential. FSU does not issue any information on the public domain.

Case records and other case documentation maintained by the FSU (for example: electronic data produced during evidence examination), and the information contained in them, are considered confidential and shall not be released to any person or agency outside the unit without both a "right to know" and a "need to know."

The following persons or agencies are presumed to have a "right to know" and "need to know" privileges for case records and other case documentation:

- The investigating officer or those designated by the investigating officer to received case documentation.
- The prosecuting or defense attorney or those designated by the respective attorney to received case documentation.
- Employees of the Escondido Police Department, San Diego District Attorney's Office, and other law enforcement and prosecuting agencies in San Diego County who come into contact with case documentation in the process of transmitting or transporting it.

"Right to know" and "need to know" can be established as follows:

- Through a legally executed subpoena or court order compelling release of case records.
- Through discussion or other correspondence with representative of investigating agencies with indirect or collateral involvement in an investigation, such as in parallel investigations of related cases or interagency task force investigations.

When the Forensic Services Unit is required by law or authorized by contractual commitments to release confidential information, the detective or individual concerned shall, unless prohibited by law or Escondido policy, be notified of the information provided.

Requests for original records, or requests for case documentation from persons or agencies without both a "right to know" and "need to know" privileges, shall be referred to Escondido Police Records Division. Requests for case documentation made under applicable State or Federal laws, such as the California Freedom of Information Act, shall be referred to the Escondido Police Department Records Manager.

4.2.3. Information obtained from sources other than the customer shall be treated as confidential.

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5. STRUCTURAL REQUIREMENTS

5.1. ADMINISTRATIVE REQUIREMENTS

Forensic Services is a unit within the Escondido Police Department, which is a well-established legal entity of the City of Escondido, California. As the Escondido Police Department is a government organization it is by definition "a legal entity that is responsible for all of its inspection activities with all appropriate authorizations for the State of California". Authorization to investigate specific crimes derives from the State of California and the Office of the District Attorney for San Diego County, California.

5.1.1. The Escondido Police Department (EPD) performs municipal law enforcement functions for the City of Escondido. The Forensic Services Unit is a unit within EPD's Investigations Division and is physically located within the Police and Fire Headquarters.

5.1.2. The Forensic Services Unit identifies itself within the Escondido Police Department entity as an inspection body for forensic services within the department. Forensic Services falls under the Investigations Bureau of the Escondido Police Department and is visible on the organizational chart.

5.1.3. The Forensic Services Unit is responsible for the inspection activities of crime scene processing, latent print development and latent print examination of crimes that occur within the City of Escondido, California. See Scope of Activities on page 4 of this manual.

5.1.4. The City of Escondido is self-insured. The City of Escondido maintains a legal department responsible for legal issues.

5.1.5. Forensic Services has no formal contract with the City of Escondido, it is understood that the unit exists to process scenes of crimes and evidence that occur within the city. Forensic Services shall maintain an up-to-date list to reflect the types of activities it provides (scope of activities).

5.2. ORGANIZATION AND MANAGEMENT

5.2.1. Forensic Services is responsible for documenting and processing crime scenes along with on-scene and in-lab processing for latent prints and analyses of all latent print impressions recovered by Forensic Services and other members of the Escondido Police

Department. Forensic Services also performs biological/trace collection, but not analysis.

The Lieutenant of Investigations Bureau commands both Forensic Services and the Criminal Investigations Divisions.

The Lieutenant of Criminal Investigations Divisions is under the Captain of the Investigations Bureau.

The Forensic Services Unit is structured and managed so as to safeguard impartiality.

Specialists self-assign or are assigned casework by other Investigation's personnel. Specialists typically prioritize casework handled within the unit (latent print development/analysis). Once assigned, Specialists determine: the best method of processing/examination, documentation, preservation and results. At times, rush cases will be assigned to the specialists. Crime scene investigation services are requested by the lead investigator, Sergeant or Watch Commander to the Forensic Services Supervisor.

5.2.2. The Forensic Services Unit is organized and managed so as to enable it to maintain the capability to complete its inspection activities. The personnel assigned to this unit currently includes a supervisor, a latent print and evidence specialist and two latent print specialists. A member of the unit shall serve as the Safety Manager. Another member will serve as the Technical Manager and share the responsibility with the Lieutenant as the Deputy Technical Manager.

The Forensic Services Unit must be staffed with enough competent specialists in order to have work verified and technically reviewed. If at any given time there is not enough staff, a request to an accredited agency within San Diego County, including the San Diego County Sheriff's Crime Laboratory, can be made.

The Forensic Services Unit is supervised by the Forensic Services Supervisor. The Forensic Services Supervisor is a working supervisor position, has administrative responsibility of the Forensic Services Unit personnel and is responsible for determining the need for forensic support at crime scenes, search warrants, suspect/victim processing, etc. The Forensic Services Supervisor is responsible for assisting during conflict resolution.

The Lieutenant may also elect to use the services of an outside agency if he or she believes that a particular investigation is overly connected

to specialists to maintain impartiality. The outside source must be deemed competent as a sub-contractor prior to their use. Refer to section 6.3 of this manual for the use of sub-contractors.

The Forensic Services Supervisor is competent in all inspection activities.

The Forensic Services Supervisor reports to the Lieutenant assigned to the Criminal Investigations Division. The Lieutenant will assist with administrative responsibilities of the Forensic Services Unit personnel and serve as the deputy Technical Manager.

Administrative Review of work produced by the Forensic Services Unit is conducted by personnel familiar with the inspection activities. Generally, this will be done by the Crimes of Violence Sergeant or assigned Lieutenant. In their absence, persons of the rank of Sergeant and above are approved to conduct administrative reviews.

Examinations utilizing an infrequently conducted method should be tested on a sample prior to execution on actual evidence to ensure the accuracy of the specialist performing the process.

5.2.3. As of 01/01/2018, the reporting structure of the Forensic Services Unit includes but is not limited to: FSU Volunteers, Department Specialists, Latent Print & Evidence Specialists, and Latent Print Specialists report to the Forensic Services Supervisor. The Forensic Services Supervisor reports to the Lieutenant of the Criminal Investigations Divisions. The Lieutenant reports to the Captain of the Investigations Bureau. The Captain reports directly to the Chief of Police.

FSU has rotating volunteers.

The review and authorization of all Forensic Services manuals, worksheets, forms, and logs shall be approved by the Lieutenant of the Criminal Investigations Division before use and/or dissemination. This authorization has been granted by Chief of Police.

See Appendix A of this document for an Organizational Chart.

5.2.4. Forensic Services is considered a part of the Investigations Bureau, yet it provides services to all other units and divisions within the Escondido Police Department. They are, however, not subordinate to any other unit or division.

Communication between specialists of FSU and other investigative units during the course of an investigation is essential. Forensic Services shall periodically select feedback from other units of EPD, the

District Attorney's Office, and external agencies that utilize their service. This feedback may be verbal or documented in a survey. This communication is two-fold; it informs FSU of their customer's needs as well as educating the customer on the functions and abilities of FSU.

5.2.5. The Technical Manager shall be a technically competent person within the unit. The Forensic Services Supervisor will serve as the Technical Manager and is responsible for creating all Technical Procedure Manuals and forms; maintaining the competency and proficiency testing programs; chemical hygiene; equipment and facility inspections; equipment maintenance; and maintaining the unit's program for measuring devices. The resume for the Forensic Services Supervisor / Technical Manager is located on file in the FSU S/ drive (S:/FSU/ISO/Resumes).

5.2.6. In the absence of the Forensic Services Supervisor, the Sergeant of the Crimes of Violence Unit in the Investigations Division will serve as Supervisor and handle all of the Forensic Services Supervisor responsibilities. The Lieutenant of the Criminal Investigations Division will be the Deputy Technical Manager.

5.2.7. Forensic Services maintains job descriptions for the positions of:

Forensic Services Supervisor
Latent Print & Evidence Specialists
Latent Print Specialists
Department Specialists
Forensic Services Volunteers

Forensic Services Supervisor: Under general direction, identifies, diagrams, photographs, collects, transports and preserves evidence from crime scenes; provides technical guidance and leadership in latent print analysis and performs difficult and complex examination of latent prints in connection with the investigation of crimes; gives expert testimony in the courts in all phases of latent print examination; performs related work as required. Reports to the Lieutenant.

Latent Print & Evidence Specialist: Under general direction, identifies, diagrams, photographs, collects, transports and preserves evidence from crime scenes; provides technical guidance and leadership in latent print analysis and performs difficult and complex examination of latent prints in connection with the investigation of crimes; gives expert testimony in the courts in all phases of latent

print examination; performs related work as required. Reports to the Forensic Services Supervisor.

Latent Print Specialist: Under general supervision, performs latent print examination and identification; identifies, photographs, collects and preserves latent print evidence from crime scenes; provides technical guidance and leadership in latent print analysis and performs difficult and complex examination of latent prints in connection with the investigation of crimes; conduct latent print development; gives expert testimony in the courts in all phases of latent print examination; performs related work as required. Reports to the Forensic Services Supervisor.

Department Specialist / Department Assistant: Under general supervision, independently performs a full range secretarial, advanced clerical, and routine administrative and programmatic work of a general or specialized nature in support of assigned programs, division, or department with only occasional instruction or assistance; exercising judgment and initiative, relieves assigned staff of clearly defined and delegated administrative or technical detail; may serve as secretary to councils, commissions and/or boards; and may act as office receptionist. The Department Assistant class is distinguished from the Administrative Assistant class in that the Department Assistant routinely performs duties and assignments that require confidentiality and discretion related to employee and labor relations.

Forensic Services Volunteer: Under general supervision by Forensic Services Unit personnel, independently performs a full range of requested work, including routine and administrative work. Reports to Forensic Services Unit personnel.

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6. RESOURCE REQUIREMENTS

6.1. PERSONNEL

6.1.1. All Forensic Services Unit personnel are recruited and selected based on a process that reviews the applicant's education, training, technical knowledge, skills and experience. The basic requirements are as follows:

An Associate of Arts or Science degree from an accredited college in administration of justice, evidence technology, biology, chemistry or related field is required. Two years of experience performing police-related duties, including some experience with crime scene investigations, evidence technology and print analysis and identification is required. Additional years of experience may be substituted for an Associate's degree. Previous training in, and experience, as a latent print specialist and/or field evidence technician is highly desirable. Possession of an appropriate California Driver's License is required. Any certification through the International Association for Identification or equivalent is highly desirable. Must be willing to work overtime and variable hours including night, weekend, and holiday work as required. Must be willing to be called back for crime scene investigations after normal working hours.

The job description and requirements are also on file with Human Resources.

Upon employment, the requirements for competency for specialists of the Forensic Services Unit are detailed in the Forensic Services' *Training Technical Procedure Manual, Latent Print Analysis Technical Procedure Manual, Latent Print Development Technical Procedure Manual*, *Crime Scene Technical Procedure Manual,* and in the job descriptions located in the *Quality Assurance Materials* binder and in the "*Shared*" drive in the "*FSU*" Folder FSU S:/ drive.

All FSU specialists must successfully complete competency exams for all areas of their work.

All specialists must complete an annual proficiency test, designed specifically for their respective duties. Refer to section 7.1 of this manual for further information regarding annual proficiency testing.

6.1.2. The Forensic Services Unit shall maintain sufficient personnel to provide the services indicated in the *scope of activities* document.

Forensic Services is a small unit and the leave of one specialist can greatly diminish the productivity of the unit.

Expertise from external agencies or private organizations may be sought as needed, provided the agency or organization is accredited to International Standards for the scope of service sought.

6.1.3. Forensic Services shall document the training and experience of its personnel and shall be able to demonstrate that each employee of Forensic Services has the requisite qualifications, trainings and range of expertise for the inspections to be carried out. The training files for each employee shall include information pertaining to the individual's educational background, training, continuing education, and proficiency testing. These files will be kept up to date and are able to demonstrate that the employee has a relevant knowledge of the material and technology used. Training files will be kept in the *Employee Records* binder.

New employees must complete the training program for Forensic Services. All specialists shall successfully complete an annual proficiency test in their discipline. Those can include crime scene processing, latent print examination, latent print development, and AFIS operations. At least one proficiency test, per discipline, shall be an external test, provided that an external test exists for that specific discipline.

Continuing education is very important to all specialists in FSU. Each specialist will identify areas of training he or she would like to pursue. It is the responsibility of each specialist to gather information on trainings available and fill out a training request form. Once completed, all training request forms will be given to the Forensic Services Supervisor which will be forwarded to the Lieutenant. Notification will be made once the paperwork has been approved or denied by management.

Specialists should also become members of professional organizations within the forensic field. Each year educational conferences are held by each organization. Specialists are encouraged to fill out a training request to attend one of the educational conferences. The conferences are a great source of knowledge and networking with other professionals around the country.

With membership to each professional organization comes newsletters and/or research journals. Specialists are encouraged to take time and read about new technology and findings within the field. The review of scientific periodicals and journals is an important step in continuing education and professional development. Generally, on a monthly basis, an article will be read and discussed between

members of FSU. A record of articles read and discussed will be kept in the *Quality Assurance Materials* binder in the Forensic Articles Section. An attempt will be made to obtain any new material that may be useful to Forensic Services Unit.

6.1.4. A copy of an employee's *Task Authorization* shall be given to the employee by the Technical Manager whenever a change is made to the authorization. *Task Authorizations* are located digitally in the FSU S:/drive or in the *Quality Assurance Materials* binder.

Task Authorizations shall be maintained for each employee of Forensic Services. The task authorizations shall indicate what tasks the employee is authorized to conduct, the date each task was authorized, and the signature of the authorizing person. In those instances, where an employee has been doing a task for many years, it is acceptable to state the month and year the task was first authorized. A task authorization will be issued upon the completion of the passing of training in a new discipline, equipment, etc. The Task Authorizations are located digitally in the FSU S:/drive or in the *Quality Assurance Materials* binder.

6.1.5. Specialists are civilian personnel. Requests for additional personnel shall be made by the Lieutenant, through appropriate channels. The Forensic Services Supervisor, the Lieutenant, and Human Resources shall work together to advertise, review and select qualified candidates.

The Lieutenant in conjunction with the current Forensic Services Supervisor shall attempt to obtain the best qualified person available. The Forensic Services Supervisor shall conduct interviews with viable candidates for employment. Specialists may be involved in the process. There may be more than one interview per candidate. The candidate that is selected shall be subject to a thorough background investigation conducted by the Training Division prior to hiring.

All FSU employees that conduct crime scene processing must demonstrate competence in all necessary fields before conducting casework without supervision. All work completed by personnel in training will be supervised by trained and experienced personnel who are authorized by the Forensic Services Supervisor to oversee this supervision.

All FSU employees that conduct latent print examinations must demonstrate competence in all necessary fields before conducting casework without supervision. All work completed by personnel in training will be supervised by trained and experienced personnel who

are authorized by Forensic Services Supervisor to oversee this supervision.

The *Training Technical Procedures Manual* is composed of two segments: Crime Scene Training and Latent Print Training. The first segment covers Crime Scene Training. Any employees conducting crime scene processing must demonstrate competence and pass the training program as outlined. The Crime Scene Training segment is composed of 15 modules as follows:

- Section 1.1 CS Module 1 – Crime Scene Fundamentals
- Section 1.2 CS Module 2 – Written Documentation
- Section 1.3 CS Module 3 – Photography
- Section 1.4 CS Module 4 – Crime Scene Sketching
- Section 1.5 CS Module 5 – Evidence Detection, Collection, Handling, and Packaging
- Section 1.6 CS Module 6 – Latent Print Detection, Processing and Recovery
- Section 1.7 CS Module 7 – Footwear and Tire Tread Impression Evidence
- Section 1.8 CS Module 8 – Biological Evidence: Detection, Screening, and Collection
- Section 1.9 CS Module 9 – Tool Mark Impression Evidence
- Section 1.10 CS Module 10 – Gun Shot Residue Collection
- Section 1.11 CS Module 11 – Autopsy Documentation
- Section 1.12 CS Module 12 – Final Evaluation
- Section 1.13 CS Module 13 – Courtroom Testimony
- Section 1.14 CS Module 14 – Shadow Phase
- Section 1.15 CS Module 15 – Recommended External Training

The second segment in the Training Technical Procedures Manual is the Latent Print Training section. Any employee conducting latent print examinations must demonstrate competence and pass the training program outlined in the Latent Print section of the Training Manual. The Latent Print Training Manual is composed of 18 modules. Each module is listed below:

- Section 2.1 LP Module 1 – Pre-Processing & Laboratory Safety
- Section 2.2 LP Module 2 – Latent Print Visualization & Recovery
- Section 2.3 LP Module 3 – Moot Court for Development
- Section 2.4 LP Module 4 – History
- Section 2.5 LP Module 5 – Pattern Interpretation
- Section 2.6 LP Module 6 – Classification
- Section 2.7 LP Module 7 – Biology of the Skin & Fetal Development

- Section 2.8 LP Module 8 – Scientific Methodology
- Section 2.9 LP Module 9 – Application of ACE-V
- Section 2.10 LP Module 10 – Operations and Quality Assurance
- Section 2.11 LP Module 11 – Recording Major Case / Elimination Prints
- Section 2.12 LP Module 12 – Inked Impression Comparison
- Section 2.13 LP Module 13 – AFIS
- Section 2.14 LP Module 14 – Digital Imaging
- Section 2.15 LP Module 15 – Latent Print Supervised Casework
- Section 2.16 LP Module 16 – Testimony Training
- Section 2.17 LP Module 17 – Other Training (optional)
- Section 2.18 LP Module 18 – Recommended Classes

Each section describes the training objective, the required reading, either hands-on testing and/or a written test, and what must be achieved to successfully complete each section. The trainer will review the work after each section is complete and determine the trainee's competency. Task authorizations shall be granted upon successful completion of a specific module or an entire section of the Training Program.

Specialists that have completed a training program from an outside agency are not required to complete a full training program. Regardless of previous experience, Specialists shall complete a qualifying exam or practical exercise and a mock court in all areas for which they have been deemed competent before being approved for casework. Task authorizations shall be granted upon assessment.

6.1.6. The FSU Training Program addresses the induction period, mentoring period and continuing training period. Refer to Section 6.1.5 of this manual for the outline of the FSU Training Program.

6.1.6.1. Specialist training for new-hires shall adhere to the *Training Technical Procedures Manual*. Trainees may not conduct a task unless in the presence of another competent specialist, and until the trainee has completed the testing requirements for that task. See the *Training Technical Procedures Manual* for the various training element requirements. Sufficiently detailed training records of personnel can demonstrate the successful completion of a specific training program. For all personnel hired prior to January 2018, training documents, certificates, prior

experience, job shadowing, and/or certification through the International Association for Identification will suffice. Implementation of the new training program is in effect as of January 2018.

6.1.6.2. The training program of Forensic Services requires the trainee to be mentored by an experienced specialist. Many of the training elements require the trainee to both observe tasks being completed by the specialist and be observed completing tasks by the specialist before the trainee is authorized to conduct those tasks independently.

6.1.6.3. The science, technology, and methodologies pertaining to latent print examination and forensic science evolve rapidly. Therefore, training of new-hires may be supplemented with additional reading of academic journals or periodicals from the field. See 6.1.3. of this manual for a description of Forensic Services' continuing education practices.

6.1.7. The Forensic Services Unit has a documented training program used to develop an individual's knowledge, skills, and abilities required to carry out forensic examinations. Additionally, the training program will provide for maintaining the skills and expertise of unit personnel and provide for retraining, when needed. The Training Technical Leader or Forensic Services Supervisor will ensure that, at a minimum, each trainee successfully completes a competency test in the relevant discipline or sub-discipline prior to conducting independent casework. A trainee's successful completion of the training program will be documented by the Training Technical Leader, unit supervisor, or designee identifying the discipline(s) or sub-discipline(s) a trainee is qualified in. Where applicable, training programs will include training in the presentation of evidence in court.

The training elements in the Forensic Services Training Technical Procedure Manual indicate a time-frame for learning each element. The stated time-frames are guidelines only. The training timeline will depend on the trainee, the trainer, and unpredictable events that may occur during the training period. The training pace may go fast or slow depending on the unit workload of the inspectors, the trainee's past experience and knowledge, and the trainee's ability to absorb the material. A review of each employee's training needs will be conducted on an annual basis by the Technical Manager. Recommended continuing education/training will be documented on

each employee's annual review. Annual monitoring of inspection activities will serve as a means of ascertaining training needs.

6.1.8. The Technical Manager of Forensic Services shall monitor inspection activities for satisfactory work. Monitoring shall be accomplished through proficiency testing, technical reviews of casework, direct observation, professional certificates, or court testimony, and the absence of legitimate complaints. These will be documented in the employee's annual review. If an employee is in training, bi-weekly evaluations shall be conducted until training is successfully completed. At that time, the employee will move to annual reviews. Crime scene processing will have an observation based (inspector witnessed) proficiency test. This observation may occur any time throughout the year. Each year, a different aspect of crime scene processing should be selected to evaluate.

6.1.9. Each specialist shall be observed by the Technical Manager at least once per year. The Technical Manager shall be observed by another competent specialist. Observation can be accomplished at crime scenes, in the laboratory, or monitored by supporting evidence, listed in Section 6.1.8. Successful completion of a proficiency test can be substituted for an annual observation.

6.1.10. Forensic Services shall keep training records, copies of course attendance and certificates, competency test records, proficiency test records, and employee appraisal forms for each employee. These records shall be retained while the employee is assigned to FSU and until five years following their last date of work. All records shall be maintained in the *Specialist's Employee Records* binder or in the *Quality Assurance Materials* binder. Employee appraisal forms are available upon request.

6.1.11. No member of Forensic Services shall be compensated in a way that would influence their inspection or testing results.

6.1.11.1. Each year, the Forensic Services Unit personnel will read and sign a Code of Conduct. This will be maintained digitally in the FSU S:/ drive and a hardcopy kept in the *Quality Assurance Materials* binder.

6.1.12. All members of Forensic Services shall render opinions and interpretations of forensic inspections that are impartial. See clauses 4.1.2, 4.1.3, 4.1.4, 4.1.5, and 4.1.6.

6.1.13. All specialists, supervisors, volunteers, and part-time staff used by Forensic Services for inspection services shall keep confidential all information obtained or created during the performance of the inspection activities, except as required by law. See also 4.2 "Confidentiality." Confidentiality also applies to work performed by sub-contractors. Sub-contractors shall sign a Non-Disclosure Agreement which shall be retained digitally in the FSU S:/ drive and a hardcopy kept in the *Quality Assurance Materials* binder. A witness does not need to be present to sign Non-Disclosure Agreements for sub-contractors.

6.1.13.1. All members of the FSU, including volunteers, shall read and sign a statement of confidentiality on a yearly basis.

6.2. FACILITIES AND EQUIPMENT

6.2.1. The Forensic Services Unit shall maintain adequate office space for the specialists to complete casework in a competent and safe manner. Documents, forms, computers and office equipment shall be suitable and adequate. The Forensic Services Supervisor is responsible for maintaining the forms, documents, and computers. The Department Specialists should be responsible for maintaining office equipment, including: paper, pens, tape, etc. All members are responsible for notifying the Department Specialist of equipment and office supplies that need to be ordered.

Specialized equipment available to specialists includes but is not limited to: cameras, lenses and other photographic equipment; forensic light sources; drying chambers; superglue fuming chambers; development chamber; specialized computer software; and materials necessary for the recovery and packaging of evidence. Appropriate personal protective equipment shall be available to specialists.

Camera equipment shall be stored in FSU when not in use to prevent deterioration from the extreme temperatures in vehicles.

If any equipment is noticed to be not working properly, or is no longer suitable or adequate, the Forensic Services Supervisor is to be notified. The Specialist that locates the equipment that is out of compliance is to place an "OUT OF ORDER" sign on it immediately.

6.2.2. Equipment Authorizations shall be maintained for each person assigned to Forensic Services who conducts inspections. Personnel will be authorized to use equipment after they have been trained on its use and completed any competency testing associated with the equipment.

No one outside Forensic Services, including anyone from a different department or agency, shall be allowed to use equipment belonging and housed in the Forensic Services Unit, except under extreme circumstances. Under these circumstances the individual from another agency would have to complete competency testing and be authorized before utilizing the equipment.

Exception to this is the 3D laser scanner. This item is maintained by the Escondido Police Department Traffic Unit.

Access to Forensic Services shall be restricted to personnel assigned to Forensic Services, the Crimes of Violence Sergeant, the Investigations Lieutenant, and the Investigations Captain. All other persons that proceed past the boundary line shall be required to sign a "Sign-in Log" which shall be maintained immediately inside the main entrance door to the unit. Once the log is filled, the log shall be scanned into the ISO folder on the FSU S: drive labeled *Access Logs* within the Logs folder. The log shall be shredded upon scanning completion.

Assigned volunteers have access restricted to normal business hours; Monday through Friday 7 am to 6 pm. Any time outside of business hours, the volunteer must be accompanied by a Specialist.

The access cards to the FSU office shall be restricted to the above listed persons. A master key is kept in the watch commander's office in a locked box for emergency purposes only. There is also a physical key maintained by the Escondido Police Department Property & Evidence Division that is only to be utilized to generate additional copies of door keys for FSU assigned personnel. An Access Key Log can be obtained from Police Administration as needed. The Latent Print and Evidence Specialists and the Latent Print Specialists will each maintain a key to the FSU. There are also a set of spare keys to the rooms inside FSU. The keys will be in a secured lock box within Forensic Services and can be used by anyone assigned to Forensic Services. The location of the key is only known by FSU personnel.

6.2.3. For each piece of equipment utilized by FSU personnel, an Equipment Authorization form shall be filled out by each individual that has been trained to use such equipment. Any time equipment leaves FSU for servicing and is returned, the Technical Manager shall ensure the

equipment is in working order. This shall be documented on the Equipment Inspection Form. Equipment shall not be utilized until inspected and approved by the Technical Manager.

Should a request for new equipment be needed, the Lieutenant will meet with the Specialists to determine the suitability of the current equipment and facilities. Information derived from these meetings, plus the need to keep up-to-date on new technology and methods will be considered. Items and equipment needed shall be prioritized and based on perceived need.

The temperature and humidity of the Forensic Services Unit is maintained by the Building Maintenance Department of the City of Escondido. Information can be provided upon request.

6.2.4. General service equipment, not directly used for making measurements or where the equipment settings cannot significantly affect the test or result (e.g. stirrers, hot plates, non-volumetric glassware, cameras, refrigerator, et.), may be maintained by visual examination and no calibration is necessary. Equipment that has a significant influence on inspections or the results of inspections has been defined by FSU as rulers or measuring devices for impression evidence photography and the DCS-5 Camera System. The rulers shall be inspected upon receipt of the new measuring device by Forensic Services' Technical Manager, who will report on the results of these inspections in a log for measuring devices. Subsequent checking of measuring devices can be done at any time by a member of FSU should a measuring device be subject to some form of modification. The DCS- 5 Camera System will be serviced yearly as long as the service contract allows. After the service agreement is expired, the DCS-5 Camera System will be checked yearly by a member of FSU. Each item of critical equipment shall have its own inspection form. The inspection form shall adequately describe the equipment so that it can be distinguished from other similar equipment by the serial or product number. Equipment that needs routine checks / calibrations are located on the QA31 Equipment List and Maintenance Log. Specialists do not use any equipment outside the direct control of Forensic Services.

6.2.4.1. The 3D laser scanner utilized at crime scenes is maintained by the Escondido Police Department Traffic Unit.

6.2.5. The Equipment Inspection Forms shall describe the inspection process for each piece of equipment. If an item of equipment is in need of maintenance, it shall be noted on the sheet by the Technical

Manager, who will be responsible for either having the item serviced or bringing the matter to the attention of the Lieutenant. An "Out of Order" sign will be placed on the equipment if it is taken out of service. Equipment Operational Manuals are easily accessible to FSU personnel. User manuals will be kept in the FSU File cabinet or scanned and kept in the FSU S: drive in the User Manuals folder.

6.2.6. Equipment for obtaining measurements shall be inspected to ensure each falls within predetermined parameters. This equipment shall be inspected each time a new allotment is received. This equipment includes: measuring devices used for measuring evidence pertaining to latent prints, and other impression evidence.

The 3D laser scanner will utilize a NIST Traceable Ball Bar in at least 1 scan from each scene. A copy of the NIST certificate is located in the FSU file cabinet.

6.2.7. Forensic Services uses a NIST traceable 39-inch stainless steel ruler manufactured and certified by Calibration UK Ltd. Calibration UK Ltd performs calibrations in adherence to ISO/IEC 17025 standards and provided an accredited certificate. The NIST ruler is measured against a random selection of a batch of "adhesive rulers" used for documenting prints to determine if the markings on the rulers are correct. The NIST ruler is also used to measure "plastic rulers", "magnetic rulers", and "distometers" to determine if the markings on the rulers are correct. If rulers are correct, they are documented on the "Ruler Log" and given a respective number. This number is then labeled on the ruler. If measurements are off by 1 mm, this constitutes a discrepancy. If a discrepancy exists, the rulers will be thrown away or returned to the company, documented on the purchase receipt, and new ones will be purchased.

The distometer used for sketching crime scenes will be measured at least yearly against the NIST Ruler. If the distometer falls outside +/- .5 inch, it will either be sent to the manufacturer for maintenance/calibration, or it will be replaced with a similar product.

6.2.8. Reference standards used by Forensic Services for calibrating equipment shall be used for that purpose only and NOT for casework. The reference standards will be secured in the FSU in a drawer or cabinet designated specifically for reference standards. The Technical Manager will monitor the environmental conditions of the laboratory

and will be the only personnel authorized to use the reference standards.

The measurement of uncertainty for reference standards that are used to inspect Forensic Services' working measuring instruments shall be more accurate than is required of the working instruments.

6.2.9. The Technical Manager may subject certain equipment for in-service checks between regular calibrations. These checks may take place during the regular equipment inspection or at any time the Technical Manager deems it is warranted. The acceptance criteria for each piece of equipment in the laboratory shall be stated on the Equipment Inspection Forms.

6.2.10. Reference materials shall be traceable to any and all available national or international standards.

Any in-service checks on equipment shall be documented, indicating the nature of the check and if the piece of equipment met all acceptance criteria.

6.2.11. Forensic Services shall maintain a list of approved vendors. This list shall be available digitally in the FSU S:/drive or in the *Quality Assurance Materials* binder. ISO 9000 or 17025 certificates for these vendors shall be stored in the *Quality Assurance Materials* binder when available and in the FSU S:/drive. Forensic Services may use vendors that do not have ISO certificates if the vendor is a sole supplier or has been providing quality products in the field for years. On an annual basis, the list of approved vendors will be reviewed. If a vendor no longer meets the standards or is no longer ISO 9000 or 17025 certified, the vendor will be reevaluated for further use.

6.2.11.1. A Chemical Intake Log will be kept of all incoming chemicals that have been ordered by Forensic Services. Forensic Services shall maintain a list and copies of purchase orders for purchased chemicals and shall verify that incoming items are as ordered. The specialist who receives the chemical will be responsible for generating lot numbers for each chemical and noting their expiration date.

The Technical Manager shall ensure that incoming goods are not used until they conform with requisite specifications. Performance checks of new chemicals are acceptable.

6.2.11.2. The Technical Manager shall ensure that all chemicals and reagents are properly stored. The storage of all other items is the responsibility of the Technical Manager.

6.2.12. During equipment inspections, the Technical Manager shall note any deterioration of the storage areas containing chemicals and reagents. The Technical Manager shall complete semi-annual inspections of the chemical storage cabinets, and any reagents or chemicals with expiration dates shall be replaced when expired or removed from case work but kept for training purposes only. Chemicals that have expired shall be placed in a container for expired chemicals or placed in the section for training chemicals. The container of expired chemicals for disposal with be disposed of within 180 days from the day it was marked for disposal. Contact Risk and Safety for the current disposal company to be contacted to arrange for disposal of chemicals. Chemicals shall be listed on the Chemical Disposal Log.

The reliability of all chemical processing solutions shall be tested at the time of initial preparation and prior to application for casework. If a chemical processing solution does not have a positive reaction / pass the quality control, the Specialists preparing the solution shall notify the Technical Manager. If the chemical solution is remade and still does not pass the quality control, the vendor that provided the chemical may be contacted. An evaluation of the vendor / chemical will be made if after reordering the chemical, the solution still does not pass the quality control.

The laboratory is always locked and has an audible alarm. Access into FSU is by prox card or key only. There are 15 lockable evidence storage locations, four securable rooms and one general processing area located in the FSU for securing of evidence. If evidence is stored in the general processing area (241) it shall have clear indicators that the items on the processing tables are evidence and that they should not be touched. If evidence is placed in a securable room, the outside of the door should be marked with a clear indication that evidence is inside and to not touch. The evidence storage lockers have keys and shall be locked while holding evidence. See Section 6.2.2 for security of the lab and see Section 7.1.2 for evidence storage.

6.2.13. Computer software shall be adequate for use. Adobe Photoshop is the industry standard for image enhancement and is utilized by FSU.

6.2.13.1. The City of Escondido's Information Systems Department backs up all FSU related data on their network daily. Images created by FSU are uploaded to the cloud based inventory platform. Other FSU related data is in the FSU dedicated share drive (mapped on FSU computers as drive letter S: in the folder named FSU) is a network resource running on a server that is housed inside the server room located at the Escondido City Hall. Only selected Information System staff and selected Building Maintenance staff have access to the server room. Members of FSU have access to the FSU folder on the S: drive. Members of Forensic Services have the ability to make changes within this drive. Information Systems Staff have administrative privileges for the purposes of completing backups.

Maintenance of basic computer hardware and other devices (printers, scanners, etc.) is the responsibility of the City of Escondido Information Systems Department. Some software is also maintained by the County of San Diego, including Cal-ID software. Specialized software for use in Forensic Services (Adobe Photoshop, etc.) shall be updated and maintained by the City of Escondido Information Systems.

All problems on City of Escondido maintained computers or software are reported to the IS Department via a Help Desk Ticket. This platform is located on the City's website: Escondido Intranet

All problems on the computers or software supplied by the County of San Diego will be reported to the designated county representative.

6.2.14. Equipment may be declared defective or in need of maintenance by a specialist. Likewise, a problem may be discovered during a routine inspection. The Technical Manager shall attempt to fix any problems associated with such equipment. If a defect has the potential to influence an inspection result, the Technical Manager shall remove the item from service and shall mark the item as defective. If the defect affected previous inspections, the Technical Manager shall notify the Quality Manager (if different). This may involve contacting an approved vendor for assistance. The Quality Manager shall, when necessary, take appropriate corrective action.

Instruments and equipment shall be kept clean and maintained in good working condition. Testing equipment and instrumentation that has failed calibration/performance checks, gives suspect results, is

damaged, defective, or has been mishandled to affect testing results shall be immediately taken out of service and labeled appropriately to prevent inadvertent use. There are “NOT IN WORKING ORDER DO NOT USE” signs available for placement on equipment.

The Forensic Services Supervisor shall also be notified. Once the equipment or instrument has been repaired, tested, and is determined to be compliant with laboratory specifications, the "NOT IN WORKING ORDER DO NOT USE" label shall be removed and equipment returned to service. The Forensic Services Supervisor or designee shall evaluate the effect, if any, the equipment or instrument defect or departure from performance check has had on previous casework. If previous casework was affected, the laboratory shall take corrective action (see Corrective Action section).

6.2.15. The Technical Manager and the Quality Manager (if different) shall keep a record of equipment currently in use. Measuring devices shall be calibrated and/or inspected and labeled with a lot number by the Technical Manager. The Technical Manager shall keep a record of the calibration and measurement uncertainty associated with each critical measuring device where required or a log of inspections.

User manuals will be kept in the FSU File cabinet or scanned in and kept in the FSU S: drive in the User Manuals folder.

Records shall be maintained of each item of equipment and its software significant to the investigations conducted. These records shall include at least the following, where appropriate:

- Identity of the item of equipment and relevant software
- The manufacturer’s name, model numbers, and serial number or other unique identification
- Checks that the equipment complies with the specification
- The current location (all pieces of equipment are located within the lab)
- Location of operating instructions (instructions are located in a binder within the lab)
- Copies of reports and certificates of all calibrations, adjustments, acceptance criteria, the due date of the next calibration or inspection, maintenance plan and maintenance carried out to date
- Modification or repair to the equipment

Forensic Services shall maintain a list of critical reagents in the Latent Print Development Technical Procedure Manual for all chemicals used within the lab.

A Chemical Intake Log and Chemical Disposal Log shall be maintained and reagents labeled with: reagent name and lot number; size; preparation and expiration date; name of preparer (or manufacturer) and ID; storage conditions, where appropriate; and hazard warning, if needed.

6.2.15.1. Some chemicals or reagents are purchased with a unique lot or batch number. If this is the case, that unique number can be used. If a chemical is made in-house or did not come with a unique batch or lot number, FSU will create a unique identifier. The general naming sequence for issuing of unique lot or batch numbers for chemicals or powders is as follows:

An abbreviation for the powder or chemical followed by the unique type of powder or chemical ingredient followed by the manufacturer identifier followed by the date prepared or date opened, followed by the initials of the specialists making or opening the powder or chemical. The lot number is created upon the mixing of reagents, if not provided by the manufacturer. Example: NIN-E03172018CB

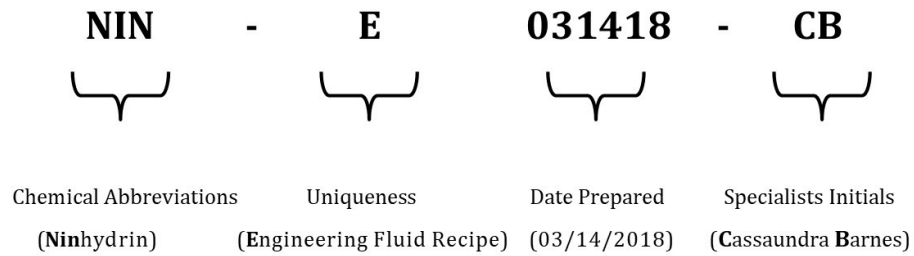
- Cyanoacrylate Ester

CAE	-	**S**	**041918**	-	**SM**
Chemical Abbreviations (**C**yano**a**crylate **E**ster)		Manufacture (**S**irchie)	Date Opened (04/19/2018)		Specialists Initials (**S**erena **M**cAloney)

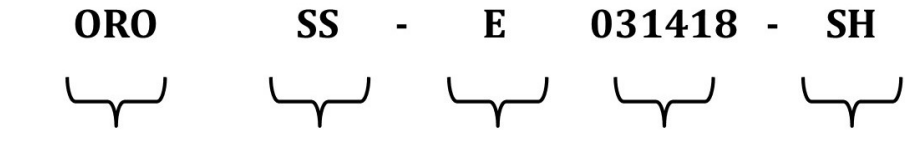
- Black Powder

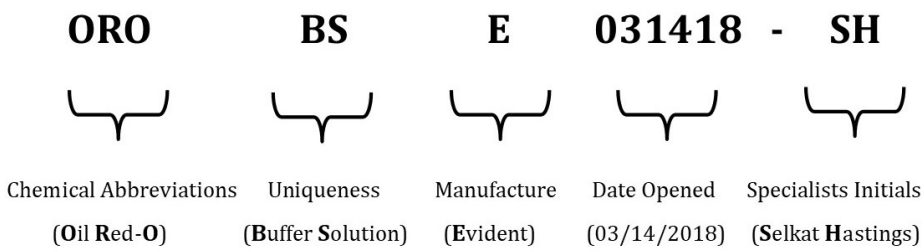
BP	-	**A**	**122816**	-	**CB**
Chemical Abbreviations (**B**lack **P**owder)		Manufacture (**A**rrowhead)	Date Opened (12/28/2016)		Specialists Initials (**C**assaundra **B**arnes)

- Ninhydrin



- Oil Red O





6.2.16. The FSU maintains a reference library that contains forensic related books along with binders and material received from forensic related trainings. Other related materials and articles that are reviewed as a Unit are kept on the FSU S: drive.

6.3. SUBCONTRACTING

6.3.1. The Escondido Police Department Forensic Services, in normal situations, handles all major crime scene processing, all latent print development, and all latent print analysis / comparison functions. If unforeseen circumstances arise, FSU may use a subcontractor. A situation that may be considered an unforeseen circumstance is something such as an abnormal overload due to a terrorist attack.

The terms subcontracting and outsourcing are considered synonyms. A subcontractor is one who is not part of the accredited organization

and who performs services that are covered under the scope of accreditation. If the need arises to sub-contract work, an accredited contractor must be selected.

Competence of a subcontractor may be demonstrated by the subcontractor having accreditation to ISO/IEC 17020, ISO/IEC 17025, or a recognized accrediting body for the relevant inspection tests. A subcontractor who is certified as a Latent Print Examiner by the International Association for Identification will also meet competence.

For sub-contractors that do not meet the above listed criteria, competence shall be demonstrated by a combination of the following:

- Copy of CV's and related certificates
- More than a decade of experience and recognition within the field
- Results of external annual proficiency exams

Subcontractors shall work with the Police Business Division to ensure that all formal documents are completed before service is implemented.

The San Diego County Sheriff's Crime Laboratory is an accredited laboratory that is utilized. They are not considered a subcontractor.

6.3.2. The investigative body in charge of the overall investigation shall be notified by the Forensic Services Unit when FSU intends to sub-contract part of the inspection. If a subcontractor is utilized, a note will be included in the FSU Report that will include the subcontractor's information.

6.3.3. Whenever subcontractors carry out work that forms part of an investigation and/or examination, the responsibility for any determination of conformity of the forensic item with the requirements shall remain with the FSU.

6.3.4. Forensic Services shall maintain a list of persons or entities with whom it can anticipate sub-contracting or temporarily employing in the future and shall determine competence of the individuals before using them. Record of their conformity with the applicable requirements of ISO/IEC 17020 or with other relevant conformity assessment standards shall also be kept. This document containing the list of persons or entities will be reviewed / updated yearly.

Competence of a sub-contractor may be demonstrated by the sub-contractor having accreditation to ISO/IEC 17020, ISO/IEC 17025, or

a recognized accrediting body for the relevant inspection tests and/or providing copies of CVs and/or certificates.

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7. PROCESS REQUIREMENTS

7.1. INSPECTION METHODS AND PROCEDURES

Annual proficiency testing will be conducted once a Specialist has successfully passed the competency test of the Training Program, respective to their job duties. At least one of the specialists in each discipline must complete an external test provided by an ISO/IEC 17043 accredited company or from an outside accredited agency. External tests that are purchased from a test provider may be used as internal tests in subsequent years, providing the material is still valid. The other specialists may take the same external test or take an internal test designed by the Technical Manager. At no time during the testing process, shall specialist share or compare results prior to reporting. It is acceptable that all FSU personnel complete an annual internal test designed by the Technical Manager and Deputy Technical Manager (if different) in their respective discipline of "crime scene processing", "latent print development" and "comparisons".

The internal processing test for evidence shall consist of mock evidence with different surface types. Different skill sets for processing different pieces of evidence and documentation of prints can be found in the Technical Procedure Manuals. Personnel shall be informed before the test that the evidence is fake, however, should treat it as though it is real evidence. The Technical Manager responsible for proficiency testing shall create mock evidence packaged as evidence from a real case. He or she will then determine what sequential processing techniques the specialist(s) should be utilizing for each item, including proper trace/biological collection. The Technical Manager will use this information as a checklist to determine if the test-taker has satisfactorily completed the internal test. Only a pass/fail grade will be given for the test. The Technical Manager will review the results for each method, their documentation, and the reasoning behind what processing methods they decided to use. The Forensic Services Supervisor is responsible for creating mock evidence for proficiency testing. A test for the Forensic Services Supervisor shall be created by a competent

specialist within FSU or an appropriate specialist from an outside accredited entity.

The test will vary from year to year, so different processing techniques and methods are tested. A varying selection of the processing methods described in the Technical Procedure Manuals shall be tested during any four-year period.

The internal AFIS operations test shall consist of a specialist entering latent prints from casework into the current AFIS system. It is up to the Technical Manager how many latents shall be entered based on skill level and ease of operation with navigating the system. The Technical Manager will observe the specialist in this process. Another competent specialist shall observe the Technical Manager conducting AFIS operations. The records of the specialist entering the print will be kept on the AFIS Maintenance Log (QA31 Equipment and Maintenance Log).

The crime scene proficiency test shall be observation based. A competent specialist shall observe the other specialist who is conducting crime scene processing and documentation. The observing specialist shall grade on a pass or no pass system. The grade sheet will be given to the Technical Manager or Forensic Services Supervisor for review.

For all testing, the Technical Manager shall inform each test-taker of the results of the test after he or she has reviewed the notes and documentation submitted by the test taker and any information supplied by the test manufacturer, if applicable. A failing grade on a proficiency test shall result in a report of non-conformance and corrective action commensurate with the error(s). The results of any internal testing shall be graded as either pass/fail and kept in the proficiency test section in the *Quality Assurance Materials* binder.

The Technical Manager shall submit annually to the unit's accrediting body, a description of all in-house designed proficiency test, each participants' results, and corrective actions, if any. The results of proficiency tests shall not be made available to the public or persons not employed within the unit or the unit's accrediting body, except by subpoena. Information on the test set-up and procedures may be given to a person outside the unit if the supervisor desires.

7.1.1. The procedures to which Forensic Services conducts their functions can be found in the Crime Scene Technical Procedures Manual, Latent Print Development Technical Procedures Manual or the Latent Print Analysis Technical Procedures Manual. These manuals provide

information on the general procedures to be followed for the majority of Forensic Services' assignments.

The Technical Procedure Manuals, though thorough, still retain a great deal of flexibility. Flexibility is an essential element for procedures pertaining to crime scene processing and to evidence processing for fingerprints as not every scene, item, surface or circumstance can be predicted.

Forensic Services utilizes methods that are nationally or internationally recognized. Procedures validated by authoritative bodies such as the Scientific Area Committees and Sub-Committees maintained by the National Institute of Technology and Scientific Working Groups on Friction Ridge Analysis, Study, and Technology (SWGFAST) will normally be followed. Any in-house methodologies, techniques, or equipment shall be fit for the purpose it is intended and a performance check must be done before use on casework. When available, validation or procedural information may be obtained from scientific peer-reviewed publications, e.g. The Journal of Forensic Science (a publication of the AAFS) or The Journal of Forensic Identification (a publication of the IAI). Although rare, in circumstances when detectives offer advice on processing evidence, the specialist shall notify the Forensic Services supervisor. The specialist shall explain to the supervisor the advice or request made. The supervisor is not obligated to honor such request. The request, whether honored or not, shall be noted in the case file. The Forensic Services supervisor should (though not mandatory) request that such requests be made via e-mail or other written form and the supervisor should then place a copy of the actual request in the case file. The supervisor shall notify the detective if the inspection method proposed by the detective is inappropriate.

FSU reserves the right to deny a request for re-examination on a case that has already been examined in-house or by an external agency. The customer will receive a written response explaining the reason for denial.

Any outside entity that requests to view the laboratory or watch a specialist complete their duties shall make a formal request to the Police Chief. The forensic unit shall use methods and procedures for forensic activities which are defined in the requirements against which the forensic process is to be completed. Internal or external tours of FSU can be requested through the Forensic Services

Supervisor. All participants of the tour shall be supervised at all times and shall sign-in on the visitor log.

Where these are not defined, the forensic unit shall develop specific methods and procedures to be used.

The forensic unit shall inform the customer if the forensic method proposed by the customer is considered inappropriate.

Where possible, nationally or internationally recognized methods or procedures that have been validated and published by authoritative bodies or relevant SWGs should be used.

Such methods should be implemented following performance checks that confirm that the forensic unit is able to meet the performance specified in the published method and that they are fit for purpose. Records of the performance checks should be kept as objective proof of compliance. These records can be found in the *Quality Assurance Materials* binder.

The Forensic Services Unit shall utilize methods and procedures that have been validated or verified by another accredited laboratory. The documentation must be kept on file either electronically or in the FSU files. A performance check will be done on any new method or procedure that is received or put into practice.

If the FSU is creating an unpublished procedure or method, it must undergo adequate testing before being implemented.

7.1.2. The Technical Procedural Manuals allow for sufficient planning and understanding by specialists prior to inspections. See Section 7.2 of this manual for proper evidence handling, packaging, submission and minimizing contamination.

The Latent Print Development Technical Procedures Manual describes the applications and the sequence that follows for the type of item being processed for prints. Also see Appendix B of this manual for a Latent Print Development Guideline.

Critical reagents shall be tested with a control item prior to each use of the reagent. If this is not feasible because of the type of reagent, a control will be done simultaneously (example: Cyanoacrylate). Expired chemicals should not be used on evidence, unless a control is done before and results are determined to be acceptable. The Specialist shall properly document the use of a control during processing. The quality control can be done simultaneously with evidence processing (CAE Fuming) or it shall be done prior to use on evidence. If the testing method needs a positive and negative control before use, the specialist should conduct the tests prior to use. These

results will be recorded in casework documentation. Specialists shall only utilize methods or procedures that are responding correctly.

Any disposable equipment that could contribute to contamination should be properly disposed of. Generally, this only involves situations when biological evidence is collected. Single use brushes shall be used when collecting latent prints and biological evidence from the same area to prevent contamination. Disposable equipment (e.g. tweezers, gloves, PPE) shall be disposed of in the biohazard waste receptacle in FSU. Any sharps (e.g. scalpels, needles) shall be discarded in the biohazard sharps container in FSU. For instances when biological evidence is not present, proper sanitation (e.g. alcohol sanitizing wipes, bleach) of equipment shall be completed.

Equipment can also be sterilized utilizing a sterilization unit. Sterilization of equipment shall follow the manufacturer's guidelines.

Drying chambers are to be utilized when drying items of evidence. The Specialists are to retrieve the key from the drying chamber and keep it in their possession while they have items of evidence in the chamber. It is suggested to place a piece of butcher paper in the bottom of the chamber to catch any falling trace evidence. This butcher paper may be impounded as part of the case as a new item of evidence. After utilizing the drying chamber, FSU personnel shall thoroughly clean the chamber to help eliminate any possible contamination. Once the chamber is clean, the key is to be returned to the chamber. Instructions for cleaning are located on the drying chambers. If a specialist is unable to clean the chamber at the end of use, the drying chamber shall be clearly marked that it is in need of cleaning prior to further use.

Evidence in the process of being examined may be left for short periods of time in FSU. The Forensic Services Unit door remains locked at all times. Access into FSU is by prox card. At the end of each work shift, evidence that is still in the processing stage should be stored in a Forensic Services Unit evidence locker, secured in a room (241-B – 241-E) or in the general processing area (241) with clear indicators that the items on the processing tables are evidence and that they should not be touched. If evidence is placed in a room, the outside of the door should be marked with a clear indication that evidence is inside and to not touch. If stored during processing and analysis, an evidence package should be kept closed, but does not need to be sealed. For example, a paper bag may be folded over to protect the evidence. If a specialist needs to leave for a short period of time, such as for lunch, the evidence does not need to be repackaged if it is in a secure area, but needs to be protected from possible contamination and loss of evidence. Evidence items that will not fit

into an overnight storage locker may be stored overnight in a lockable examination or storage room. The item should be covered or wrapped in some manner, such as with white butcher paper, and identified as evidence. Exposed surfaces with evidentiary value should be protected against evidence loss, cross-transfer, contamination, or other deleterious change.

The Specialists are to use professional judgement for the item selection to be processed. The Specialists are to use professional judgement on where and how to process an item of evidence for ridge detail. The Specialists are to use professional judgement to swab items of evidence for potential DNA. See Appendix B for a Latent Print Development Guideline.

The Specialist can utilize the EPD Forensic Services Latent Print Development Technical Procedure Manual for guidance on how to properly process items of evidence. The Specialist can also utilize a Forensic related website or publication for guidance.

The Specialist shall take contemporaneous notes during the processing of evidence. The notes may be handwritten on approved latent print development forms, or may be directly entered into the current computer software being utilized for case notes.

When processing items that will be further tested, specialists shall use "clean" processing techniques.

If swabbing for DNA is requested, clean powder and a new brush shall be utilized, or a magnetic wand may be cleaned with a bleach solution or a cleaning wipe.

If processing several items of evidence from the same case, the specialist may utilize the sterilization unit to clean instruments, equipment, powder, brushes, magnetic wands, etc., prior to use. The items must be sterilized in accordance with the manufacturers guidelines.

If collecting any derivative items of evidence that need to have further processing, the specialists shall use proper PPE and any methods to prevent contamination such as disposable placards, disposable tweezers, etc.

If upon visual examination, the specialist determines that the item does not conform to the requested processing, the specialist shall notify the detective prior to proceeding.

If based on professional judgement, a specialist notices significant deviations found in regard to the normal use of products or processes,

the specialists shall notify the requesting detective of their findings.

Specialists should consider other potential analyses before processing. When in doubt, another qualified specialist shall be consulted. When warranted, the specialist shall document and collect trace and biological evidence found on an item of evidence before the item is exposed to a condition that could compromise the evidence.

7.1.3. Non-standard procedures shall be documented within the case file. It shall be clear to any other competent inspector who reviews a case file, what was done and why. In the event Forensic Services develops a new method or procedure or if Forensic Services adopts a new, un-validated procedure or method, FSU shall complete performance checks on the new methods. This should be done multiple times to ensure that the new method is performing as it states it should.

Where appropriate, the procedures located in the Latent Print Development Technical Procedure Manual are well-established procedures and are validated and/or published in peer journals.

7.1.4. All manuals of Forensic Services are available in the "ISO" file located on the FSU S:/drive network accessible only to assigned personnel of Forensic Services and the Information Systems department. A hardcopy is also available within Forensic Services Unit. A mobile device in the crime scene vehicle will have all necessary manuals on it, as to be easily accessible in the field. It is at the discretion of each specialist if they would like to keep a personal copy either in printed form or in digital format. All hardcopy worksheets and note forms are made available to any person in Forensic Services.

The Technical Manager shall periodically (at least yearly) review all manuals, procedures and forms and update them as necessary. Forensic Services personnel are encouraged to notify the Technical Manager of any requests for modifications for any of the unit's documents.

Once a modification is made to any document of Forensic Services, the following shall take place:

- The replaced version (digital file) shall be re-located inside the "Obsolete Manuals and Forms" folder (also within FSU S:/drive).
- The Technical Manager shall ensure that the control information on the revised document contains the new revision date and/or version number.
- The newest version shall be placed within the appropriate

folder ("Accreditation Manuals", "Forms", and "Logs").

- All members of FSU shall be notified by the Technical Manager, via email, of the modification and are instructed to immediately destroy any digital or hard copies they have of the replaced version.

- The "Document Control Ledger" shall be updated to reflect the modifications.

7.1.5. Forensic Services has no formal contract with the City of Escondido; it is understood that the unit exists to process scenes of crimes and evidence that occur within the city. Forensic Services shall maintain an up-to-date list to reflect the types of services it provides (scope of service), as well as those services it cannot provide but can be sent to the San Diego County Crime Laboratory (e.g. DNA).

7.1.5.1. The Lieutenant and the Technical Manager of Forensic Services shall ensure that FSU has appropriate and adequate resources to provide the work listed on their scope of service. "Adequate resources" shall include, but are not limited to, facilities, equipment, procedures, and reference documentation. If it is deemed by the Lieutenant or the Technical Manager that adequate services no longer exist for a particular function listed on their scope of services, that function shall be removed from the list and scope document and the accrediting body shall be immediately notified of the change of scope.

7.1.5.2. Latent print processing and examination shall be completed in accordance with the manuals of Forensic Services. FSU personnel are not under any obligation to change their methodology at the request of the customer (investigative divisions, patrol, DA's office or victims of crime). Any such request must be made directly to the Lieutenant or the supervisor of FSU, who may or may not choose to honor the request. Such requests, when honored, shall be indicated within the case files. See 7.1.1.

7.1.5.3. All work conducted by Forensic Services shall be in accordance with their Quality Assurance Program and such work shall be controlled by a Technical Review and corrective action when necessary.

7.1.5.4. Work shall be completed by Forensic Services in accordance with their manuals and procedures.

7.1.6. Forensic Services shall verify the information it receives from sources other than the unit of its inspections. See section 6.3 on "Subcontracting".

7.1.7. Observations and data received from inspections shall be recorded promptly. The supervisor of the unit shall ensure personnel report on their inspections in a timely manner. Personnel who do not report on their inspections in a timely manner shall be subject to reprimand.

7.1.8. Technical and Administrative Reviews of casework shall include a review of calculations and data transfers if appropriate. Those inspections that require mathematical or scientific calculations shall be reviewed or verified by a second competent specialist during the verification stage of the examination. All casework notes and reports shall be reviewed and approved by a qualified specialist to ensure accurate transfer of information. Data transfers to electronic reports shall indicate review date and approval by a qualified specialist at the bottom of the notes and report. If there are instances where the administrative review results in the identification of an administrative error, the report and notes are to be sent back to the original examiner for correction. The report will need to go for technical review again, before being resent for administrative review.

7.1.9. The Safety Manual extensively documents the safety protocols of FSU.

7.1.10. During the course of training, it is a requirement for a new Specialist to participate in a Mock Court. After the successful completion of the respective training program, the trainee specialist will be signed off to conduct casework and testify in court. Testimony of a specialist will be reviewed at least yearly. If a specialist does not testify in court within a calendar year, an oral evaluation of testimony will be administered and reviewed. A failing grade on testimony review shall result in a report of non-conformance and corrective action commensurate with the error(s).

QA18 Internal Evaluation of Testimony

QA33 Annual Latent Print Evaluation of Testimony

QA34 Annual Latent Print and Crime Scene Evaluation of Testimony

7.2. HANDLING INSPECTION ITEMS AND SAMPLES

7.2.1. A variety of items can become items of evidence in a case. The Specialist collecting the items of evidence are to use their professional judgement for the best collection and packaging method. A guideline for packaging items of evidence can be found on the S: drive in the PD Property Folder. Common packaging materials include but are not

limited to the following: paper bags, envelopes, plastic kpaks, metal cans, plastic bottles, and cardboard boxes.

Evidence should be packaged at a scene in a way that will prevent cross contamination, however, the packaging does not need to be sealed at the scene. If transporting an item of evidence, it should be secured in a fashion that prevents cross contamination or damage. All items collected shall be logged into the cloud based inventory platform and impounded into the Escondido Police Department Property and Evidence Division.

Evidence collected at crime scenes shall be documented prior to collection, either by notes, photographs, sketches or any combination thereof. Evidence packaging shall be marked with the Escondido PD case number and pertinent information.

An example of labeling the front of the evidence package:

Barcode

Item #: 001
Three (03) latent lift cards

Case #: 18012345
BMT #1816
12/26/2018
1251 hrs
Crime Scene
Living room

All evidence, including physical items, latent prints, photographs, and elimination prints shall be entered as a chain of custody record into the cloud based inventory platform. An entry shall be created each time an item is moved to a different location, e.g. evidence locker to laboratory or back to the Property Unit. When collecting items of evidence at a crime scene, evidence that will require further examination or processing shall be packaged in a manner to prevent cross contamination.

All evidence received by the Escondido Police Department Property and Evidence Division requires proper packaging and sealing. A proper seal protects the integrity of an item of evidence and reduces the risk of evidence loss, cross-transfer, contamination, or other

damaging change. A container is properly sealed only if the contents cannot readily escape and only if entering the container results in obvious damage or alteration to the container or its seal. Stapling does not constitute a proper seal. Also, a proper seal bears the initials or identification of the person sealing the evidence container and the sealing date. Common methods for sealing items of evidence include tamper-proof evidence tape and heat seals.

The Property and Evidence Division is responsible for receiving, storing and transferring evidence collected during criminal investigations. The Property and Evidence Division also has the ability to reject items of evidence that are not properly packaged. In the instance a Specialist is notified of a rejected item, they are to correct the issue in a timely manner.

Evidence for processing is received from the Escondido Police Department Property and Evidence Division upon request. When Specialists are notified that the evidence is ready for pick up, they shall report to the Property & Evidence Division in a timely manner. Proper chain of custody will be maintained in the current cloud based inventory platform.

Specialists receive evidence that is properly packaged and sealed. If the evidence is not properly packaged and sealed, Specialists shall refuse the item of evidence, with the exception of large items that cannot be properly packaged or sealed. For the items that meet the exception, the specialist shall note the quality in case notes.

Specialists should compare the requested evidence information to the item they requested before signing for the item of evidence. This check will help ensure the receipt of the proper evidence. Specialists should compare the evidence description and barcode number with the lab request form for accuracy. P&E personnel should be made aware of significant discrepancies. If a discrepancy is found, it will be noted in the case documentation. The correction will be made. The correct information will be used moving forward with case

documentation. When possible, specialists shall open evidence in a manner that preserves both the original packaging seals and evidence.

Evidence may be received and submitted by any member of the FSU.

Evidence shall be stored in an operational area of the Forensic Services Unit. This may include evidence stored and/or processed in the vehicle bay.

The specialist preforming an examination on evidence in a case shall document, in case notes, an inventory and the condition in which the evidence is received.

Evidence transferred between members within the FSU shall be accompanied by an internal transfer sheet or tracked in the cloud based inventory platform. This transfer sheet shall become a part of the case record.

Chain-of-Custody records may be obtained from the Property and Evidence Division or printed from the cloud based inventory platform.

For items that only have one place to seal and open the package, a remediated seal will be placed over the original seal prior to opening. The remediated seal shall contain the specialists' initials and date that they are opening the original seal. The specialist shall then cut through the original seal and the remediated seal to begin processing.

Specialists shall retain all received evidence packaging materials. If an item of evidence is repackaged, the examiner shall retain the original packaging by placing it inside of the new packaging. The Specialist shall document the change in packaging in the case notes or report. The barcode label shall be placed on the outside surface of the new packaging. When heat-sealing an item, the barcode label shall be visible.

Specialists shall document an inventory of received items of evidence and shall note any discrepancies in their case notes.

During the course of processing, a new item may be created. If this occurs, the item will be entered into the cloud based inventory platform to receive the next chronological item number for the case. The specialist may choose to also include a derivative item number in their notes, on the packaging and in the evidence description in the cloud based inventory platform.

When a specialist has completed processing on an item of evidence, the item may be temporarily stored in storage locker labeled as FSU

241-7. The item will be returned to the Property and Evidence Division.

7.2.2. The Technical Procedures Manual describes the procedures for recovery and packaging of evidence. The manual contains flow charts of processing techniques that should be followed when processing a particular item. The flow charts and sequence of techniques are broken down into sections based on characteristics of the substrate and/or the matrix. These are flexible guidelines to allow for various circumstances.

The specialist shall determine and note on their worksheets and in their report if any processing has been done to the evidence prior to receiving the item (e.g. super glue fuming of a firearm on-scene).

7.2.3. In cases where discrepancies exist, the specialist shall consult with the submitting officer (any rank). This will be documented in the case file and shall be resolved prior to processing.

7.2.4. Evidence in the process of being examined may be left for short periods of time in the FSU. The Forensic Services Unit door remains locked at all times. Access into FSU is by prox card only. If evidence is temporarily stored during processing and analysis, an evidence package should be kept closed, but does not need to be sealed. For example, a paper bag may be folded over to protect the evidence. If a specialist needs to leave for a short period of time, such as for lunch, the evidence does not need to be repackaged if it is in a secure area, but needs to be protected from possible contamination and loss of evidence. A piece of butcher paper may be placed over the item of evidence with a clear sign of "EVIDENCE DO NOT TOUCH" either on or around the item of evidence.

At the end of each work shift, evidence that is still in the processing stage should be stored in a Forensic Services Unit evidence locker, secured in a room (241-B – 241-E) or in the general processing area (241) with clear indicators that the item(s) on the processing table are evidence and that they should not be touched. "EVIDENCE DO NOT TOUCH" signs are available to be placed on or around the area where the evidence is being left unattended. A piece of butcher paper may be placed over the item of evidence with a clear sign of "EVIDENCE DO NOT TOUCH" either on or around the item of evidence. If evidence is placed in a room, the outside of the door should be marked with a clear indication that evidence is inside and to not touch / enter. An "EVIDENCE DO NOT TOUCH" sign may be placed on the

exterior side of the door to indicate to others to use caution when entering the exam room.

Personnel shall use the following guidelines when examining evidence:

Proper separation of evidence is necessary to preserve its integrity. Separation may be accomplished in different ways, including proper packaging and physical separation of evidence items by distance or laboratory area. The types of evidence that should be kept separated include:

- Victim from suspect
- One victim from another victim
- One suspect from another suspect
- Crime scene from victim
- Crime scene from suspect
- One crime scene from another crime scene, including vehicles
- One case's evidence from another case's evidence

To reduce the risk of cross-transfer, contamination, or mix-up of evidence, only one item at a time from a case should be examined. Personnel should examine suspect and victim evidence at separate times or in separate spaces, and clean their work areas between examinations.

Personnel shall consider other potential analyses before processing. When in doubt, another qualified specialist shall be consulted. When warranted, the specialist shall document and collect trace and biological evidence found on an item of evidence before the item is exposed to a condition that could compromise the evidence.

Specialists may use the following temperature guidelines for short-term evidence storage during examination:

- Store non-biological evidence at room temperature.
- Refrigerate liquids or fluids, such as alcoholic beverages or blood in vials.

Note: The above temperature guidelines are recommendations and may not apply to all laboratory sections or types of evidence. Sections may have their own temperature-storage policies that take into

account their particular needs. Sections may also specify the acceptable temperature range for the storage of evidence.

7.3. INSPECTION RECORDS

7.3.1. Forensic Services shall retain case records until, at least, the case is adjudicated and either a sentence is served or all appeals have been exhausted. Official narratives are retained in the Escondido Police Department Records Division, which is maintained by the Escondido Police Department. All other case information, e.g. notes, data, etc. are retrievable only by members of Forensic Services. Case photos are to be uploaded to the cloud based inventory platform. Access to each photo is recorded in the "history" of the image. This can be accessed at any time. However, evidence recovered, e.g. biological swabs, etc. may be in the control of another unit or agency, such as Escondido Police Department Property & Evidence Division or the San Diego County Crime Laboratory. Forensic Services shall retain all latent prints recovered by personnel or detectives until the work has been completed on the case. At that time, the evidence is returned to the Escondido Police Department Property & Evidence Division.

Forensic Services maintains policies and procedures for Technical Case Reviews. Forensic Services' shall review 100% of its casework.

Any discrepancy, omission and/or clerical error will be noted on the Case Review Checklist and returned to the original specialist for correction. Corrective actions will be addressed when appropriate.

In the case where a discrepancy between the original specialist and the case reviewer, the Forensic Services Supervisor (if different than case reviewer) shall review the case in an effort to resolve it. Additionally, an external agency may be used for consultation. The discrepancy and its resolution shall be noted in the case file and revisited during an annual management review. See Section 8 "Conflict Resolution" of the Latent Print Analysis Technical Procedure Manual for more information.

The annual Management Review shall include all records that required a resolution to ensure that any appropriate preventative or corrective actions are implemented.

All pages contained in the case file shall be numbered and contain the date, case number, and the specialist's signature or initials, unless digitally uploaded in to the case management software. Copies of

emails and Officer reports records do not require pagination as they are considered administrative documents.

Case Number
Specialist Name and ID #
Date
Page Numbering (example 1 of 5, 2 of 5, etc.)

- Documents shall be grouped by type:
    - Any processing worksheets (e.g. Crime Scene, Vehicle, Evidence, Victim)
    - Any Latent Print Examination Worksheets and related addendums (e.g. candidate lists, mark-ups, etc.)
    - Latent Print Examination Report
    - Administrative documents
    - Email correspondence
    - Records of telephone conversations, evidence receipts, descriptions of evidence packaging and seals, subpoenas, records of observations and text/examination results, reference to procedures used, diagrams, printouts, photographs, etc.

The records required to support conclusions should be such that in the absence of the specialist, another competent specialist could evaluate what had been performed and interpret the information.

Although documentation of latent print comparisons and development are housed in the case management software, there may be instances that paper examination/observation records are created. If a case file contains case notes, all pages shall include the following information:

- Case Number
- Specialist Name and ID #
- Date
- Page Numbering (example 1 of 5, 2 of 5, etc.)

The case records shall include:

- Report
- Case notes
- Internal Transfer form if applicable
- The case file shall contain all the results of examinations and observations and method and equipment used, including visual evidence, as well as the findings and, where appropriate and admissible, conclusions arrived at from these results.

Significant equipment shall be documented in the case notes.

For comparison cases, there shall be:

- A reproduction of the known and unknown, or sufficient information to guide the reviewer in retrieving the original.
- The test shall be that another competent specialist can evaluate the original work and verify the procedures and conclusions.
- A report of all findings will be written. Even when there is a negative result, a report will be written.
- A verification is different than a technical review. A verification and a technical review can be done simultaneously.
- A technical review shall be done by another trained and qualified specialist.
- If another member of FSU is unavailable, another trained and qualified person from an accredited agency may be utilized.
- Technical Reviews will utilize the Technical Administrative Review Checklist.
- All comparison cases shall be verified by a second competent specialist. If a member of FSU is not available, another competent specialist from an accredited agency may be utilized.

All writing shall be made in ink, with the exception of diagrams and sketches which may be made in pencil. Corrections should be made by making a single line through the error and the technician initialing the modification. When preforming supervised casework, both the trainer and trainee shall sign all pages where the trainee performed the work indicated.

A minimum of one fingerprint verification shall be completed for each latent print examination that results in identification or suspect exclusion results.

Hard copies of these files (paper, CDs, etc.) are filed in the File Room of the Escondido Police Department Record Unit. Any electronic notes or reports generated pertaining to the case shall be saved as a PDF document and stored in the case management software or in the FSU folder on the S:/ drive. Photographs and other digital evidence are stored in the cloud based storage system for digital evidence.

7.3.2. The report shall be internally traceable to the specialist who conducted the investigation by having the specialist sign the report. The signature will be on the final page of the report. If the report consists of more than one page, the specialist and technical review shall initial each page before the final page. The final page will have the original specialist who completed the examination and the technical reviewer's signatures.

The technical reviewer shall sign the report in the same fashion as the original specialist. The signature will be on the final page of the report. If the report consists of more than one page, the specialist and technical review shall initial each page before the final page. The final page will have the original specialist who completed the examination and the technical reviewer signatures.

The verifier shall sign the report in the same fashion as the original specialist. The signature will be on the final page of the report. If the report consists of more than one page, the specialist and verifier shall initial each page before the final page. The final page will have the original specialist who completed the examination and the verifiers signature. The verifier can be the same as the technical reviewer as

long as both the verification aspect and the technical aspect are completed.

If any abbreviations are utilized in the report or case notes, they must be from the approved abbreviations list that is located in Appendix I of this document.

All FSU worksheets, logs, and forms of a case file shall be signed and/or initialed and dated by the person who completed the page. These worksheets, logs, and forms will also be paginated. A list of abbreviations and their meanings are located in Appendix I of this document.

7.4. INSPECTION REPORTS AND CERTIFICATES

7.4.1. All casework carried out by the Forensic Services Unit shall be documented in a case file. See 7.3.1 above. Hard copies of these files (paper, CDs, etc.) are filed in the File Room of Escondido Police Department Record Unit. Any electronic notes or reports generated pertaining to the case shall be saved as a PDF document and stored in the case management software or in the FSU folder on the S:/ drive. Photographs and other digital evidence is stored in the cloud based storage system for digital evidence.

Any reports completed by FSU personnel will be approved by authorized qualified personnel.

7.4.2. Inspections shall include the following information:

- identification of the issuing body
- unique identification and date of issue
- date(s) of inspection
- identification of the item(s) inspected
- signature or other indication of approval, by authorized personnel
- a statement of conformity where applicable
- the inspection results

7.4.3. The Escondido Police Department does not issue inspection certificates.

7.4.4. All results on reports issued by the Forensic Services Unit shall be correct, accurate, and clear. Where the report contains results supplied by subcontractors, these results shall be clearly identified.

7.4.5. Correction or additions to a report after issue shall be recorded by issuing an “Amended Report” with the incorrect information followed

by the correct information. Corrections and amendments to an inspection report shall be issued as followed:

- The title of the narrative shall be "AMENDED REPORT to (name of previous report)." The letters "amended report" shall be capitalized.

- The amended report shall end with a section titled "REMARKS" This section will contain the reason for the amendments to the original report in QED. The "remarks" section may also contain other information deemed necessary for persons involved in the investigation. The amended report will have the same case file number as the original report. This "AMENDED REPORT" title shall indicate that the amended report replaced the original report.

- A copy of the amended report shall be sent to the customer and interested parties as soon as practical.

- The amended report shall be placed in the case folder. The amended report shall not be attached to the original report nor be paginated with the original. It shall follow the report and have its own pagination.

7.5. COMPLAINTS AND APPEALS

7.5.1. Complaints against members of the Forensic Services Unit will be directed to Internal Affairs, as per the Escondido Police Department Instruction 1.12 Civilian Complaint Reception and Investigation Procedure.

7.5.2. A description of this process is available in the Escondido Police Department Shared S: / Resource Library / Department Instruction folder. Complaints pertaining to the inspection activities or professional conduct may originate from any person. Any interested party can request information by contacting Internal Affairs.

7.5.2.1. The Accrediting Body also has a procedure for the investigation of well-founded allegations concerning serious negligence or misconduct substantially affecting the integrity of the forensic results. If Internal Affairs is made aware of a complaint that due to its scientific nature would be better investigated by the Accrediting Body, Internal Affairs may forward such complaint to the Accrediting Body for investigations. FSU and Internal Affairs will look into the Quality Assurance aspect of the complaint. If there is a resulting corrective action, it will be implemented within a

reasonable time. If guidance is needed on how to correct the issue, an accredited outside agency may be utilized. In the event of a procedural or analytical error, the incident should be investigated by the Forensic Services Supervisor and the Investigations Lieutenant.

7.5.3. If complaints pertaining to inspection activities or results of inspections occur, the complaints shall be made to the supervisor of Forensic Services or the Lieutenant, if directed at FSU. Under no circumstance shall a civilian employee below the rank of supervisor or Technical Manager handle an external complaint personally.

Complaints pertaining to personal conduct shall be brought to the attention of the Lieutenant. The Lieutenant has the following options to investigate:

- Refer the complaint back to the FSU supervisor, if the complaint is relatively minor.
- Handle the complaint personally.
- Refer the complaint to the Captain of the Investigations Bureau.
- Involve Internal Affairs.
    - Internal Affairs shall be notified of any complaint pertaining to conduct, which is "criminal" or a serious breach of Escondido Police Department policies on personal conduct.
    - The Lieutenant shall remain apprised of any on-going investigations by Internal Affairs, unless the Lieutenant is a subject of the investigation.

In any of the above scenarios, it is highly recommended that the Captain of Investigations be informed of the nature of the complaint and the on-going investigation. If the complaint is of a serious nature or if Internal Affairs is involved or aware of the complaint the Lieutenant shall notify the Captain of Investigations and shall keep the supervisors informed of all activities pertaining to the allegation.

7.5.4. The Forensic Services Supervisor shall be responsible for all decisions at all levels of the handling process for complaints and appeals. Any complaint pertaining to inspection activities or any complaint pertaining to personal conduct, which may have influenced inspection activities, shall be brought to the attention of the Technical Manager

(if different). The Technical Manager shall investigate the possible breach of the quality system as a potential non-conformance. This investigation must be coordinated with any other investigation(s). An investigation on the personal conduct of an inspector could prove to be unsubstantiated, yet still amount to a non-conformance to FSU Quality Assurance System. Likewise, it could be determined that personal misconduct by a FSU employee did occur, but without a breach to the Quality Assurance Program.

7.5.5. Investigations and decisions on appeals shall not result in any discriminatory actions by FSU or any of its personnel.

7.6. COMPLAINTS AND APPEALS PROCESS

7.6.1. Complaints and appeals shall be handled per the Escondido Police Department Instruction 1.12 Civilian Complaint Reception and Investigation Procedure. The following is the process for handling complaints and appeals:

A. Receive the complaint as mentioned in 7.5.3. It is highly preferable that the complaint be in written form, via letter, email, legal notification, etc. However, this is not mandatory. A person may file a complaint by telephone or by coming to the Escondido Police Department and speaking personally with a supervisor.

B. Validate that the complaint is an actual complaint. Forensic Services is not obligated to investigate minor infractions from anonymous persons or suspects of crimes to which the unit is investigating.

C. Decide who will investigate the allegation as well as the extent of the investigation- see 7.5.3

D. Record and track the complaint investigation. This shall include:

1) Maintaining notes on all investigation activities.

2) If the allegation is substantiated, determine the actions to resolve them.

a. If it is determined that a breach to the Quality System occurred, the Technical Manager shall conduct a “root cause analysis” at this point.

b. A prior decision on which entity will investigate the

allegation may be changed at this time if it is determined that the infraction is lesser or greater than originally perceived.

E. Ensure that all appropriate action is taken.

1) This may be completed internally; by another entity, e.g. Personnel or Professional Standards; or by a combination of investigative entities.

2) The Technical Manager shall ensure that any recommended "Corrective Actions" are implemented and followed up to examine the effects.

a. In some instances, the Technical Manager might have to review past case-work. This could be a long and time consuming process.

b. In some instances, re-training and re-testing may be part of the corrective actions.

c. In some instances, the validity of policies and procedures could be questionable and subject to modifications.

7.6.2. The Forensic Services Supervisor is responsible for gathering any and all information to validate or refute the allegation. However, if the investigation is being conducted by another entity, e.g. Internal Affairs, then that entity may elect to assume the responsibility to collect information pertaining to the complaint.

7.6.3. It is not the policy of the Escondido Police Department to provide complainants with progress reports of the investigative activities pertaining to their complaint. However, FSU may provide the complainant, upon their request, with information pertaining to the investigation in those circumstances where the investigation was conducted primarily by another entity. FSU shall not discuss the

outcome with the complainant, but shall inform the complainant of the entity responsible for the investigative outcome.

7.6.4. Any correspondence to the complainant or appellant shall be made by persons other than those involved in the inspection activities or activities in question.

7.6.5. If possible, the Lieutenant or supervisor of FSU, or Internal Affairs should give notice at the end of the complaint or appeals handing process to the complainant or appellant.

7.6.6. If the investigation is being handled by the Accrediting body, the complaints and appeals shall be handled per the accrediting body instructions.

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8. MANAGEMENT SYSTEM REQUIREMENTS

8.1. OPTIONS

8.1.1. General - The FSU maintains a management system that is capable of achieving the consistent fulfillment of the requirements of ISO/IEC 17020:2012 in accordance with "Option A" requirements.

8.1.2. Option A – The management system of the FSU shall address the following:

- Management System Documentation (see 8.2)
- Control of Documents (see 8.3)
- Control of Records (see 8.4)
- Management Review (see 8.5)
- Internal Audit (see 8.6)
- Corrective Actions (see 8.7)
- Preventative Actions (see 8.8)
- Complaints and Appeals (see 7.5 & 7.6)

8.2. MANAGEMENT SYSTEM DOCUMENTATION

8.2.1. As of August 2017, the management of Forensic Services consists of a supervisor who is in charge of FSU. The unit is overseen by the

Lieutenant of the Criminal Investigations Section. Both of these officials have witnessed thorough commitment from the top administrators of the Escondido Police Department. The Chief, Captain and Lieutenant of Investigations fully support a Quality Assurance Plan for FSU based upon International Standards. The Lieutenant and supervisor of FSU are committed to establishing, documenting, and maintaining the policies and objectives for fulfillment of International Standard 17020:2012.

8.2.2. Evidence of commitment to the development and implementation of this management system and the monitoring of activities for compliance to the International Standard by FSU management is illustrated by its annual internal audits, management reviews, preventive actions, corrective actions, and compliance to the Quality Assurance Program.

8.2.3. Forensic Services shall appoint a Technical Manager who, irrespective of other responsibilities, has the responsibility and authority that include:

- Ensuring that processes and procedures needed for the management system are established, implemented and maintained; and

- Reporting to top management on the performance of the management system and any need for improvement.

8.2.4. Forensic Services maintains within its office space the *Quality Assurance Materials* binder and Manuals that list and specify the documents maintained by the unit and where, within those documents, are located the policies and procedures that relate to the requirements of ISO/IEC 17020 and the supplemental requirements of the unit's accrediting body. All of these documents are also stored on FSU S:/drive.

The clauses numbered within this Quality Manual correspond to the clauses numbered in ISO/IEC 17020:2012.

8.2.5. All inspectors have access to all files on the FSU S:/ drive. Within the "ISO" file are the latest revisions of the Quality Assurance Manual, Training Technical Procedures Manual, Latent Print Analysis Technical Procedures Manual, Latent Print Development Technical

Procedures Manual, Crime Scene Technical Procedures Manual, all worksheets, logs and forms.

8.3. CONTROL OF DOCUMENTS

8.3.1. Forensic Services maintains control of its documents that relate to the quality system through a comprehensive document control program. These documents are listed on The Document Control Ledger.

8.3.2. The procedures for the document control program are as follows:

A. Documents are initially made by either the Technical Manager, Forensic Services Supervisor, or Specialist. Large documents (manuals) or documents of high importance shall be made with input from the above persons. It is recommended that first-time documents be examined thoroughly prior to making them official. This can be done by distribution to the unit as drafts (clearly marked as drafts) and requesting everyone's input. Initial documents shall comply with the requirements of 17020, amplification documents for the international standard and supplemental requirements of the accrediting body.

B. Documents shall be reviewed and authorized, at least by the Technical Manager. This shall take place during the internal audit. Changes to a document may be made during other times of the year if a change is warranted and if, in the opinion of the Technical Manager, the change should not wait unit the annual document review.

C. Changes to documents are identified by three methods:

1) Document Control Ledger is maintained which lists all FSU documents, their version, original date, dates of revisions, and a brief description of the revisions.

2) FSU manuals contain a revision section-usually the last section of the manual. This section shall list by date and thoroughly describe any revisions to the manual.

3) A copy of obsolete manuals and standard operating procedures shall be retained for five years after being deemed obsolete. They shall be retained in an electronic file named "Obsolete".

D. All inspectors have access to all files in the FSU S:/ drive. Within this drive are the latest revisions of the Quality Assurance Manual, Training Technical Procedures Manual,

Latent Print Analysis Technical Procedures Manual, Latent Print Development Technical Procedures Manual, Crime Scene Technical Procedures Manual, all worksheets, logs and forms.

E. Documents (e.g. forms, worksheets and logs) shall be legible and readily available. Documents are identified by a specific form/worksheet/log number (e.g. Form 14.0). These documents can be accessed on the FSU S:/drive and/or printouts are readily available in the FSU laboratory.

F. Police narratives or reports received from other divisions of the Escondido Police Department or other agency shall not be distributed by members of Forensic Services to anyone outside the unit except for the following: unless they are distributed as part of the FSU case file, discovery request from the District Attorney's Office, or when requested for other forms of forensic examination.

Any documents of external origin are controlled on the Document Control Ledger and identified with a respective label (e.g. ULW User Guide).

G. When a document becomes "obsolete", for whatever reason, an electronic copy shall be retained in FSU S:/ drive in a file titled "Obsolete". Obsolete versions shall be retained for five years following the obsolete designation. All members of FSU shall be notified to collect and destroy hard-copies and/or delete electronic copies retained in their tablet devices or personal computers whenever a document version becomes obsolete.

8.4. CONTROL OF RECORDS

8.4.1. This section (8.4) outlines the procedures for records. Records are identified by the Escondido Police Department's "Case Number". All work performed by Forensic Services shall have a Case Number.

Case records may include hand written notes, sketches, etc. The documents included in a case record may also include emails from attorneys or police officers (any rank), evidence impound sheets, copies of warrants, court notifications, etc. The test for completeness shall be that in the absence of the original specialist, another competent specialist could evaluate what was completed and interpret the data.

Where appropriate, observations shall be preserved by photographs and evidence documented by generally accepted methods, e.g. scene sketches or fingerprint lifts.

Fingerprint verifications of identification and suspect exclusion results shall be checked by a second person (a competent specialist). The case record shall indicate such verifications have been carried out and by whom.

Notations on pages (pagination, initials, and date) shall be as directed in section 7.3 of this Quality Manual.

Writing within the case files shall be done using ink or other permanent medium.

When a test result or observation is rejected, the reason(s) shall be recorded.

Forensic Services use pre-made and controlled forms, logs, and worksheets for different assignments. These forms help define what is appropriate information for various applications. The standard operating procedures guide FSU specialists on what is appropriate to include in the case files.

Opinions and interpretations within case files may only be offered when appropriate and only by specialists competent to render them. The procedures for opinions and interpretive statements are located in the Latent Print Analysis Technical Procedures Manual Section 2 "Method of Friction Ridge Examinations"

Verification of results by a second competent specialist is required for some of the opinion-type results rendered in Fingerprint Analysis see Section 2 "Methodology of Friction Ridge Examinations" and Section 7 "Verification" in the Latent Print Analysis Technical Procedures Manual.

It is the policy of the Forensic Services Unit to conduct Technical Reviews of cases. Technical Reviews are conducted by any competent FSU personnel on 100% of cases. See Section 7 "Verification" in the Latent Print Analysis Technical Procedures Manual and Section 6.2.4 "Crime Scene Reports" in the Crime Scene Technical Procedures Manual for the procedures on conducting Technical Reviews.

See Section 7.4.5 of this manual for Forensic Services' procedures for handling Amended Reports.

Forensic Services' cases shall be maintained on the Shared drive FSU S:/ drive for digital cases. Cases that are hard copies are stored in the File Room in the Escondido Police Department Records Division.

The Escondido Police Department Records Division is responsible for case records retention and disposition. Official narratives are retained in the Escondido Police Department Records Division, which is maintained by the Escondido Police Department.

Access to Forensic Services is controlled as defined in Section 6.2.1 of this manual. The file cabinet shall be lockable. FSU is only accessible by prox card and has restricted members with access. Keys to the room shall be kept in an area known only to members of the unit.

Cases may be retrieved from the file cabinet by FSU personnel only. Retrieved files shall be returned to the file as soon as the reason for their retrieval is satisfied.

8.4.2 Forensic Services shall retain case records until, at least, the case is adjudicated and either a sentence is served or all appeals have been exhausted. Official narratives are retained in the Escondido Police Department Records Division, which is maintained by the Escondido Police Department. All other case information, e.g. notes, data, etc. are retrievable only by members of Forensic Services. Case photos are to be uploaded to the cloud based inventory platform. Access to each photo is recorded in the "history" of the image. This can be accessed at any time. However, evidence recovered, e.g. biological swabs, etc. may be in the control of another unit or agency, such as Escondido Police Department Property & Evidence Division or the San Diego County Crime Laboratory. Forensic Services shall retain all latent prints recovered by personnel or detectives until the work has been completed on the case. At that time, the evidence is returned to the Escondido Police Department Property & Evidence Division.

All information relating to casework shall remain confidential as stated in the Employee Non-Disclosure Agreements.

8.5. MANAGEMENT REVIEW

8.5.1. General

8.5.1.1. Forensic Services reviews yearly its management system in order to ensure its continuing suitability, adequacy and effectiveness and to introduce necessary changes of improvements. This review will evaluate the unit's policies and procedures related to the fulfillment of ISO/IEC 17020 and the supplemental requirements of the accrediting body.

Upon completion of the review, the Technical Manager shall analyze the results of the review and discuss any changes

necessary to increase the unit's effectiveness and to make improvements in policy and procedures. Changes to the Management System shall be monitored to ensure the changes are implemented in a timely manner.

8.5.1.2. The management review shall be conducted yearly and will review the management system for the prior year. The Technical Manager shall conduct the management review. The Technical Manager has been deemed competent to conduct the management review.

8.5.1.3. Copies of each year's management review shall be retained for at least ten years following the review. The management reviews are located in the FSU S:/drive in the Folder Management Reviews within the ISO folder and in the Quality Material Binder.

8.5.2. Review Inputs

The input to the management review shall include, but is not limited to, the following information:

A. The results of internal and external audits

B. Feedback from detectives and interested parties related to the fulfillment of this International Standard

C. The status of preventive and corrective actions

D. Follow-up actions from previous management reviews

E. The fulfillment of objectives

F. Changes that could affect the management system

G. Appeals and complaints

H. Impartiality risk identification

I. Adequacy of current human and equipment resources

J. Projected workloads

K. The need for training of both new and existing staff

L. Effectiveness of systems established to ensure adequate competence of the personnel

M. All records that required a resolution to ensure that any

appropriate preventive or corrective action is implemented when latent print examination conclusions differ

8.5.3. Review Outputs

The outcomes, summaries and requests generated from the management review's "inputs" shall include decisions, actions and recommendations related to:

A. Improvement to the effectiveness of the management system and processes

B. Improvements to Forensic Services' inspection activities related to the international standard

C. Resource needs (personnel and equipment)

8.6. INTERNAL AUDITS

8.6.1. Forensic Services conducts internal audits to ensure the inspection activities and management system complies with ISO/IEC 17020 and the supplemental requirements of its accrediting body. A completed internal audit shall be located in the FSU S:/drive in the folder Internal Audits within the ISO folder and a print-out of the latest version shall be located in the *Quality Assurance Materials* binder.

8.6.2. Internal audits shall be planned. The Technical Manager shall conduct the audit and shall thoroughly review prior audits and recent corrective actions. If the Technical Manager conducts casework, another member of FSU or another employee from an accredited lab that has been trained in audits will audit the Technical Manager's work

8.6.3. To ensure that all elements of the quality system are checked for compliance, the Technical Manager shall use a checklist that covers all the elements of ISO/IEC 17020, ILAC amplification documents, and supplemental requirements of the accrediting body. The Technical Manager shall check that the management system is implemented and effective.

8.6.4. Internal audits shall take place yearly. The Technical Manager reserves the right to conduct additional audits as he or she deems necessary. The scope, dates, and schedules are planned and carried out in accordance with documented procedures.

8.6.5. Pertaining to Internal Audits:

A. The Technical Manager shall conduct internal audits. The Technical Manager has been deemed competent to conduct audits.

B. The Technical Manager shall not review his or her own work, if the Technical Manager provides inspections for the unit. Another competent specialist will review the Technical Manager's work. If someone in FSU is not qualified to conduct an audit on the Technical Manager's work, then someone from another accredited lab that is competent to conduct audits will be utilized.

C. All Forensic Services personnel shall be informed of the audit results that pertain to the inspections. The FSU supervisor (if different) shall be informed of the audit results that pertain to inspections and the management system.

D. Any actions taken as a result of an internal audit shall be implemented in a timely manner. See section 8.7 "Corrective Actions".

E. The Technical Manager shall identify and report on any opportunities for improvement.

F. The results of the internal audit shall be documented. These may be filed with the "Management Review" which takes place after the audit and which are based, partially, on the results of the audit.

8.7. CORRECTIVE ACTIONS

8.7.1. Corrective actions are steps that are taken to eliminate the causes of existing non-conforming work in order to prevent recurrence and to address and correct any past or present incorrect inspection result(s). The Technical Manager, together with the unit supervisor (if different) and the Lieutenant, if necessary, is responsible for the management of non-conforming work. The Technical Manager shall make an evaluation of the significance of the non-conforming work and shall take immediate action, including, if warranted, the halting of work and withholding reports. Where non-conforming work results in the issuance of false reports, the customer(s) or detective(s) shall be notified. Where work has been halted, the Technical Manager, together with the FSU supervisor (if different) shall be responsible for authorizing the resumption of work when they are satisfied that the

corrective actions implemented will prevent a recurrence of the nonconforming work.

Policy: Forensic Services shall use the feedback mechanisms within its quality assurance program, in addition to observations by Supervisors and the Technical Manager (if different), to identify non-conforming work. Once identified, a root cause analysis shall be conducted and immediate measures taken to correct the non-conforming work and to prevent a reoccurrence.

8.7.2. Root Cause Analysis: The most important step in correcting non-conforming work is the root cause analysis. An understanding of "why" the non-conformance occurred is essential to prevent it from happening again. Often a root cause analysis is quick and easy, i.e. isolated mistakes. Other times it may be quite involved and may go well beyond the initially detected non-conformance, e.g. faulty work due to a poorly written procedure. Where appropriate and dependent on the class findings, the Technical Manager shall interview the personnel involved, understand the work which was supposed to be completed, examine the procedures and/or manuals associated with the work, understand what went wrong along the way to completing the work, and determine why it went wrong and implement corrective action when necessary. If a finding is considered a class I deficiency, a root cause analysis shall be completed. In less severe cases that do not affect the work product (e.g. Class II and Class III deficiency categories), the Technical Manager shall determine the need for root cause analysis.

8.7.3. Corrective actions shall be appropriate to the impact of the problems encountered, and may take into consideration the root cause of the problem, the work history of the involved specialist(s), the severity and impact of the non-conforming work, how many cases are involved, and the resource needs of the unit.

8.7.4. The procedures for handling non-conformities are described here:

A. Identification of non-conformance through one or more of the following feedback mechanisms:

1) Observance by the FSU supervisor or the Technical Manager (if different)

2) Technical review of casework

3) Customer complaint or poor customer satisfaction survey (see section 7.6)

4) External or internal audit

5) Other means

B. Root cause analysis, when applicable (see section 8.7.2)

C. Correcting non-conforming work (also see section 7.4.5 on "Amending Reports"). This may be a lengthy endeavor if multiple cases are involved over a period of time-this step may continue while the following steps are addressed.

D. Evaluate the need for actions to ensure that the non-conformance(s) does not recur.

E. Implementing the above actions in a timely manner.

F. Recording the results of the immediate actions.

G. Reviewing the actions, at a later date (to be decided as part of the above steps) to evaluate the effectiveness of the actions.

The policies and procedures for feedback and corrective action ensure that:

A. The responsibilities and authorities for the management for nonconforming work are designated, and actions are defined and taken when nonconforming work is identified.

B. An evaluation of the significance of the nonconforming work is made.

C. Corrective action is taken immediately, together with any decision about the acceptability of the nonconforming work.

D. Where necessary the detective is notified.

E. The responsibility for authorizing the resumption of work is defined.

8.8. PREVENTIVE ACTIONS

8.8.1. Forensic Services maintains a set of procedures for conducting preventive actions. Preventive actions are steps that are taken to remove the causes of potential nonconformities and potential situations that are undesirable.

The preventive action process is designed to prevent the occurrence of nonconformities or situations that do not yet exist. It tries to

prevent occurrence by eliminating causes. While corrective actions are intended to prevent recurrence, preventive actions are intended to prevent occurrence. Both are designed to prevent nonconformities.

8.8.2. The degree to which a preventive action is applied shall be appropriate to the probable impact of the potential problem.

8.8.3. The procedures for preventive actions are as follows:

A. Identify potential nonconformities and their causes. Staying current of NIST guidelines, reading professional journals, and reviewing recent court decisions are some means of discovering opportunities for improvement. Monthly meetings will allow personnel to explore other ways of improvement.

B. Evaluate the need for action to prevent the occurrence of nonconformities. It is imperative that the Technical Manager realizes that NIST standards or guidelines, recent court decisions, and current political policy help shape and define the requirements of the forensic accrediting bodies.

C. Determine and implement the action required. The action required might be a modification to or creation of a standard operating procedure, the purchase of new equipment, additional training for personnel, or any combination. Such action shall:

1) Be discussed among the Lieutenant and the Technical Manager.

2) Determine if additional resources, funding and/or training is required and whether these be attained in the immediate or near future.

3) Devise a plan or protocol to implement the plan.

D. Implement and record the action. The "Preventive Action Report", shall be utilized to document the preventive action.

E. Review the effectiveness of the preventive actions taken. The review might be immediately following the action or several months later, depending on the type and complexity of the action. If the preventive action did not produce the desired outcome, it is not necessarily a failure; but it will require re-visiting.

8.8.3.1. Risk Assessment is a pro-active process to identify improvements or potential sources of either technical or management systems-related non-conformities. Opportunities for risk assessment may be initiated by the FSU personnel or during internal audits.

A risk assessment review can be conducted at any time to evaluate including but not limited to the following areas:

- Risk to Impartiality
- Risk to Confidentiality
- Risks to Customers
- Risk to the Quality System
- Risk to Analysis

A review panel may be created to improve the assessment. The members of the review panel may consist of any combination of FSU personnel, City of Escondido personnel, approved contractor, personnel from an outside organization or accredited agency. When improvement opportunities are identified, a Preventative Action Worksheet should be completed and submitted to the Forensic Services Supervisor. Upon review and approval by the Forensic Services Supervisor, the plan will be implemented. The Forensic Services Supervisor will monitor the improvement opportunities plan to ensure that they are effective.

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9. USE OF SYMBOLS

9.1. ACCREDITATION SYMBOL USAGE

The Forensic Services Unit is choosing to not use any A2LA Accreditation Symbol. If in the future, this changes, Forensic Services shall ensure the following, when the accreditation symbol or the business name is used:

- Only used by the accredited Forensic Services Unit.
- The symbol is specific to the A2LA Forensic Inspection Body accreditation program.
- Non-accredited testing/inspections do not contain the accreditation symbol or statement.

- No misleading or unauthorized representation of accreditation status.
- The unit accepts responsibility for testing/inspection results, not the accreditation body.
- No implication that a product, process, system, or persons is approved by the accreditation body.
- Reference to accreditation shall not be included in reports outside the scope.
- Opinion or interpretations included in reports are based on those results for which accreditation is held.
- Opinions or interpretations outside the scope of accreditation but based on those results for which accreditation is held are clearly identified as such.

9.2. DOCUMENTS CONTAINING ACCREDITATION SYMBOL

Forensic Services is choosing to not have any document contain the A2LA Accreditation symbol.

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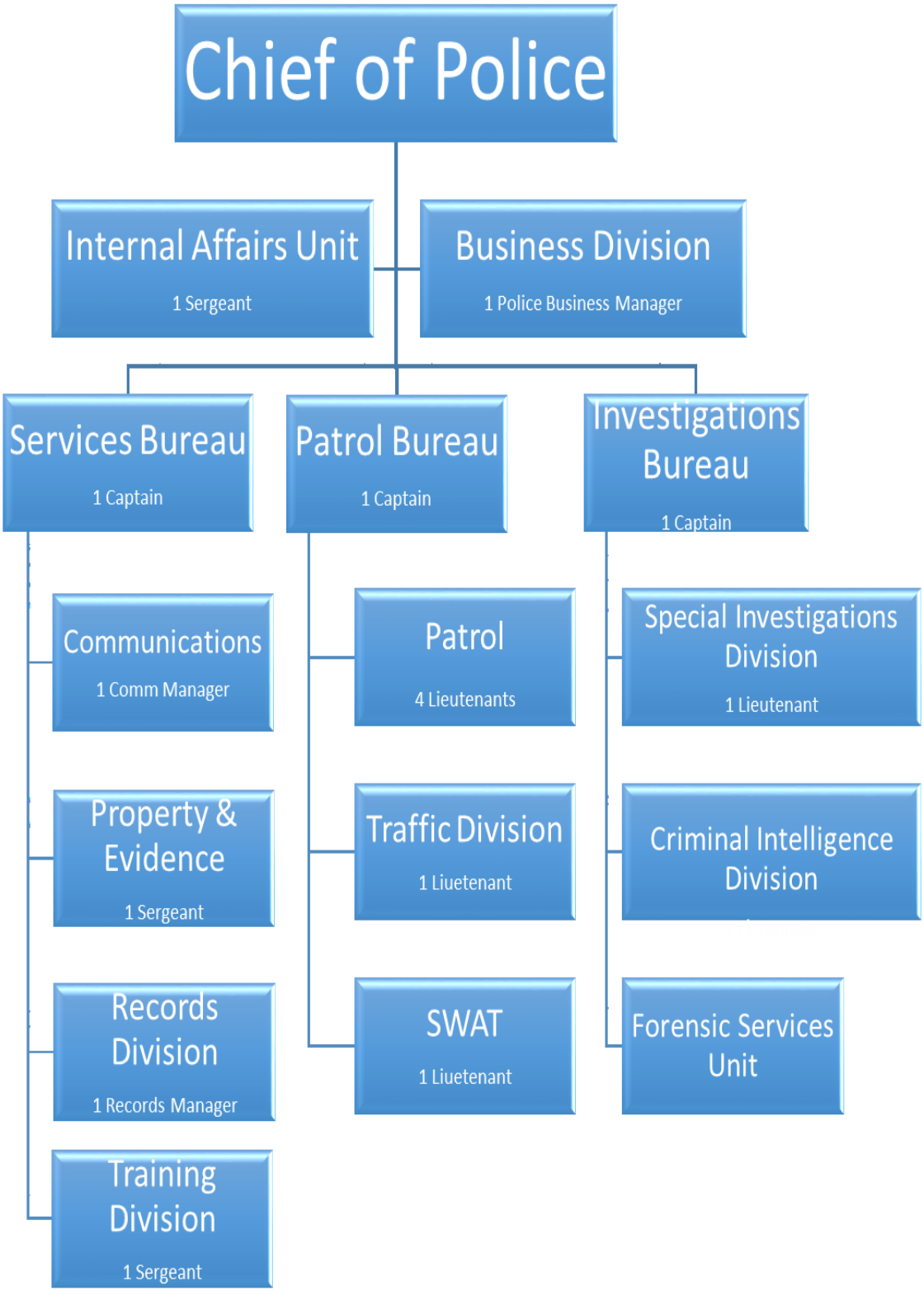
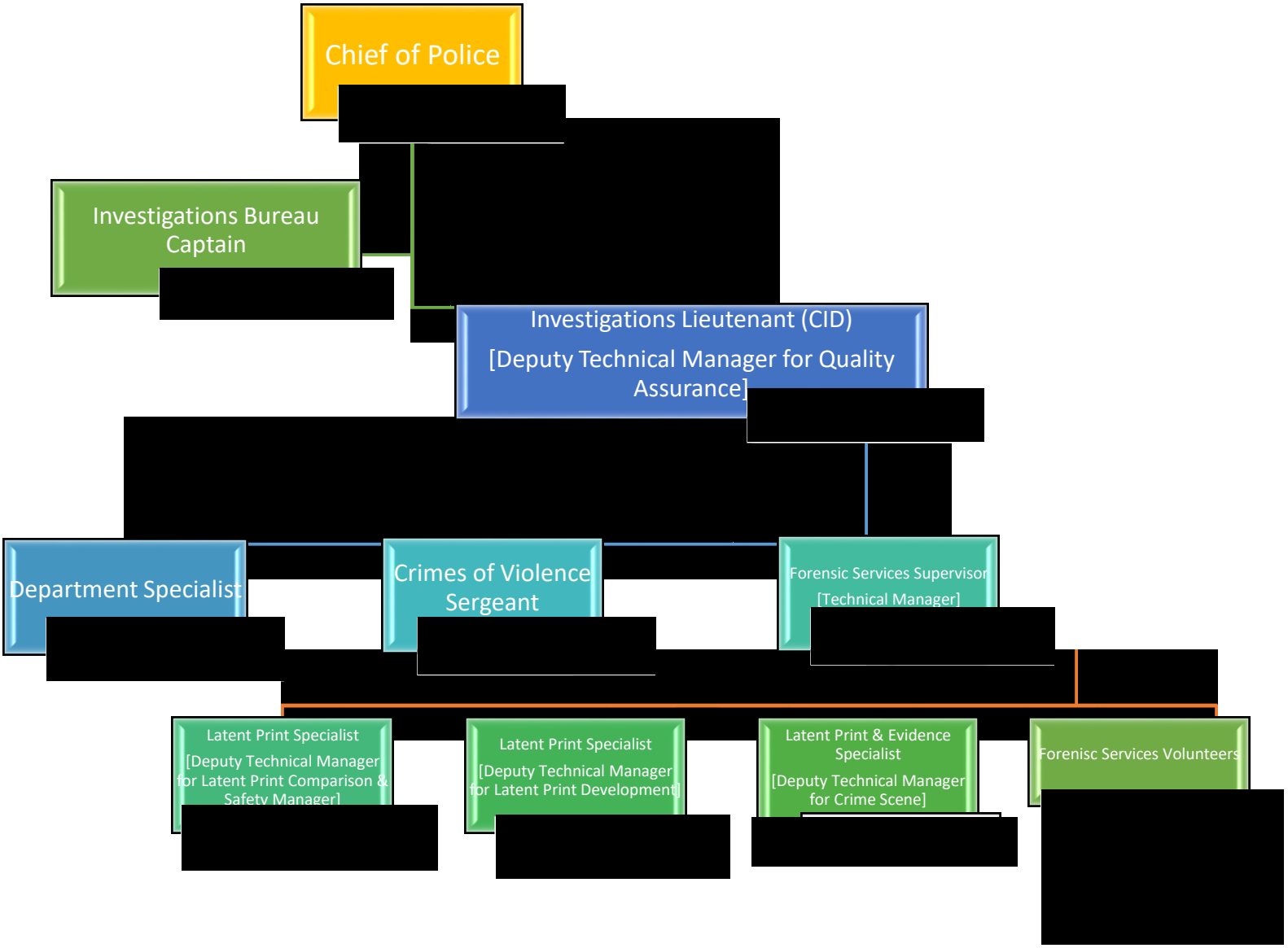
10. APPENDIX A – ORGANIZATIONAL CHARTS





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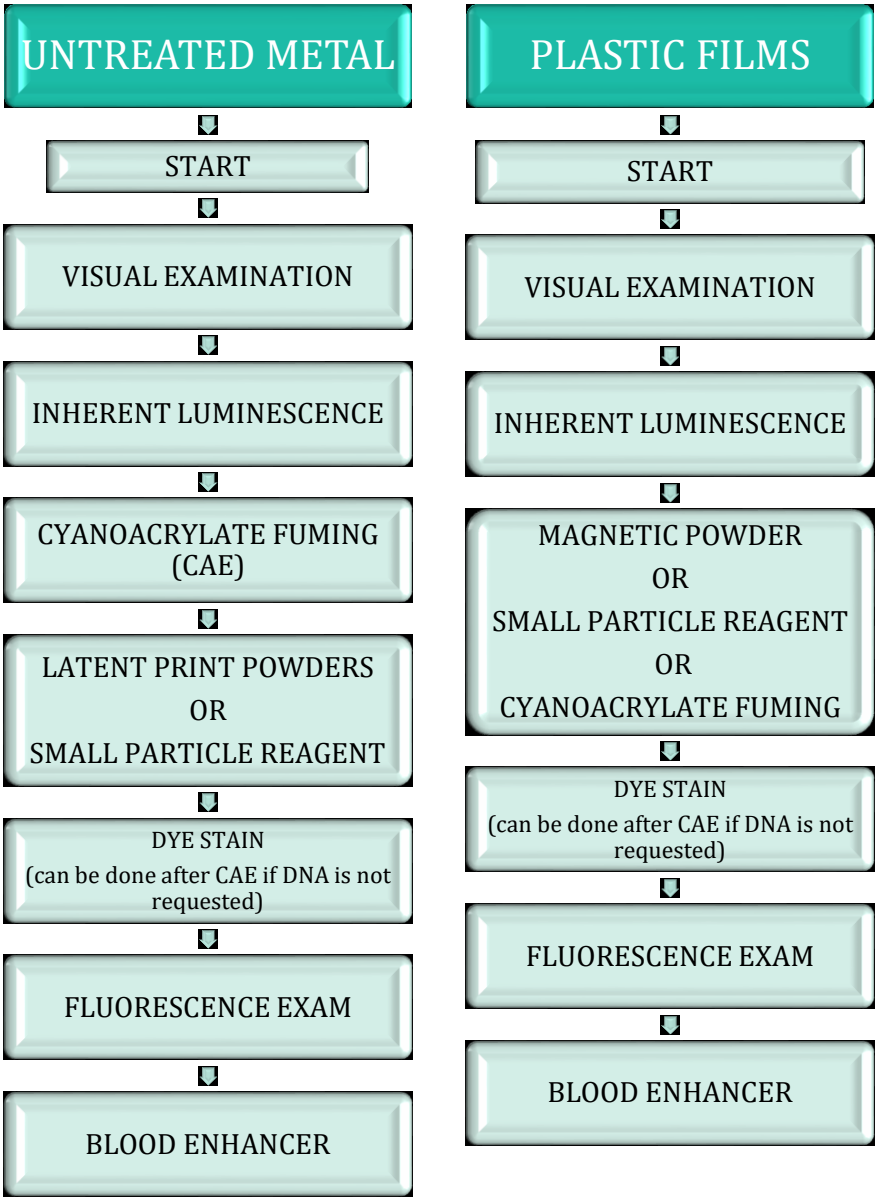
11. APPENDIX B – LATENT PRINT DEVELOPMENT GUIDELINES FLOW CHART

LATENT PRINT DEVELOPMENT GUIDELINES FLOW CHART



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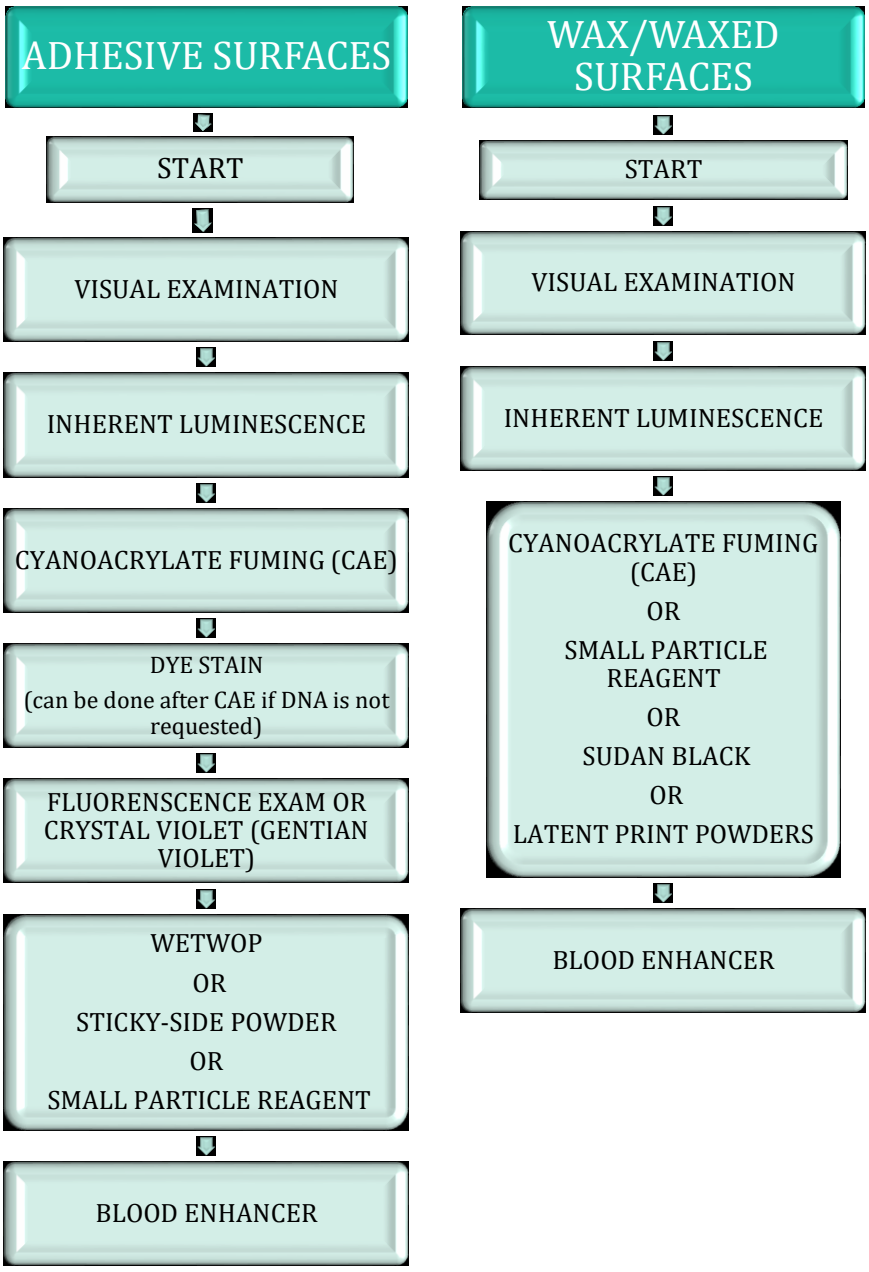

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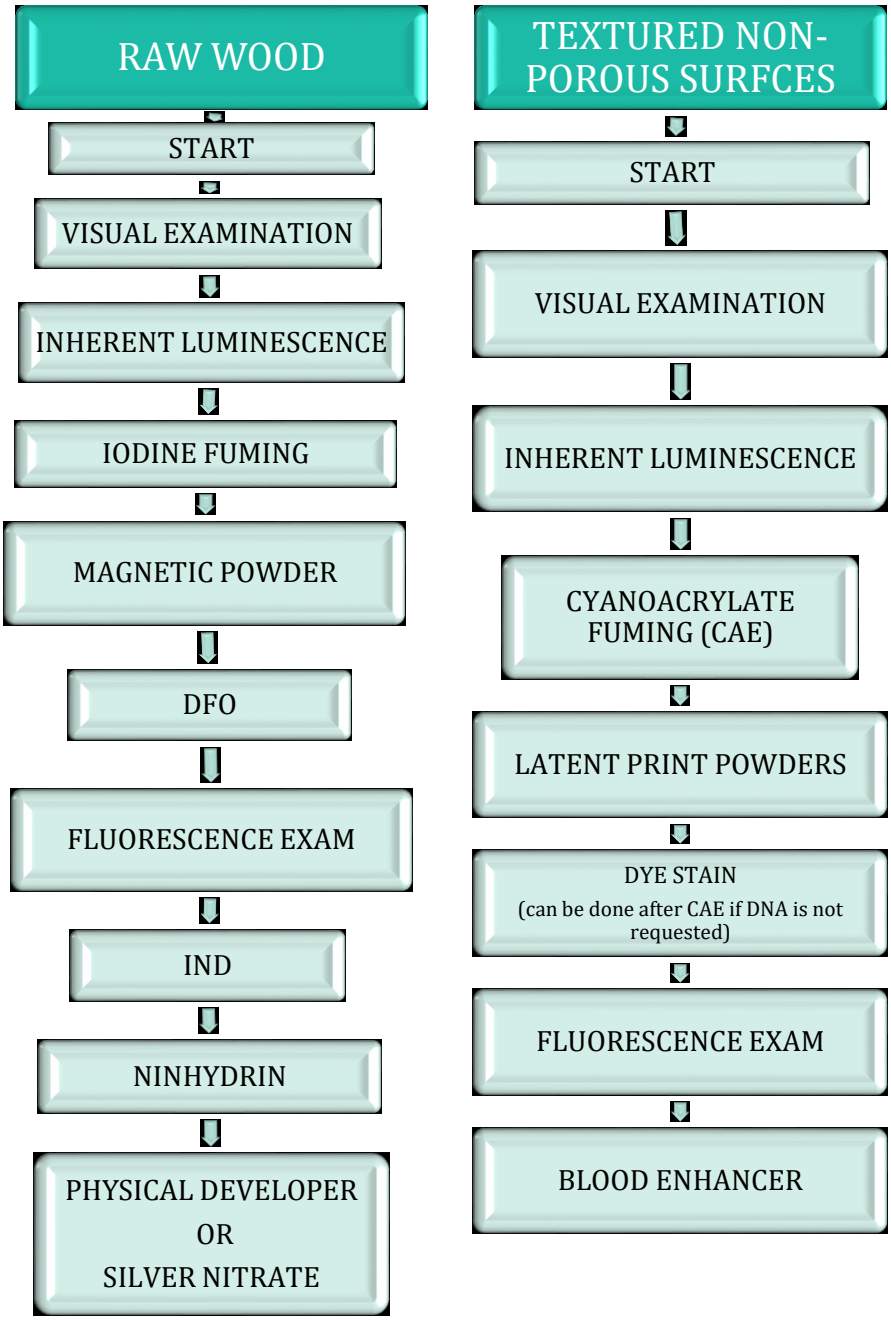

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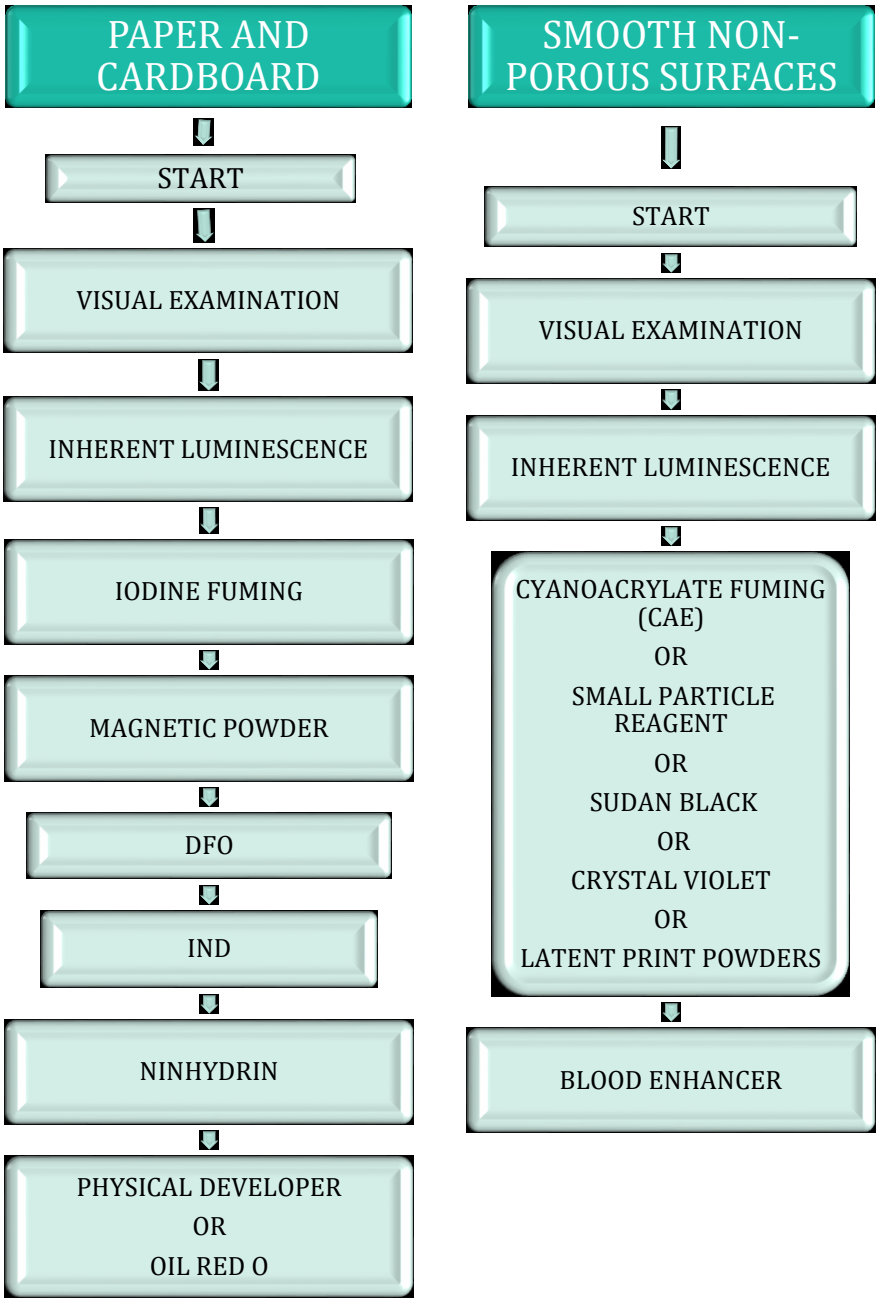

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12. APPENDIX C - ABBREVIATIONS

Abbreviations

"A"	Solution A
"B"	Solution B
3M	3M
3M	3M
A	Arrowhead Forensics
AAS	Automated Archive System
AB	Amido Black
ACC	Acutrans
ACE-V	Analysis, Comparison, Evaluation – Verification
AF	Acid Fuchsin
AF	Acid Fuchsin
AFIS	Automated Fingerprint Identification System
AL	Ace Fingerprint Equipment Labs
ALS	Alternate Light Source
AM	Ammonia
AP	Adhesive-Side Powder
APM	Advantar Performance Materials
APPROX	Approximately
AQ	Aquous Solution
AR	Armour Forensics
AR	Administrative review
AR	Adhesive Ruler
ARJIS	Automated Regional Justice Information System
ATF	Bureau of Alcohol, Tobacco, Firearms and Explosives
AX	Ardrox
B	Black
BC	Bichromatic
BDH	BDH/VWR Analytical
BEP	Black Emerald Powder
BG	Blitz Green
BLU	Blue
BP	Black Powder
BR	Brown, Blitz Red
BRP	Black Ruby Powder
BS	Buffer Solution, Blue Star
BU	Butane
BVDA	BVDA Industries
BY	Basic Yellow
C	Concentrate / Celsius
CABIS	Cogent Automated Biometric Identification System
CA-DOJ or Cal-DOJ	California Department of Justice
CAE	Cyanoacrylate
CAE	Cyanoacrylate Ester
Cal	Caliber
Cal-ID	California Identification
CB	Coomassie Blue

CD	Compact Disc
CDL	California Driver's License
CI	Cal-ID
CII #	California Identification Index Number (also SID)
CODIS	Combined DNA index system
COP	Crimes of property
COV	Crimes of violence
CP	Comparison
CV	Curriculum Vitae, Crystal (gentian) Violet
DA	District Attorney
DAI	District Attorney Investigator
DAS	Document Archive System
DCS	Digital Capture System
DDA	Deputy District Attorney
DEA	Drug Enforcement Agency
DET	Detective
DFO	1-8,Diazafluoren-9-one
DI	Distilled Water
DMV	Department of Motor Vehicles
DNA	Deoxyribonucleic acid
DOB	Date of Birth
DOJ	Department of Justice
DRW	Dilute Redwop
DVD	Digital Versatile Disc or Digital Video Disc
E	Ethanol, East
EA	Ethyl Alcohol
EAC	Ethyl Acetate
ECL	East curb line
EF	Erez Forensic Technology
EFD	Escondido Fire Department
ELIM	Elimination
EMD	EMD Millipore Sigma
EPD	Escondido Police Department
ER	Emergency Room
ESDA	Electrostatic Detection Apparatus
EV	Evident
EXT	Exterior
F	Fahrenheit
FBI	Federal Bureau of Investigations
FET	Forensic Evidence Technician
FF	Foster + Freeman
Fl	fluid
Fl oz	Fluid ounce
FP	Fingerprint, Flourescent Powder
FPN1	FP Natural 1
FPN2	FP Natural 2
FPU	Family Protection Unit
FR	Final Rinse
FS	Forensics Source
FSU	Forensic Services Unit
G	Gray / grams

GA	Glacial Acetic Acid
GET	Gang Enforcement Team
GL	Gellifters
GN	Green
GSR	Gunshot Residue
GSW	Gunshot Wound
GV	Gentian Violet
GW	Greenwop
HS	Hemastix
IAFIS	Integrated Automated Fingerprint Identification System
IAI	International Association for Identification
ID	Identification
IFO	In front of
INC	Inconclusive
IND	Indanedione
INT	Interior
ISO	International Organization for Standardization
JUV	Juvenile
K	Kjell Carlsson Innovation
KM	Kastle Meyer, Kenzo Mashiko
L	Left
L/S	Left Slant
LASER	Light Amplification by Stimulated Emission of Radiation
Lbs	pounds
LCV	Leuco Crystal Violet
LF	Left front
LI	Left Index Finger
LIC	License
LL	Left Little Finger
LM	Left Middle Finger
LNP	Lynn Peavy Company
LP	Left Palm, Latent Print(s)
LPA	Latent Print Analysis
LPC	Lightning Powder Company
LPD	Latent Print Development
LR	Left Ring Finger or left rear
LS	Lightning Spray
LT	Left Thumb
M	Methanol
MA	Maleic Acid
MAG	Magnetic
MBD	Molybdenum Disulfide
MCP	Major Case Prints
ME	Medical Examiner
MEI	Medical Examiner Investigator
MF	Medtech Forensics
MP	Magnetic Powder
MR	Magnetic Ruler
MS	Mikrosil
N	North
NCL	North curb line

NE	Northeast
NEF	Novec Engineering Fluid 7100
NetRMS	Network Report Management System
NIN	Ninhydrin
NO ID	No Identification (exclusion)
NTF	Narcotics Task Force
NU	Not Useable
NV or N/V	No Value
NW	Northwest
O	Orange
OC	Olin Chlor Alkali Products
ORO	Oil Red O
Oz	ounce
P	Petroleum Ether, pink
P/E, P&E	Property and Evidence
P/U	Pick-up
PASS	Passenger
PC	Penal code
PD	Physical Developer, Police Department
PF	Pioneer Forensics
PFLO	Photoflo
PH	Phenolphthalein
PMC	Palomar Medical Center
POE	Point of entry
POS	Positive
POSS	Possible
PR	Plastic Ruler
Q/Q	Quality and Quantity
R	Right
R/S	Right Slant
R6G	Rhodamine 6G
RA	Reagent Alcohol (denatured)
RAM	Rhodamine6G, Ardrox, 7-P-methoxybenzylamino-4-nitrobenz-oxa-1-3-diazole
RATT	Regional Auto Theft Task Force
RAY	Rhodamine 6G, Ardrox, Basic Yellow
RECD	Received
REG	Registered
RF	Right front
RI	Right Index Finger
RL	Right Little Finger
RM	Right Middle Finger
RP	Right Palm
RR	Right Ring Finger, Right Rear
RS	Rinse Solution
RT	Right Thumb
RTX	RTX
RW	Red Wop
S	Sirchie, Subject, South
SB	Suddan Black
SCL	South curb line

SD	Standard Dyes
SDPD	San Diego Police Department
SDSO	San Diego Sheriff's Office
SE	Southeast
SEM	Scanning Electron Microscope
SF	SPEC Forensics
SG	Silver/Gray Powder
SI	Siemens
SID #	State Identification Number (also CII)
SIU	Special Investigations Unit
SL	Safariland, Silver powder
SPR	Small Particle Reagent
SS	Stain Solution
SSP	Sticky-Side Powder
SW or S/W	Search Warrant, Southwest
TECH	Tech
TI	Tanner Industries
TR	Technical Review
TS	Training Solution
TTR	To the rear
UD	Un-du
ULW	Universal Latent Workstation
V or VIC	Victim
VEH	Vehicle
VIN	Vehicle Identification Number
VOC	VOC compliant
W or Wit	Witness, West, White
WCL	West curb line
WS	Working Solution
Y	Yellow
Z	Zippo Manufacturing Company

All standard state abbreviations are approved.

All standard time abbreviations are approved.

All standard abbreviations for measurements and weights, both US and metric, are approved.

millimeter……..	mm	
kiloliter……..	kL	1 kL = 1000 L
liter……..	L	1 L = 1000mL
milliliter……..	mL	1 mL = 0.001 L
kilogram……..	kg	1 kg = 1000 g
gram……..	g	1 g = 1000 mg
milligram……..	mg	1 mg = 0.001 g

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13. APPENDIX D - EQUIPMENT

For operating procedures or further specifications, refer to the user's guide for each specific piece of equipment.

Automated Fingerprint Identification System (AFIS)

AFIS is the transaction control system for electronic transfer and processing of print images. There are four workstations in FSU. This is the entry point for latent prints and tenprint fingerprint cards. The workstation is used to process latent and tenprint transactions, including searches and registrations.

Alternate Light Sources (ALS)

The Alternate Light Source is a specialized light that combines powerful illumination with optimum wavelengths to allow fluorescence (glowing) of different types of chemicals and evidence.

Color or Black & White Copier

The color or black & white copier is used to document evidence item(s) prior to processing, can be used to document developed latent prints, or can be used after processing. For example, copies are made of handwriting evidence prior to processing and to document prints after processing with ninhydrin.

Digital Camera

- Camera body
- Memory card
- Computer
- Printer or copier

DCS-5 System

- Camera body
- Computer
- Printer
- Color filters
- Copy Stand
- Various light sources

The electronic images captured on the DCS-5 are saved to a working folder. Case related images are to be uploaded to the cloud based inventory platform for long term storage.

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14. REFERENCES

The following is a list of reference books, journals, and newsletters that address the science of fingerprints. These books serve as a technical reference for the Forensic Services Unit. In addition to these references, manuals are listed that serve as administrative guides and instrumental use guides for the unit.

Books

- Ashbaugh, David R. *Quantitative-Qualitative Friction Ridge Analysis.* CRC Press, Florida, 1999.
- Cowger, James F. *Friction Ridge Skin.* Elsevier Science, New York, NY, 1983.
- Federal Bureau of Investigation. *The Science of Fingerprints.* US Government Printing, Washington, D.C.
- Federal Bureau of Investigation. *Chemical Formulas and Processing Guide for Developing Latent Prints*. Revised 2000.
- Fisher, B.A.J and D.A. Fisher (2012). *Techniques of Crime Scene Investigation, Eighth Edition*, Boca Raton, FL: CRC Press.
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- Lee, Dr. Henry C. *Advances in Fingerprint Technology.* New York, Elsevier, 1991.
- Masters, Nancy. *Safety for the Forensic Identification Specialist.* Lightning Powder Company, Oregon, 1995.
- Menzel, Roland. *Fingerprint Detection with Lasers*, 2nd ed. New York: Marcel Dekker, 1999.
- Mock, James P. *Basic Latent Print Development.* Lightning Powder Company, Oregon, 1993.
- Ogle, R.R. (2004). *Crime Scene Investigation and Reconstruction*, Upper Saddle River, NJ: Pearson Prentice Hall.
- Olsen, R.D., Sr. *Scott's Fingerprint Mechanics.* Charles C. Thomas, Springfield, IL, 1978.
- Police Scientific Development Branch. *Fingerprint Detection by Fluorescence Examination.* Heanor Gate, Derbyshire, England, 1990.

- Police Scientific Development Branch. *Handbook of Fingerprint Development Techniques*, Second Edition. Heanor Gate, Derbyshire, England, 1998.
- Sampson, W.C., K.L. Sampson, and M. Frank Shonberger. *Recovery of Latent Fingerprint Evidence from Human Skin.* 1997.
- U.S. Department of Justice, National Institute of Justice. (n.d.). *The fingerprint sourcebook*. Retrieved from U.S. Department of Justice Office of Justice Programs website: www.nij.gov

Journals

- Journal of Forensic Identification (International Association for Identification).
- Identification News (International Association for Identification) pre-1987.
- Journal of Forensic Sciences (American Academy of Forensic Sciences).
- Fingerprint Whorld (International Journal of the Fingerprint Society).

Organization Newsletters

- Southern California Association of Fingerprint Officers (SCAFO).
- International Association for Identification (IAI), California Division.
- Minutiae (Published by Lightning Powder Company).
- AFIS Internet Newsletter (AFIS Users Group).
- SWGFAST (Scientific Working Group on Friction Ridge Analysis, Study, and Technology).
- The Organization of Scientific Area Committees (OSAC) for Forensic Science.

Other Related Books

- Bodziak, William. *Footwear Impression Evidence: Detection, Recovery and Examination* (2nd edition)
- Fisher, Barry. *Techniques of Crime Scene Investigation*, 6th ed. Florida: CRC Press 1999.

- Saferstein, Richard. *Criminalistics: An Introduction to Forensic Science*, 6th ed., Englewood Cliffs: Prentice Hall, 1990.

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15. MANUAL REVISIONS

See Document Control for revision information.

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