

FORENSIC CERTIFICATION MANAGEMENT BOARD
INTERNATIONAL ASSOCIATION FOR IDENTIFICATION

Certification Program Operations Manual



BYLAWS, POLICIES AND PROCEDURES
FCMB-01-2020-C6
Originated 2017 - Revised 5/20/2022

Latent Print Certification, est. 1977.
Crime Scene Certification, est. 1990.
Forensic Art Certification, est. 1995.
Bloodstain Pattern Analysis Certification, est. 1996.
Footwear Certification, est. 1997.
Forensic Photography & Imaging Certification, est. 2000.
Tenprint Certification, est. 2002.
Forensic Video Analysis Certification, est. 2011.



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SCOPE

This document describes the requirements and policies for the FCMB Certification Boards and the applicants of Forensic Certification, using the IAI eCert System. The scope of the document is to establish user procedures, requirements, and responsibility. The policies and procedures contained herein have been approved by the Forensic Certification Management Board (FCMB) of the International Association for Identification (IAI) and are effective as of the date of publication. They are subject to periodic review and updating by the FCMB and its certification boards (see FCMB-16-2016 Organization Chart). Candidates and/or certified individuals participating in the certification program are expected to read sections 7 and 8 of this manual and abide by its policies and procedures.



1.0 Background, Functions and Purposes of the IAI-FCMB Certification Program

The IAI-FCMB (referred to as the FCMB) certification program does not discriminate in membership or certification opportunities based on gender, race, color, disability, religion, sexual orientation, national origin, age or any other characteristic protected by law. The FCMB recognizes the importance of impartiality with regard to its certification program and strives to maintain objectivity in all of its certification activities. All persons participating in the management of the program, the testing and evaluation of applicants and making the decision regarding the granting of certification are required to adhere to Conflict of Interest and Confidentiality Agreement policies.

- 1.1 The need to identify qualified individuals who can provide essential professional forensic services has long been recognized. In response to this need and to promote ethical and professional practices among its participants, the IAI Certification Program, as administered by the FCMB, was established to provide a program of certification in the profession of forensic identification, investigation, and scientific examination of physical evidence.
- 1.2 The certification boards were established to set qualifications of competency for those who practice specific disciplines within the forensic sciences; to establish voluntary certification testing of applicants who meet or exceed the training, educational, professional experience and knowledge requirements set by the specific certification board; and to annually review, and if necessary, revise the guidelines and qualifications, as well as the specific board's provisions in the operations manual.

The certification boards are responsible for, and shall not delegate its responsibilities, regarding certification, including developing, expanding and reducing the scope and criteria of the certification, granting or denying certification and recertification, and suspending or revoking certifications. Such decisions are made by the certification board subject to review and approval by the FCMB Director to ensure compliance with quality management system standards and program policies.
- 1.3 The certification program is managed by the FCMB Director. Additional administrative and financial management services are provided by the IAI as defined in a Management Services Agreement.
- 1.4 The current version of the FCMB Operations Manual (policies and procedures) will continually be posted on the IAI website for all stakeholder to have access.
- 1.5 The certification boards develop certification criteria, examinations (the form and content), determine the basis for awarding certification, document the validation behind schemes, and continually assess the criterion, the examinations and the supporting validation. The certification boards have the authority to censure, suspend or revoke certification in accordance with the provisions of this manual.
- 1.6 The FCMB is a subdivision of the IAI, a non-profit organization incorporated in the State of Delaware in 1967. The FCMB was established to provide oversight and guidance to certification programs in various forensic disciplines which operate under the auspices of the IAI. The certification boards operate under the guidance and oversight of the FCMB which reports to the IAI Chief Operations Officer (COO) and to the IAI Board of Directors (BOD's).
- 1.7 Impartiality



- 1.7.1 The FCMB shall document its structure, policies and procedures to manage impartiality and to ensure that the certification activities are undertaken impartially. The FCMB Director and Associate Directors (Management Team) is committed to impartiality and shall conduct a threat assessment as part of their management reviews. The FCMB understands the importance of impartiality in carrying out its certification activities, managing conflicts of interest and ensuring the objectivity of its certification activities.
- 1.7.2 The FCMB certification program does not discriminate in certification opportunities on the basis of gender, race, color, disability, religion, sexual orientation, national origin, age, or any other characteristic protected by law or applicable treaty. This would apply to all applicants, candidates, and certified persons.
- 1.7.3 No applicant shall be required to provide information regarding gender, race, color, disability, religion, sexual orientation, national origin, age, or any other characteristic protected by law or applicable treaty unless that information is necessary to provide appropriate accommodation to the applicant (e.g. an applicant with a disability may require special physical access to a facility or it may be inappropriate for a male proctor to be alone with a female applicant due to certain religious or cultural beliefs). Proctors are to be notified of any special needs' accommodations requested on the application.
- 1.7.4 Certification is not restricted to members of the IAI.
- 1.7.5 The FCMB shall be responsible for the impartiality of its certification activities and shall not allow commercial, financial or other pressures to compromise impartiality.
- 1.7.6 The FCMB will identify threats (actual or perceived) and investigate to ensure impartiality of relationships is maintained.
- 1.7.7 The FCMB shall analyze, document and eliminate or minimize the potential conflict of interests arising from its certification activities. The FCMB, as part of its management reviews, shall complete a threat analysis to identify any potential conflicts of interests.
- 1.7.8 Certification activities shall be structured and managed as to safeguard impartiality. This shall include balanced involvement of interested parties. The FCMB will identify the interested parties and evaluate their involvement in the certification program.

2.0 Terms and Definitions

- 2.1 **Appeal** A request for a reversal of a decision made by a certification board, the FCMB Director, or a Professional Review Board.
- 2.2 **CA** refers to the initials for Confidentiality Agreement. Confidentiality Agreement (also called a nondisclosure agreement or NDA) is a legally binding contract in which a person or business promises to treat specific information as a trade secret and promises not to disclose the secret to others without proper authorization.



- 2.3 **Censure** is a written reprimand for errant conduct which does not jeopardize certification status.
- 2.4 **Certificate** is the official document issued by the appropriate certification board to the applicant who successfully meets all the requirements for certification. Each certificate bears the name of the certified individual, discipline of certification, a unique numerical identifier, an expiration date, the embossed seal of the IAI and is signed by the chair and secretary of the appropriate certification board.
- 2.5 **Certification** The process by which a person demonstrates competency to reliably practice the discipline for which they have been certified by establishing training, knowledge, skill, ability and experience.
- 2.6 **Certification Board** is the body of subject matter experts in a particular discipline, charged with developing the requirements and process for certification. The certification board is also responsible for the design, validation, implementation and evaluation of test results to determine successful completion and subsequent issuance of certification.
- 2.7 **COI** refers to the initials for Conflict of Interest. Conflict of Interest occurs when an individual's personal interests – family, friendships, financial, or social factors – could compromise his or her judgment, decisions, or actions in the workplace or professional environment.
- 2.8 **Competent** indicates that a practitioner has demonstrated sufficient training, specialized knowledge, skills, and abilities to conduct job tasks.
- 2.9 **Complaint** signifies a formal filing regarding a violation regarding the “IAI Code of Ethics and Standards for Professional Conduct”, technical error or deficiency against a certified examiner.
- 2.10 **Controlled Document** refers to any document, form, letter, manual or test that is used repeatedly and the content needs to be tracked to maintain the integrity of the information and to determine when different versions are used.
- 2.11 **CV** refers to the initials for Curriculum Vitae.
- 2.12 **Director** is the official, appointed by the IAI Board of Directors, to manage the affairs of the FCMB. The Director acts as chair of the FCMB and is responsible for presiding over any and all meetings of the FCMB. The job description of the Director-FCMB is available in the IAI Operations Manual.
- 2.13 **eCert** is the electronic management system by which the FCMB and its certification boards receive applications for certification, review applications and maintains the records of the certification program.
- 2.14 **FCMB** is the initials for the IAI Forensic Certification Management Board which oversees and manages the certification program of the IAI.
- 2.15 **Grievance** refers to a dislike for an occurrence that may affect others. Notification of a grievance could rectify a situation to prevent it from occurring.
- 2.16 **Preparation Course** is a course of instruction directly related to the taking of a certification test. It does not include courses which provide foundational knowledge or skill development required to pass the test. Preparation courses generally focus on the type of questions or practical challenges an applicant may face on a test.
- 2.17 **Revocation** of certification is an action taken by a certification board based on the determination that a certified person has committed an offense in violation of the “IAI Code of Ethics and Standards for Professional Conduct” to the extent that no remediation is possible.



Revocation indicates that a person who was certified is no longer certified and unable to re-test for certification.

2.18 **Stakeholders** are SME representing the following areas:

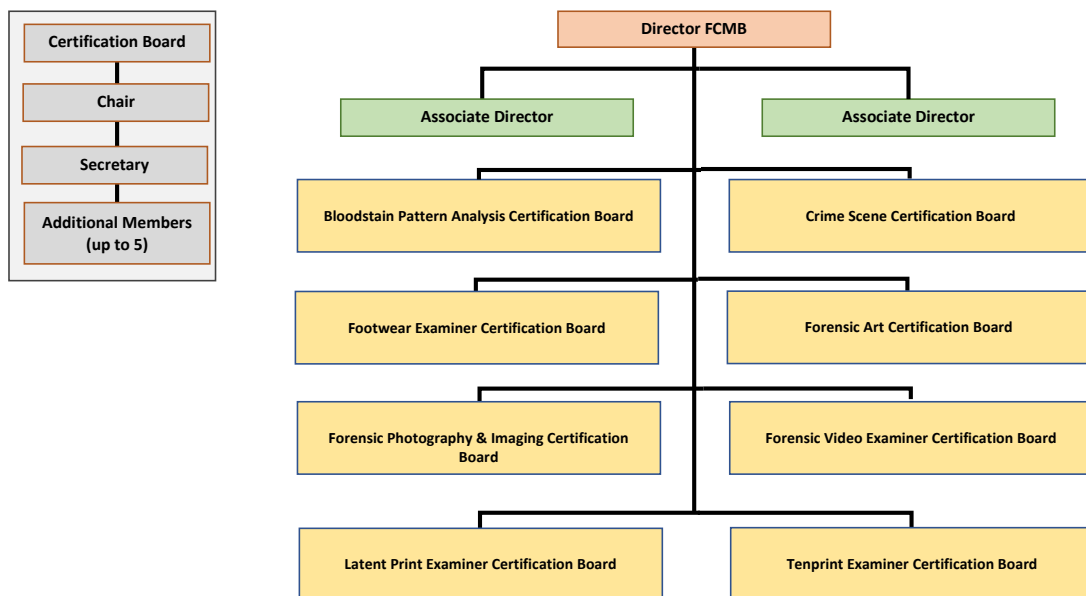
- 2.18.1 Practitioners/other disciplines
- 2.18.2 Employers (private, city, county, state, federal, international)
- 2.18.3 Judicial (representing prosecution and defense)
- 2.18.4 Educators/Researchers
- 2.18.5 Organizations/Vendors (to include IAI divisions)

2.19 **Suspension** of certification is an action taken by a certification board based on the determination that a certified person may have committed an offense in violation of the “IAI Code of Ethics and Standards for Professional Conduct” (e.g., indicted on criminal charges), made a technical error, or otherwise violated a provision of their certification that can be remedied. The suspension will remain in effect until legal charges are finalized or until a course of appropriate corrective action, as determined by the certification board, is achieved.

3.0 Organizational Structure

The FCMB is a subdivision of the IAI. The IAI Board of Directors appoints the Director of the FCMB. The Director serves pursuant to a job description as adopted by the Board of Directors. The certification boards are organized under the FCMB. The FCMB consists of the Director, two at large members appointed by the Director, and the chairs of each of the certification boards. The FCMB acts as a collective advisory board to assist and provide guidance to the Director regarding the development of policies and procedures used to govern the certification program.

FCMB Organization Chart





3.1 Roles and Responsibilities

- 3.1.1 **The FCMB management** (Director and Associate Directors) shall manage, monitor and be responsible for the performance of all personnel involved in the certification process. Where deficiencies are found, corrective actions will be initiated. The FCMB shall require its personnel to sign a document by which they commit themselves to comply with the rules defined by the FCMB, including those relating to confidentiality, impartiality and conflict of interests.
- 3.1.2 **The FCMB Director** has the executive authority to administer the affairs of the FCMB certification program. The Director shall be responsible for updating the operation manual, disseminating updates to the individual boards and posting updates to the IAI website. The Director is responsible for the Quality Management System including reviewing the performance of the FCMB board members, handling information requests and grievances, and ensuring actions taken adhere to the policies and procedures here within. The FCMB Director is responsible for appointing the two FCMB management positions (Associate Directors) based on their knowledge and experience with quality management systems, and providing updates to the IAI-COO, IAI BOD's and IAI members. The FCMB Director is authorized to initiate a corrective action plan when necessary.
- 3.1.3 **Associate Directors** are part of the FCMB management team and are appointed by the director. Associate Directors shall be knowledgeable regarding all aspects of the certification program such that they can act as the Director if necessary. Associate Directors are responsible for random and scheduled audits (including controlled documents review and ensuring records of each certification board are current and maintained), with the assistance of the board chair(s) and board secretary(s) as required, taking corrective action in accordance with the policies and procedures within the FCMB Operations Manual, ensuring comprehensive records of audits and documents are maintained, and reporting audit results and corrective actions to the Director.
- 3.1.4 **Chairs** of each certification board are responsible for ensuring board activities adhere to the FCMB Operations Manual. Chairs are responsible for organizing meetings of their respective board minimally at annual IAI meetings; arranging for the collective needs of the board; ensuring that board members are completing the tasks assigned to them; requesting special budget requests to the Director, reviewing reimbursement requests and submitting them to Director, and participating as a member of the FCMB. Chairs of each certification board are responsible for ensuring:
- 3.1.4.1 Board members are qualified to serve and understand their roles and responsibilities, to include how to grade examinations.
- 3.1.4.2 Sufficient personnel are available with the necessary competence to perform certification functions relating to the type, range and volume of work performed.



- 3.1.4.3 Any conflicts of interest in administering or grading of exams are resolved so that the examination process is not compromised. All conflicts of interest and resolutions shall be documented and retained within the FCMB shared folders.
- 3.1.4.4 Board members applicant letters of interest, CV's, Conflict of Interest forms and Confidentiality Agreements are current (per term) and properly retained on the FCMB document server.
- 3.1.4.5 Certification board members' certifications and IAI memberships are current, within the grace period determined by the IAI, due Dec. 31 with a grace period until Mar. 31.
- 3.1.4.6 Certification webpages are current and accurate. Any requests for modifications are sent to the FCMB Director in a timely manner.
- 3.1.4.7 Documents will be archived and comprehensively retained in the shared files, to include meeting minutes of both closed and open meetings, and documents associated with course approval/denial (e.g., instructors CV and course syllabus).
- 3.1.4.8 Certification manuals are current, and policies and procedures are adhered to.
- 3.1.4.9 The eCert database information is contemporaneously maintained (i.e., continually up to date).
- 3.1.4.10 Surrenders, appeals and grievances are tracked and properly addressed.
- 3.1.4.11 Lists of potential certification board members are contemporaneously maintained.
- 3.1.4.12 The collection of data to be used for validation of examinations is maintained.
- 3.1.4.13 For each individual board that requires subject matter expertise in grading, the board shall provide documentation to demonstrate the reliability of the examiners' judgment.
- 3.1.4.14 The chair of each individual board shall receive all feedback from candidates regarding any aspect of the certification process, including the performance of the secretary or sub-groups. The chair of each individual board is authorized to initiate a corrective/preventative action plan if necessary.
- 3.1.4.15 Participating as an FCMB member, providing input on current and proposed policies and procedures. Chairs participation on the FCMB represents the overall certification program with no partiality towards the certification board they represent.
- 3.1.4.16 Annual meetings of individual certification boards will be held in conjunction with the annual educational conference of the IAI. Certification boards will schedule their closed meetings to handle their board business (include reviewing test materials, certification board membership and conducting a threat assessment and/or discussing possible improvements) but will also schedule an open meeting to receive and explain program changes.
- 3.1.4.17 The individual certification boards shall prepare an agenda thirty (30) days in advance of annual and mid-year meetings and send a copy to the Director.
- 3.1.5 **Secretaries** of each certification board are responsible for maintaining the records of the board including the minutes of all meetings; ensuring that all personnel forms



and records (COI statements, Confidentiality Agreements and résumés/CV's) are up to date and properly stored; ensuring tests are maintained with appropriate version numbers and test developers; ensuring that all applications for certification are reviewed in a timely manner (preferably within 30 days when possible); securing and approving proctors for examinations, ensuring proctor forms are retained in eCert, distributing test material and receiving completed examinations; ensuring tests are administered, returned, and graded impartially and in a timely manner (preferably within 30 days when possible); and issuing certification credentials to those who successfully complete the testing regimen. Secretaries maintain current controlled documents and provide them upon request. Secretaries formally track and document all appeals.

- 3.1.6 **Certification board members** are responsible for development and validation of certification schemes to include requirements of the FCMB Operations Manual; the testing methods best suited for evaluating the knowledge, skills and abilities of the applicants for certification; updating testing materials as appropriate; reviewing applications for certification in a timely manner (within 30 days) to determine prerequisite compliance; grading and evaluating tests as required. Members shall prepare at least two versions of the examinations. A second version is to be used if an examination is compromised. Every effort will be made to ensure board members prepare recertification tests without the participation of board members who will be taking the examination. Qualifications of certification board members include (note: ISO defines an examiner as “a person competent to score an examination, where the examination requires professional judgement”):
- 3.1.6.1 Certification board members shall be certified within the discipline being represented. By virtue of the certification board members being certified, they demonstrated their competence in the discipline.
 - 3.1.6.2 Certification board members shall be IAI members.
 - 3.1.6.3 Certification board members shall not be members of related bodies such that the related body has a vested interest in any certification decision or has a potential ability to influence the process.
 - 3.1.6.4 Certification board members shall participate in board discussions and activities through the year and be responsive to requests and inquiries.
 - 3.1.6.5 Certification board members shall understand the certification testing scheme and are responsible for the development and/or annual review.
 - 3.1.6.6 Certification board members shall be able to apply the testing procedures and understand the documents due to their development of the testing scheme.
 - 3.1.6.7 Certification board members shall have sufficient knowledge of and experience with the certification process to determine if the certification requirements have been met, since they make determinations regarding if applicants qualify to be certified.
 - 3.1.6.8 Certification board members shall be able to adequately converse in English, the official language of the I.A.I.



- 3.1.6.9 Certification board members grading examinations shall be informed of the translation which may be required during the proctoring of the test.
 - 3.1.6.10 Prior to the grading being initiated, any conflicts of interest which might jeopardize the impartiality of the testing scheme shall be identified, investigated and adjudicated.
 - 3.1.6.11 Certification board members shall inspect test materials for improper aids or other forms of dishonesty and or fraud while grading the tests.
 - 3.1.6.12 Electronic grading, as it becomes available, shall be considered acceptable for test results that do not require interpretation.
 - 3.1.6.13 Test graders, examiners, are most often the secretaries of the individual boards since they are responsible for preparing and shipping the hard copies of the written tests, as well as, receiving the completed tests from the proctors. For those examinations which include a practical portion, the test results may be evaluated by either the secretary, or in some instances, a sub-group of board members. Test responses and scores should also be examined for evidence of the use of improper aids or other forms of dishonesty. Performance of the examiners shall be evaluated from an inter-rater reliability perspective.
 - 3.1.6.14 Certification board members shall not offer or provide certification prep classes. Classes taught by certification board members shall be independent from certification.
- 3.1.7 **Proctor** is the person responsible for the security of testing materials and monitoring of the test to ensure inappropriate aids are not used (Invigilator). The proctor does not participate in the grading or evaluation of the test. The proctor should not be an immediate supervisor, primary trainer, co-worker, relative, certification prep class instructor or a person that might otherwise have a vested interest in the success of the candidate.
- 3.1.7.1 Instructions, the confidentiality agreement and the conflict of interest information for the proctor are clearly defined in the “Proctor Instructions and Acknowledgement” (FCMB-08-2017) form that shall be signed. Any conflict of interest must be documented, adjudicated and retained in the eCert records. If a potential for conflict of interest exists, (i.e. proctor is a candidate’s employer, colleague, etc.) the certification body shall take measures to ensure that confidentiality and impartiality are not compromised.
 - 3.1.7.2 Proctors must be approved by the individual boards based upon their status within the IAI and/or their position within the scientific community.
 - 3.1.7.3 The information provided to the proctors consists of the applicants contact information, special accommodations which might be required, and the type of test the applicant will be taking.
 - 3.1.7.4 Proctors are responsible for the security of all test materials from the time of receipt to the time of returning the test materials to the individual board secretary (postage will be included on the return envelope provided by the certification board).
 - 3.1.7.5 Proctors shall not open or read exam materials.



- 3.1.7.6 Upon receipt of the examination, the proctor has thirty (30) days to administer the examination and then return it to the individual board secretary.
 - 3.1.7.7 Proctors are responsible for ensuring the test taker is the applicant who applied for certification. Applicants shall be identified by government issued documents.
 - 3.1.7.8 Proctors will work with the applicant to select an appropriate facility for the administration of the examination. The proctor and applicant shall affirm, at the time of testing, that the premises, equipment and resources present are adequate for the conduct of certification activities.
 - 3.1.7.9 The Proctor and applicant shall mutually agree to the schedule for the test, lunch, and breaks.
 - 3.1.7.10 Proctors are responsible for enforcing the time allowance for the test; assuring that the applicant is not using or receiving any inappropriate assistance; informing the applicant on how to proceed with and complete the test; securing and returning test materials to the certification board at the end of the testing period.
- 3.2 Applying to Serve on Certification Boards, Officer Elections, Removal from Board:
Openings on a certification board shall be advertised in a manner determined by the board to reach the widest pool of potential candidates. The IAI website, and IAI publication, or electronic dissemination are all acceptable methods. Selection of certification board members is typically conducted during the annual IAI meeting.
- 3.2.1 Candidates for certification board service must be certified in the discipline of the board (or within the testing process with payment made by the current expiration date; testing must be completed within 3 months of the expiration date)(or subject matter experts (SMEs) for Advisory positions), a member of the IAI, and have the ability to participate in board activities and meetings (to including travel costs of attending meetings). Participation and responsiveness are requirements to serve on a certification board. Candidates for Crime Scene Certification shall be CSCSA.
 - 3.2.2 Candidates for certification board service shall submit a letter of interest and a résumé or CV by the deadline stated in the advertisement. Board members whose terms are expiring shall reapply with other applicants (the same requirements apply).
 - 3.2.2.1 With the approval of the Director, the chair of a certification board may appoint an interim board member to serve until the formal procedures outlined in this section can be instituted. The Director may appoint certification board members when the chair is unable to do so.
 - 3.2.2.2 The résumés or CV's of all qualified candidates will be made available for inspection by the board members attending the annual meeting prior to conducting interviews of interested candidates. All persons currently serving on the board and attending the annual meeting shall be eligible to vote.
 - 3.2.3 Candidates shall be interviewed, evaluated, ranked by consensus of the certification board by ballot, and put on a list of qualified applicants. The list will be utilized for vacant positions for one (1) year or until the list is exhausted, whichever comes first.



- 3.2.4 Approved candidates will be approved as members after the confidentiality agreement and conflict of interest forms are submitted and appropriately retained in the FCMB shared folders. Documents shall be submitted within two (2) weeks or another candidate shall be chosen to be a certification board member.
- 3.2.5 The term of service for board members appointed during an annual meeting shall be up to three (3) years.
- 3.2.6 Election of Certification Board Officers
 - 3.2.6.1 The members of the certification board will elect a chair and a secretary. Board members wishing to serve in those positions will make their intentions known to the rest of the board. If more than one person seeks the office, an election by ballot will be held. The member receiving the most votes will succeed to the open office. If only one person seeks an open office, that person will succeed to the office by acclamation.
 - 3.2.6.2 The chair will serve no more than two (2) consecutive terms of four (4) years each, exception may be made by the FCMB Director when others are not available to serve.
 - 3.2.6.3 The secretary and regular members are exempt from term limits.
- 3.2.7 Removal from certification board or office
 - 3.2.7.1 Board members and board officers may be removed from their positions for cause. Causes for removal shall include, but are not limited to, malfeasance, breach of security policy, unethical conduct, conflicts of interest, poor job performance, failure to follow the FCMB Operations Manual, and/or failure to maintain IAI membership or discipline certification specific to the board.
 - 3.2.7.2 When the Director becomes aware of a cause for removal of a certification board member or officer, the Director may order the removal of the board member. A replacement shall be voted in from the current list of potential applicants or appointed by the Director or designee.
 - 3.2.7.2.1 If there is a need to review the member's situation, the Director may appoint a three-member ad hoc committee to examine the issue(s) and conduct whatever investigative procedures it deems appropriate or necessary. The committee shall consist of the two at-large FCMB members and one chosen from the FCMB management team. The committee shall issue a report of their findings and a recommendation for action within thirty (30) days. The Director shall consider the committee's findings and recommendations and determine the appropriate action. The Director shall have the authority to remove the certification board members or officers when appropriate.
- 3.2.8 Changes to the organizational structure will be considered by the FCMB. Only members of the FCMB may petition for changes to be considered. Changes shall be implemented by a change in the FCMB Certification Program Operations Manual.



- 3.2.9 The Director may act in place of any FCMB member or officer in cases where a member or officer is unable to perform their duties or are deficient or negligent. This provision shall apply to administrative and/or managerial functions.

3.3 Outsourcing

- 3.3.1 The FCMB shall have a legally enforceable agreement covering the arrangements, including confidentiality and conflict of interests, with each body that provides outsourced work related to the certification process.
- 3.3.2 The FCMB shall assume full responsibility for any work that is outsourced to an outside body, to include:
 - 3.3.2.1 Ensure that the outside body is fully competent to complete the assigned work and complies with FCMB policies and procedures.
 - 3.3.2.2 Assess and monitor the performance of outside bodies conducting outsourced work.
 - 3.3.2.3 Maintain documents to demonstrate that bodies conducting outsourced work meet all relevant requirements.
 - 3.3.2.4 Maintain a list of the bodies conducting outsourced work.

3.4 Other Resources

The FCMB shall use adequate premises, including examination sites, equipment and resources for carrying out its certification activities.

- 3.4.1 Affirmation shall be by signatures of the proctor and applicant on the Proctor/ Applicant Instruction and Acknowledgement form, FCMB-08-2017.
- 3.4.2 Any discrepancies shall be addressed prior to the commencement of testing. Discrepancies which cannot be resolved shall require the postponement of the test until they can be corrected.

3.5 Finance and Liability

- 3.5.1 The IAI and the FCMB have entered into a Management Services Agreement. This agreement provides the FCMB with access to the vast resources of the IAI including financial services, legal representation and liability insurance (FCMB-11-2016). The IAI also agrees to provide all financial support required by the FCMB not covered by its collected certification fees.
- 3.5.2 Certification Board Budget Guidelines
 - 3.5.2.1 Certification boards may not spend or commit funds for any purpose without prior budget approval. Only pre-approved expenses will be reimbursed. The following guidelines shall govern pre-approved reimbursements:
 - 3.5.2.2 Air travel must be purchased at the lowest possible cost. Tickets should be purchased at least 45 days prior to departure to minimize ticket costs unless there are extenuating circumstances. All travel must be by coach air.
 - 3.5.2.3 The IAI-COO will advise the Director/ Certification Board Chairs of reimbursement fees, which are based on the current rate determined by the GSA - U.S. Federal Government.
 - 3.5.2.4 If any member uses a government or agency owned vehicle to drive to the conference, then no mileage reimbursement will be made. If any member chooses to drive his/her privately owned vehicle to the conference, cost will be



- reimbursed at the current federal government mileage rate not to exceed the cost of the lowest available airfare to the conference destination. Transportation expense will not exceed the lower of the costs of either airfare or driving mileage.
- 3.5.2.5 Conference registration costs will not be paid from Certification Program funds.
 - 3.5.2.6 Hotel/lodging and per diem, which includes meals and incidental expenses, will be reimbursed for only the days on which the certification board meets. Meetings must be for the purposes of administering the certification program. The certification board chair will determine the number of nights lodging required, based on meeting times and travel arrangements, in order for the members to arrive at and depart from the meeting in a timely manner and without undue expense. The reimbursement rate for lodging and meal expenses is based on the GSA – US Government rate; the IAI-COO is to notify the Director/Certification Board Chairs of the current rate, a minimum of ninety (90) days prior to the conference, for budgeting purposes. Should expenses exceed the GSA rate, the IAI-COO is to be immediately notified. If the meetings are held during the annual educational conference, then the lodging rate will be at the conference rate and meal expenses will be at the GSA rates. Per diem will not be reimbursed for meals provided by the IAI regardless of whether a member chooses to partake in provided meals.
 - 3.5.2.7 In the event that special meetings of a certification board are required, in addition to the meeting at the annual conference, the expenses of that special meeting may be funded by the FCMB. The chair of the requesting certification board will confer with the Director to verify available funds before calling a special meeting.
 - 3.5.2.8 Receipts are required for hotel expenses, airfare, cab and public transportation in excess of \$20.00. Receipts are not required for meals; the reimbursement for meals will not exceed the per diem rate.
 - 3.5.3 At such time as a certification board's level of participation and revenue makes it feasible, the chair of the certification board, with the approval of the members of the individual certification board, may petition the Director for approval to pay the board secretary an annual stipend based on the volume of work handled.

4.0 Records and Information

4.1 Records of Applicants, Candidates and Certified Persons

- 4.1.1 The FCMB shall maintain certification records on eCert and shall include the following:
 - 4.1.1.1 Current status of all applicants and certified persons.
 - 4.1.1.2 Records to demonstrate the certification or recertification process of an applicant has been fulfilled.
 - 4.1.1.3 Examination results records.
 - 4.1.1.4 Documents relating to the granting, maintaining, recertifying, expanding and reducing the scope of the individual's certification.



- 4.1.1.5 Suspension or revocation of individual’s certification.
 - 4.1.1.6 The eCert system is password protected with limited access being granted to the IAI Chief Operations Officer, FCMB members and the secretaries for each individual board for the purpose of reviewing records.
 - 4.1.2 The FCMB shall maintain records in a manner which ensures the integrity of the certification process and the confidentiality of the information.
 - 4.1.2.1 Records shall be kept for a minimum of one full certification cycle (5 years).
 - 4.1.2.2 Records of individuals who have allowed their certifications to lapse shall be retained in eCert. At a minimum, the records shall include: the individual’s name, last known address, type of certification and date of lapse of certification.
 - 4.1.2.3 Original certification test answers, for those who pass the examination, shall be destroyed and only a summary notation of pass/fail be retained in the records. Test answers of those who fail shall be destroyed after the time period for appeal has expired.
 - 4.1.3 The FCMB shall have enforceable arrangements with all certified individuals that require self-reporting, without delay, of any matters which can negatively affect their capability to continue to fulfill the requirements of certification. All self-reports shall be recorded in eCert.
- 4.2 Public Information
- 4.2.1 The FCMB shall verify and provide information, upon request, as to whether an individual holds a current, valid certification and the scope of the certification.
 - 4.2.1.1 The FCMB receives certification status information from the individual boards and uploads that information to the publicly available IAI website (<https://www.theiai.org/certifications.php>).
 - 4.2.1.2 The website information shall include the individual’s certification number, last name, first name, city, state, certification type and date of expiration.
 - 4.2.1.3 Specific inquiries concerning the records of certified persons are referred to the Director of the FCMB. The Director will maintain documentation of any information released pursuant to subpoena or court order.
 - 4.2.2 The FCMB shall make publicly available on the IAI website current information regarding the scope of the certification scheme, a general description of the certification process and all pre-requisites required for certification.
 - 4.2.3 The FCMB shall ensure the accuracy of all certification program related information prior to publication, either on the website or in written form.
- 4.3 Confidentiality
- 4.3.1 The FCMB shall establish documented policies and procedures for the maintenance and release of information.
 - 4.3.2 The FCMB shall, through legally enforceable agreements, keep confidential all information obtained during the certification process. All members of the FCMB and the certification boards shall be required to execute a Confidentiality Agreement upon appointment/election.



- 4.3.3 The FCMB shall ensure that information obtained during the certification process, or from sources other than the applicant, candidate or certified person, is not disclosed to an unauthorized party without the written consent of the individual, except where the law requires such information to be disclosed.
- 4.3.4 When the FCMB is required by law to release confidential information, the person concerned shall, unless prohibited by law, be notified as to what information will be provided. A consent to release information is not required when the request is received from a legally authorized entity.
- 4.3.5 The FCMB shall ensure that the activities of related bodies do not compromise confidentiality.
 - 4.3.5.1 The list of related bodies includes the IAI and all test proctors (the list of proctors is generated from eCert).
 - 4.3.5.2 Related bodies shall be required to sign a confidentiality agreement and conflict of interest form.

4.4 Records Retention

All other hard copy business records (financial, contractual documents, etc.) may be destroyed after five (5) years from last activity (electronic copies maintained by the IAI-COO, pursuant to the Management Services Agreement).

4.5 Security

- 4.5.1 All members of the FCMB and certification board members shall ensure the security of test materials throughout the examination process. This shall include test development, administration and reporting of results.
- 4.5.2 All certification program application and testing records shall be contained in the eCert system. This system is user/password restricted and is firewall protected.
- 4.5.3 Other records generated by the certification program shall be stored on a cloud based encrypted storage service contracted by the IAI/FCMB. Access will be restricted through assigned permissions. These records include but are not limited to: Conflict of Interest forms, Confidentiality Agreements, board member CV's, meeting minutes, certification examinations, documents related to complaints and appeals, and written and practical test materials.
- 4.5.4 All testing materials, requiring transportation, are sent to the proctors by approved carriers that offer tracking (e.g., USPS, FedEx, UPS, etc.). Tracking information shall be posted in the notes section of the application.
- 4.5.5 Certification board documents and examination records are not to be kept on certification board members personal computers or other devices not authorized by the FCMB or IAI. This restriction does not include the temporary storage of documents used for composition, editing, updating or the execution of processes required by the governing regulations and policies found in this manual. Once the temporary need is satisfied, updated documents should be uploaded to the appropriate folder and removed from other sources.



- 4.5.6 Should a security breach occur, the FCMB shall initiate a root cause analysis to determine the reason, parties involved, and consequences of the breach. Upon conclusion of the inquiry, an appropriate corrective action plan shall be initiated.
- 4.5.7 The FCMB shall prevent fraudulent examination practices through the implementation of preventive measures:
 - 4.5.7.1 The testing candidate, via their signature, agrees to not release the contents of the testing material and not participate in fraudulent test taking practices or use any unauthorized aids while completing the examination.
 - 4.5.7.2 The Proctor shall be present during the candidate's test-taking to confirm the identity of the candidate and to prevent candidates from gaining access to unauthorized aids during the testing.
 - 4.5.7.3 The individual certification boards shall review test responses and scores for evidence of the use of improper aids or other forms of dishonesty.
- 4.6 Control of Documents (manuals, forms and examination materials)
 - 4.6.1 Documents and updates to documents shall be approved by the Director before use.
 - 4.6.2 Both internal and external controlled documents will be identified as such. The distribution of external documents will be limited to those that are publicly available.
 - 4.6.3 Documents will be identified by document type, implementation date year and version numbers. Documents will be maintained in a central folder to ensure the unintended use of obsolete documents. Archive versions will be retained for retention, and clearly labeled as obsolete.
 - 4.6.4 Documents will be available through the secretaries of each certification board in accordance with confidentiality agreements.
 - 4.6.5 Documents will be reviewed as needed, minimally every three (3) years for appropriateness.
 - 4.6.6 Non-controlled document forms used by Certification Boards, such as email templates, shall be approved by Chairs, with confirmation by the Director that they are not controlled documents.

5.0 Certification Scheme Development and Validation

5.1 Requirements of Schemes

The FCMB offers several certifications. Each scheme includes a scope (the categories of scientific foundational and technical knowledge required in each forensic discipline), job descriptions/tasks (based on a job analysis), the competencies required for each job task, prerequisites required for certification, assessment methods employed, requirements for successful completion, and references of where the information can be located. Each individual board is responsible for developing a scheme that identifies the competencies required of an individual to be certified in their discipline.

5.2 Development of Examinations

The certification boards shall design examinations to assess competence based on, and consistent with, the scheme, by written, oral, practical, observational or other reliable and objective means. The design of examination requirements shall ensure the comparability of



- results of each single examination, both in content and difficulty, including the validity of fail/pass decisions.
- 5.2.1 Scheme development shall align the scope, job tasks, prerequisites, competence requirements, test content, test mechanism and references.
 - 5.2.2 Schemes shall identify the tasks required for successful performance.
 - 5.2.3 Schemes shall identify the required competence for each task.
 - 5.2.4 Schemes shall identify prerequisites required.
 - 5.2.5 Schemes shall indicate the assessment mechanisms and examination content.
 - 5.2.6 Schemes shall indicate recertification requirements and interval.
- 5.3 Annual Review of Certification Schemes
- Each board shall be responsible for conducting an annual review of written, comparison and/or performance segments of their examinations to evaluate the fairness, validity, reliability and general performance of each examination, and determine if updates or changes are warranted.
- 5.3.1 The annual review of the examinations shall be conducted in conjunction with the annual educational conference of the IAI, when applicable.
 - 5.3.2 The annual review shall be completed by certification board members to ensure appropriate subject matter expertise. Reviews shall use an appropriate structure that fairly represents the interests of all parties significantly concerned, without any particular interest predominating.
 - 5.3.3 Each board secretary is responsible for collecting test question results for a period of twelve (12) months prior to the annual meeting of their board.
 - 5.3.4 The chair of each board shall be responsible for collecting any information regarding complaints, grievances and/or appeals filed by a candidate(s) for a period of twelve (12) months prior to the annual meeting of their board.
 - 5.3.5 Members of each board shall be responsible for reviewing the recommended resource materials to ensure that the test questions are still valid based on the industry's best practices.
 - 5.3.6 The annual review shall focus on the continued relevance of examination requirements, poorly performing items in the examination, as well as, determining if the pass/fail cut score is appropriate.
 - 5.3.7 The annual review shall review performance data regarding questions and answers chosen on written and practical testing materials.
 - 5.3.8 In addition to reviewing completed tests for correct answers, applicant responses shall be examined for potentially problematic questions or tasks that may be ill designed.
 - 5.3.9 During the annual meeting of each individual board, they shall evaluate all the collected data to determine if any deficiencies exist.
 - 5.3.10 If deficiencies are identified, each board shall make corrections. This may include rewording of the question, substitution of another question or removal of the question.
 - 5.3.11 For those boards which have "tasks performance segments" within their examination, they shall determine reliability based on individual grading by multiple members of the board.



- 5.3.12 Changes to examination materials shall be validated by the certification board prior to implementation.
 - 5.3.13 The annual review shall be documented and retained in the FCMB files and include the performance data, how it was assessed, the actions taken and the reasons for the actions.
- 5.4 Job Task/Practice Requirements
- Each certification board shall conduct and maintain a job task analysis and a pass point study for the respective certification (to be completed as tests are updated and reviewed minimally every five (5) years, and stored on the FCMB shared folder). Job tasks are determined by each certification board, as subject matter experts of the discipline they represent. The job/practice analysis shall include the date of the most recent job/practice analysis, the date of the next planned job/practice analysis (if set). The pass point study shall include the date of the most recent passing point study and the date of the most recent item analysis report (analysis of each competency and test question/requirement required).
- 5.5 Changes to Certification Schemes (including controlled documents)
- 5.5.1 Modifications to the certification scheme and controlled documents may be necessary to accommodate changes in scientific methodologies, legal considerations or to improve deficiencies.
 - 5.5.2 Changes may be proposed at any time to certification board chair and shall be tracked contemporaneously.
 - 5.5.3 Changes to the certification schemes and controlled documents shall be submitted to the Director for review and approval. Prior to approval, the FCMB shall verify the methods for developing/modifying schemes to ensure that each assessment is fair and valid.
 - 5.5.4 Approved changes shall be incorporated in the FCMB Certification Program Operations Manual, as applicable, and will be effective as of the implementation/revision date listed on the document/manual/examination.
 - 5.5.5 Changes that increase requirements shall be posted with enough notice to give applicants time to comply.
 - 5.5.6 Changes to certification schemes which require additional assessment of those certified, shall be assessed within the recertification process, as recertification becomes due.
- 5.6 Creation and Composition of the Certification Boards
- Establishment of a certification board: Based on the recommendation of the FCMB and subject to the approval of the Director, a certification board may be established in any of the forensic disciplines. The Director shall consider the creation of a new certification board based on need, viability, the potential level of participation, and the availability of similar programs.
- 5.6.1 A proposal should be submitted to the Director in writing stating the need and research of other similar certification programs. A proposed scheme, testing program, and validation of testing shall be included in the proposal. The proposal shall include evidence of a minimum participation level and specify the expected participation level to ensure a new certification board is financially self-sustainable. The proposal shall include proposed board members who are committed to ensuring success of the program.



- 5.6.2 Composition: A certification board is composed of no fewer than three (3) and no more than seven (7) members, including a chairperson and a secretary. Additional members may be added to a certification board at the discretion of the Director.
- 5.6.3 At the discretion of the Director, ad hoc members may be appointed to a certification board, in addition to the allotted seven members if workloads justify the increase. Ad hoc members are temporary appointments.
- 5.6.4 Ad hoc members must possess the same qualifications and meet the same requirements as full members of the board.
- 5.6.5 Advisory positions, with restricted access to examination materials, may be approved provided subject matter expertise (SME) is established. Certification may not be required for Advisory positions.
- 5.6.6 Appointment: The Director of the FCMB shall appoint members of a new certification board.
- 5.6.7 Each certification board shall operate in conformance with the provisions of the Certification Program Operations Manual approved by the FCMB.

6.0 Management Reviews

- 6.1 Review of the management system by the Associate Directors is scheduled at planned intervals to ensure its continuing suitability, adequacy and effectiveness. Documentation will be retained and reported to the IAI-COO and IAI BOD's.
 - 6.1.1 Review input shall minimally include (from the Associate Directors):
 - 6.1.1.1 Review of the FCMB Operations Manual to ensure consistency with program information
 - 6.1.1.2 Review of eCert to ensure information is accurate, current, being handled in a timely manner, and certification is handled consistently and impartially
 - 6.1.1.3 Review of FCMB shared files to ensure they are current (CV, COI, CA, controlled documents)
 - 6.1.1.4 Review of certification board webpages and pamphlets for consistency with the certification program
 - 6.1.1.5 Review of appeals
 - 6.1.1.6 Review of grievances and complaints, the status, findings and how they were adjudicated
 - 6.1.1.7 Determine if the individual boards conducted a sufficient annual review and validation of schemes in their entirety
 - 6.1.1.8 Determine if the individual boards conducted a sufficient review of previous year's test results such that appropriate test question changes could be considered
 - 6.1.1.9 Determine if the secretary of each individual certification board collected testing performance data regarding questions and answers chosen on written tests, as well as, practical testing materials; and performance data was assessed and actions taken
 - 6.1.1.10 Ensure those with findings from the internal audit are appropriately notified
 - 6.1.1.11 Review of the status of preventive and corrective actions



- 6.1.1.12 Review of follow-up actions from previous management reviews
 - 6.1.1.13 Review of meeting minutes and status of actions taken
 - 6.1.1.14 Review financial records to ensure accordance with the IAI Service Agreement
 - 6.1.1.15 Identify nonconformities, the cause, and appropriate corrective action
 - 6.1.1.16 Identify potential sources for non-conformities, the cause and preventative action
 - 6.1.1.17 Changes that could affect the management system, particularly in the area of management structure are identified
- 6.1.2 Review output shall include (by the Director):
- 6.1.2.1 opportunities for improvement to the effectiveness of the management system are identified
 - 6.1.2.2 opportunities for improvement of the certification programs are identified
 - 6.1.2.3 the effectiveness of preventative and/or corrective action
 - 6.1.2.4 resource needs

7.0 Certification/Recertification Process

7.1 Certification/Recertification Application Process

The FCMB certification program requirements have been developed to ensure an impartial assessment of competence and compliance with certification schemes. Participants shall recertify every five (5) years to confirm continued competence and compliance with certification criteria, which may include testing current abilities, and/or to confirm continued activities that reinforce and enhance knowledge.

- 7.1.1 An applicant for certification/recertification must be of good moral character, high integrity, and good repute and must possess high ethical professional standing.
- 7.1.2 All applicants shall read sections 7 and 8 of this manual to understand their rights and responsibilities.
- 7.1.3 All applicants for certification/recertification shall agree to abide by the "IAI Code of Ethics and Standards for Professional Conduct". Agreement will be attested to by virtue of the applicant's electronic signature.
- 7.1.4 Applications for certification/recertification are filed electronically using the IAI's eCert system. Applicants will create a password protected account and follow the online instructions to complete the application, including uploading applicable documents. Acceptable file formats are PDF, JPEG, BMP, DOCX or TIFF. Requirements minimally include (see section 8.9 for requirements):
 - 7.1.4.1 Education (see section 8.9 for the requirements)
 - 7.1.4.2 Experience: the eCert system will ask for the last five (5) years of work experience. Initial certification requires confirmation of work experience within the discipline, listed in section 8.9. Work experience shall be within the past five (5) years, or employed at time of application (minimally 30 hours a week or 130 hours per month with at least 50% of job duties specific to the certification being applied for). Years will be adjusted for part time work, with the exception of Forensic Art.



- 7.1.4.3 Training hours and/or professional development credits: initial training hours shall be within the last 5 years for Latent, Crime Scene and Forensic Photography and shall include performance measures to ensure learning objectives are satisfied (e.g., assignments, skills assessments or tests) as specified for each certification board in section 8.9. Professional development credits must have been earned over the last five (5) year period preceding the application for recertification.
- 7.1.4.4 Minimum of two (2) letters of endorsement and two (2) additional references that are different than the sources of the letters of endorsement are to be uploaded as part of the initial certification application process (not required for recertification). The references should be professional colleagues who can discuss the applicant's work experience and performance.
- 7.1.4.4.1 Letters of endorsement shall be addressed to the secretary of the certification board. One letter of endorsement being from the applicant's employer or supervisor, or a person who can verify the applicants work experience in the discipline (verify employment sufficient to meet the application experience prerequisite). The additional letter shall be from an individual actively engaged in the discipline that can attest to the character of the applicant. The letters shall include:
- a) The agency's name and contact information
 - b) The title, name and contact information of the person making the endorsement
 - c) The applicant's rank or status with the agency
 - d) The applicant's time period of employment
 - e) A summary of the endorsers experience with the applicant
 - f) The estimated number of cases performed, when applicable.
- 7.1.4.5 A signed agreement:
- a) To abide by the "IAI Code of Ethics and Standards for Professional Conduct"
 - b) To comply with the relevant provisions of the certification scheme
 - c) To make claims regarding certification only with respect to the scope for which certification has been granted
 - d) Not to use the certification in such a manner as to bring the FCMB into disrepute, and not to make a statement regarding the certification which the FCMB considers misleading or unauthorized
 - e) To discontinue the use of all claims to certification that contain any reference to the FCMB or certification upon suspension or revocation of certification
 - f) Not to use the certificate in a misleading manner
- 7.1.5 Special needs that are required for the examination process shall be requested within the application process. Accommodations, within reason and where the integrity of the assessment is not violated, taking into account national regulations,



shall be established and agreed upon by the applicant and the respective certification board prior to the application submission. If a translator is agreed upon and utilized, the applicant bears the responsibility for proper translation (verbal translation during the exam only; exams are not to be translated in writing). Translators shall be those who are not privy to exam answers. No refunds will be permitted due to a failure to disclose/request special accommodations that are necessary.

- 7.1.6 Applications will not be processed until the appropriate non-refundable fee is paid. Only those persons who believe they clearly meet the stated qualifications and requirements for certification/recertification and are prepared to take the certification/recertification test should submit applications, as no refunds will be permitted.
 - 7.1.6.1 Recertification requirement: Timely filing for renewal, in eCert, is the responsibility of the certificant to ensure certification does not lapse. Failure to apply for renewal or failure to meet the requirements will automatically place the certification in an expired status. Applications that are in process are not considered expired. If the certification expires, then a new application for initial certification must be submitted, meeting all the current requirements for applying for initial certification.
 - 7.1.6.2 Certificants cannot take an initial certification examination in lieu of a recertification examination unless the current certification is forfeited or expired.
- 7.1.7 Qualifications and requirements are subject to revision. Qualifications and requirements listed in the FCMB Operations Manual shall be the qualifications required at the time of application
- 7.1.8 Timeline for stages of the certification process:
 - 7.1.8.1 Information submitted on a completed application should be thoroughly reviewed, validated and processed (approved/request for additional information/denied) by either the secretary or another member of the individual certification boards within thirty (30) days of submission to ensure consistency in administration.
 - 7.1.8.2 Assign proctor, test date and mail examination (initial certification): Every attempt shall be made by a certification board to assign a proctor, establish a test date, and mail examination materials within thirty (30) days of domestic applications being approved. Reasons for delays shall be noted in eCert. If a proctor cannot be reasonably be established, testing may need to be taken at the IAI annual conference.
 - 7.1.8.3 Testing: If a scheduled test date is cancelled, a new date may be requested of the Chair or designee for approval/denial. Testing should not exceed six (6) months from the application approval. The change request, reason for the request, the decision and the new date shall be noted in eCert. If testing is not completed within six (6) months, the application will be closed. The applicant will be required to file a new application and pay the appropriate fee.



7.1.8.4 Grading: Every attempt will be made to grade tests within 30 days of the examination date.

7.2 Examination General Process Requirements

Certification/recertification may include successful completion of an examination (see 8.9). Testing includes exercises which demonstrate the applicants' ability to reliably complete tasks representative of actual casework.

- 7.2.1 Proctors, where applicable, are approved by the certification board. Testing materials are sent to the proctors, not directly to the applicant. Recertification examinations are sent directly to applicants.
- 7.2.2 The location, date and time of the test, individual and lunch breaks will be upon mutual arrangement between the test proctor and the applicant.
- 7.2.3 The proctor and candidate shall complete the FCMB-08-2017 which acknowledges that the testing premises and resources present at the testing site are adequate for carrying out certification activities. The form will be returned with the testing materials.
- 7.2.4 The test proctor approved by the certification board administering the test will be responsible for keeping track of the specified testing time frame, maintaining the integrity of the test and must be present during the entire test.
- 7.2.5 Certification/recertification examinations are taken independently. The applicant shall not receive any active or passive assistance during the testing period. All written examinations are "closed book" meaning that no study or reference materials, in any format, may be used by the applicant taking the test. The proctor for initial certification examinations will ensure that the applicant receives no assistance completing the test. Applicants caught using unauthorized aids will receive an automatic failure. They will be barred from any future attempts toward certification through the FCMB program.
- 7.2.6 When technical equipment is provided by the FCMB for the candidates use in the examination process, the equipment shall be verified or calibrated prior to being sent. If personal technical equipment is used by the candidate in the examination process, if permitted under the relevant certification board's test (e.g., cameras, computers, etc.), it is the responsibility of the candidate to verify or calibrate, where appropriate.
- 7.2.7 The packaging containing the test materials is marked, "Contains sealed envelope(s) and instructions, which are to be strictly followed". The sealed envelopes are not to be opened until the time of the test, in accordance with the instructions and in the presence of the applicant.
- 7.2.8 At the conclusion, the examination will be packaged, sealed according to the instructions, and returned to the secretary or designee of the certifying board by the proctor for grading.
- 7.2.9 Recertification examinations and examination materials will be returned by the applicant. It is highly recommended that applicants return their test with a reliable shipping vendor that has tracking capabilities. Proof of delivery is the responsibility



of applicants if their test is missing or returned beyond the designated timeframe. The applicant shall be responsible for the return postage.

7.3 Examination

The examination methods and criteria for passing are defined within each certification scheme.

- 7.3.1 Only completed and approved applications will be permitted to take a certification/recertification examination. Approved applications shall be noted in eCert.
- 7.3.2 Written examinations are knowledge examinations. There is only one correct answer per question. Answers are chosen by multiple choice, true/false or direct selection or annotation.
- 7.3.3 Practical examinations are classified in two categories: Comparative and Performance.
 - 7.3.3.1 Comparative examinations such as those given by the Latent Print, Ten Print, and Footwear certification boards require that the applicant successfully compare simulated specimens to known sources from potential candidates. In all cases, an incorrect conclusion (i.e., a conclusion that does not meet ground truth) will result in failure of the test.
 - 7.3.3.2 Performance exams such as those administered by the Forensic Photography & Imaging, Forensic Art, Bloodstain Pattern Analysis, and Forensic Video certification boards; require that the applicant perform a skill-based task that is customarily required of discipline practitioners. Success is evaluated by the consensus judgement of the subject matter experts (i.e., peers) who are members of the respective certification board.

7.4 Decision on Certification/Recertification

- 7.4.1 Certification/recertification shall be determined by the successful completion of all the requirements of a certification scheme and is valid for five (5) years.
- 7.4.2 The date, results of candidate testing, and all relevant communications between the candidate and the certification board (letters and emails) are recorded by the secretary of the individual certification board in the eCert program.
- 7.4.3 The decision to award certification/ recertification is the responsibility of each certification board based on the information gathered during the certification/recertification process. Personnel who grade examinations shall not participate in the testing, and should not have trained the candidate within the past two (2) years.
- 7.4.4 Certification/recertification will be granted as of the date of successful completion of the testing (i.e., the last requirement to be fulfilled), after all information is updated in the eCert database. Time remaining on the existing certification is forfeited.
- 7.4.5 Decisions for granting, maintaining, recertifying, extending, reducing, suspending or revoking certification shall not be outsourced.
- 7.4.6 Decision on certification shall be specifically related to the requirements of the certification scheme.
- 7.4.7 The certification board shall provide a certificate to all certified persons. The certificate shall be signed by the secretary and chair of the certifying board, indicating the person's name, certification, unique identifier, effective date and



- expiration date. Certificates are designed to reduce the risk of counterfeiting and are non-transferable.
- 7.4.8 Test responses and scores are examined for evidence of the use of improper aids or other forms of dishonesty. Applicants suspected of improper behavior while taking the test shall be reported to the Director, FCMB, who may initiate formal proceedings.
- 7.4.9 Failing a written or practical examination, not completing the comparison portion of an exam (without any technical errors), not completing another portion of the exam, or having made one (1) erroneous exclusion where applicable, will require a wait of six (6) months from the rejection date to reapply/pay fee to take the failed portion(s) of the examination. The entire time limit will be allowed when retaking failed portion(s) of an exam.
- 7.4.9.1 A new application and an entire examination will need to be completed if a) an applicant does not re-apply for certification within six (6) months from the last day of a wait period, or b) a second examination results in a failure.
- 7.4.9.2 Recertification may be taken a maximum of two (2) times, with appropriate application and fees, with the same rules for failing as initial certification.
- 7.4.10 Failure due to an erroneous identification or multiple erroneous conclusions on a comparison examination will require a wait of up to one (1) year from the failure date to reapply and retake the failed portion of the examination.
- 7.4.11 Failure to show up for a scheduled examination will result in the application being closed, barring true emergencies. No refunds will be permitted. To reschedule an examination a new application must be submitted with appropriate fees, meeting all current requirements for certification.
- 7.5 Approval of Training Hours (for initial certification)
- 7.5.1 The certification boards have the responsibility for the approval of all training that qualifies for initial certification hours (e.g., courses or agency training programs). The recognition/approval of training by a certification board shall not compromise impartiality or reduce the assessment and certification requirements. Approval of hours is established due to relevance of the materials, estimated hours are accounted for, and learning objectives are satisfied. A syllabus for internal training programs shall be submitted to demonstrate practical exercises and testing of adequate skills. The certification boards do not rate the quality of courses or internal training programs, nor endorse any training. Approval of training courses, prior to approving an application is required. The process for approval/pre-approval of training courses used in lieu of an internal training programs, and/or for recertification credits, is as follows:
- 7.5.1.1 Trainer or applicant shall submit an application for approval to the Director. Applications will be given a tracking number and forwarded to the appropriate certification board for review. The application shall include:
- An abstract or overview of the course to establish relevance to a discipline and or certification scheme



- A syllabus indicating a breakdown of each topic including the estimated hours dedicated to each topic
- The applicability of the topic to a specific discipline (if it is not clearly apparent)
Note: courses may not be accepted if the syllabus does not indicate the relevance to a specific discipline or the hours for each topic.
- The interaction mechanism between the instructor and students to allow for interaction, participation, questions, clarification and feedback (i.e., live classes are not required)
- A measurement criterion to ensure learning objectives are satisfied (e.g., assignments, tests or skills assessment)
- A curriculum vitae for all instructors, where possible (qualifications as a subject matter expert may be considered)
- Online courses must provide technology assistance to the student to work through technical difficulties with any aspect of the course or course interactions
- Training classes shall be open to any and all that meet the educational and training pre-requisites to attend, with the exception of when attendance is established by an entity sponsoring a course
- Training courses shall include realistic examples of situations, if applicable
- Training courses must provide attendees a certificate of completion which includes the course, dates, hours and the instructor name
- Each board evaluates the submitted information to determine if the submitted materials confirm relevance to the forensic discipline represented by the certification board
- Each board determines the number of training hours authorized for each training course based on the hours that are relevant to the specific discipline. The reason for denial of training hours (in full or partial) shall be documented in the application response
- The trainer or applicant, and the FCMB Director, is notified of the approval of training hours by the certification board. A trainer is then authorized to include pre-approval information in training course/program advertisements
- Approval of courses shall be completed within two (2) weeks of receiving all pertinent materials
- Approval may be rescinded as industry standards change
- Appeals shall be submitted according to the procedures outlined in the section on Grievances/Appeals of this manual

7.5.1.2 Members of the Certification boards shall not conduct training, for which they receive any remuneration, relating to certification preparation courses or courses mandated (non-optional) by the certification board.



- 7.5.1.3 Members may provide training which is part of the general curriculum required for applicants but shall not infer in any manner that taking such course would provide an advantage to the student seeking certification.
 - 7.5.1.4 A trainer may not act as a proctor for a certification test if that trainer previously conducted a certification preparation course in which the applicant was a student.
 - 7.5.1.5 Certification board members may not act as examiners, assessors or evaluators for any certification candidate who was a student or mentored practitioner of theirs within the previous two years to filing an application for certification.
 - 7.5.2 The FCMB, through the IAI website and IAI publications, may provide information regarding education and training that can be used to meet eligibility requirements for certification. However, the FCMB shall not state or imply that certification would be simpler, easier or less expensive if any specified education/training services are used.
 - 7.5.3 The FCMB and certification boards do not offer any training related to the certification program. The IAI partners with an independent contractor to provide training related to forensic issues. The IAI receives compensation for allowing the contractor to market the training under the IAI label. Because of this relationship, none of the training courses offered by the contractor may be deemed mandatory by the certification boards.
- 7.6 Attaining Professional Development Credits (for recertification)
- Professional development credits can be earned for continuing education and/or involvement in discipline activities. Knowledge regarding different views on a topic is the pinnacle of expertise. Knowledge of how other forensic disciplines affect a specific discipline is highly valuable. Applicants for recertification must provide documentation that the required number of credits has been achieved. Credits must have been earned over the five (5) year period since the last certification/recertification period. Credits may be earned for various activities, which are described below:
- 7.6.1 Employment: Fulltime employment, 30 hours or more a week with more than 50% of job duties conducting forensic science examinations – four (4) credits per year (credits for partial years of employment require a special request to accommodate the eCert database, pro-rated at one (1) credit per three (3) months of employment). Casework shall be specific to the discipline for which application is made.
 - 7.6.2 Memberships: Membership in a forensic society recognized by the Certification Board – one (1) credit earned per year of membership per organization - maximum of 25% of the credits required for recertification.
 - 7.6.3 Forensic Meetings/Conferences/Seminars/Webinars (preregistration required): Participation/attendance qualifies for two (2) credits per half day (four (4) hours) with a maximum of 75% of the credits required for recertification. Credits for a conference and workshops shall not be claimed simultaneously (e.g., 20 credits may be claimed for a 40-hour conference, hours for participation in a workshop shall be subtracted from conference hours and counted as a hands-on workshop). An



approved conference or meeting is sponsored by a professional association, institution, or agency organized to deal with issues relating to forensic identification, analysis or investigation and is open to any and all to attend. Webinars refers to online presentations that do not include assignments and/or quizzes or tests. Proof of attendance may include certificate of attendance, roster or name badge. Proof of relevance may include an abstract, syllabus or program guide.

- 7.6.4 Training Courses/Hands-on Workshops/Webinars with course work and/or tests: Completion of a course or in-service training recognized by the individual Certification Board qualifies for one (1) credit per one (1) hour, to a maximum of 75% of the credits required for recertification. Vendor specific training shall qualify for credits if the information can be utilized regardless of the product used, in addition to the other requirements listed in this manual for training courses.
- 7.6.5 Presentations at Institutional Event: five (5) credits for each different presentation - maximum of 50% of the credits required for recertification.
- 7.6.6 Participation in a panel discussion/plenary discussion/poster presentation – five (5) credits for each, maximum of 50% of the credits required for recertification.
- 7.6.7 Instruct (for practitioners): Conduct a training workshop or seminar for forensic examiners that is recognized by the individual Certification Board – five (5) credits for each half-day presentation - maximum of 50% of the credits required for recertification.
- 7.6.8 Instruct (for non-practitioners): Conduct a training workshop for non-examiners – three (3) credits for each half-day presentation with a maximum of 25% of the credits required for recertification.
- 7.6.9 Publications: Articles published in a forensic journals or newsletter – ten (10) credits per article - maximum of 50% of the credits required for recertification. Published books or portion of a book – 20 credits – maximum of 25% of the credits required for recertification. Articles/books shall be specific to the discipline for which recertification is being sought. Recognized publications are those that focus on providing information to professional practitioners relating to forensic identification, analysis or investigation and associated issues.
- 7.6.10 Committees: Holding an office or serving on a committee in a forensic society recognized by the Certification Board or performing an official service for a forensic journal publication – five (5) credits earned for each year served - maximum of 25% of the credits required for recertification.
- 7.6.11 On-the-job Training: Acting as the primary provider of training for novice forensic examiners – five (5) credits for each year in which training is provided - maximum of 25% of the credits required for recertification.
- 7.6.12 Self-directed Learning: Providing a written summary (minimum of 250 words and uploaded in eCert) of an article written by another forensic examiner or related professional and published within the last five (5) years – two (2) credits per article allowed - with a maximum of 40% of the credits required for recertification.
- 7.6.13 Proctoring Certification Tests: two (2) credits can be earned per occurrence (not per person), with a maximum of four (4) credits towards recertification.



7.6.14 Additional activities (e.g., mentoring of interns, teaching forensics college courses) shall be considered on a case-by-case basis and shall be added to the list of options for recertification credits as activities are identified - maximum of 30% of the credits required for recertification.

7.7 Reduction in Scopes, Suspensions and Revocations

7.7.1 Reduction of scope: If a certification program is suspended, terminated or its scope is reduced, person's certified pursuant to that program may no longer claim certification or claim that the certification covers areas involved in the scope reduction.

7.7.2 Suspensions and revocations: Certificates granted and issued may be suspended or revoked for any of the following reasons:

- a) Any confirmed significant violation of the "IAI Code of Ethics and Standards for Professional Conduct".
- b) Ethical concerns that affect public trust.
- c) Any violation of a provision of certification.
- d) Technical Error in casework or proficiency testing for which the person is certified.
- e) A criminal felony conviction or any crime involving moral turpitude.
- f) A misstatement, misrepresentation, concealment, or omission of a material fact(s) in an application.
- g) Improper issuance of certification; Issuance of a certificate where the individual was not in fact eligible to receive such certificate at the time of issuance.
- h) Failure to participate/respond to an FCMB investigation/complaint involving the certificants certification.

7.7.2.1 Self-reporting: Certified individuals shall report any intellectual and/or physical infirmity which may negatively affect their ability to perform the tasks for which they are certified.

7.7.2.2 Certified individuals shall report any issue which may negatively reflect on their proficiency in performing the tasks for which they are certified. Self-reporting will not automatically affect a member's certification.

7.7.2.3 Certified individuals shall report any legal impediment or conflict which may negatively affect their ability to perform the tasks for which they are certified.

7.7.2.4 Certification boards shall evaluate any self-reports and determine as to whether the individual may retain their certification. Certified individuals may exercise or waive any due process rights afforded by these regulations.

7.7.2.5 Any certified individual who fails to self-report shall be subject to a formal review as outlined under the grievance/complaints section.

7.7.3 If an individual's certification is being considered for suspension, the procedures will be as follows:

7.7.3.1 The certification board for which the person is certified will be advised of the allegation.

7.7.3.2 Each certification board for which the individual is certified will investigate the nature of the violation to ensure its' correctness.



- 7.7.3.3 The certificant will be advised of the inquiry and will be offered the opportunity to respond prior to any decisions being made by the Certification Board.
- 7.7.3.4 Upon review of all available materials pertinent to the inquiry, the individual board will make the determination if suspension is warranted, or if the situation is best dealt with through a letter of censure.
- 7.7.3.5 Prior to any notification of the board’s decision to the certificant, the chair of the board will notify the Director of the FCMB of the inquiry and the board’s decision.
- 7.7.3.6 Certified persons shall agree to abide by any agreement conditions and refrain from further promotion of the certification while the certification is suspended.
- 7.7.3.7 Failure to abide by any remedial actions associated with a suspension will result in revocation of certification.
- 7.7.3.8 If the certification was placed in suspension or forfeited by the certified individual due to technical error, the individual may be required to reapply for certification after a one-year suspension period. If required, the applicant must submit an application for certification, along with any supporting documentation required by the certifying board, pay the current certification fee and take a certification test commensurate with the violation.
- 7.7.4 If an individual’s certification is being considered for suspension or revocation, due to a violating a provision of their certification or a provision of the “IAI Code of Ethics and Standards for Professional Conduct” the procedures under complaints will be followed.
- 7.8 Use of Certificates, Logos and Marks
 - 7.8.1 Pursuant to the management agreement between the FCMB and the IAI, the FCMB and its constituent boards may use, without restriction, the IAI’s symbol and logo. The FCMB and its constituent boards may use, without restriction, materials copyrighted by the IAI.
 - 7.8.2 Any person certified by one of the certification boards shall be entitled to use the IAI symbol and logo, and any symbol and logo developed by the certification board by which they were certified, when referencing their accomplishment for the duration of the certification period.
 - 7.8.3 The FCMB shall address, by means of corrective measures, any misuse of its certification mark or logo.
 - 7.8.4 Replacement certificates are available at a \$40 fee which shall be paid at the time of the order.
- 7.9 Grievances/Appeals
 - 7.9.1 Applicants may at times disagree with the decisions of a certification board regarding pre-test qualifications, test results, or procedural matters. In such instances, an applicant may appeal a certification board decision following the procedures outlined in this section. Appellants should be mindful that these general procedures may be modified by the individual boards to account for timing and testing differences. Appeals shall be dealt with in a constructive, impartial and timely manner.



- 7.9.2 Appeals shall be filed in writing to the chair of the individual certification board within thirty (30) days of a board decision. The appeal must contain the specific reason for the appeal and provide supporting materials.
- 7.9.3 Upon receipt of an appeal, the chair or secretary of the individual board shall acknowledge receipt to the appellant. The secretary will initiate formal tracking, to include all pertinent information and actions undertaken to resolve the appeal. The secretary shall keep the appellant informed regarding the progress of the appeal, to include any corrective actions, the outcome and/or the reasons for the outcome. If applicable, appropriate corrections and corrective actions shall be taken. All documents pertaining to the appeal will be retained as part of the applicant/appellant's record.
- 7.9.4 Appeals shall be investigated and validated.
Those investigating concerns shall not have been involved in the event being appealed.
- 7.9.4.1 Administrative concerns: The chair will review the appeal and issue a decision. The review will ensure that actions taken by the board comply with the policies and procedures of the FCMB Operations Manual. The chair may confer with other members of their certification board during the review.
- 7.9.4.2 Technical concerns: Technical issues involving specific practices, knowledge and skills being tested as part of the certification process will be evaluated by subject matter experts who serve as part of the certification board. The chair of the individual certification board shall assign three (3) certification board members to review the appeal. Members of the review committee shall not have been involved in the evaluation/assessment of the appellant's certification exam. Previous similar situations will be considered. The review committee shall issue a finding and recommendation to the chair of the individual certification board within (30) days of its commission.
- 7.9.5 The chair of the individual certification board shall issue a decision to the appellant and the FCMB Director within thirty (30) days of an appeal that is administrative or within ten (10) days of an appeal from receiving the recommendation of the review panel for appeals that have technical concerns. The FCMB Director will review all materials to ensure the appropriateness of the investigation and corrective actions proposed prior to the Chair issuing the decision to the appellant.
- 7.9.6 The applicant may appeal a decision of the board chair directly to the FCMB within thirty (30) days of the individual certification board's decision. A written appeal must be filed with the Director of the FCMB through the IAI's main office (the IAI COO). The Director shall assign three (3) IAI members to review the appeal. The appeal committee will render a finding and recommendation within thirty (30) days. The Director will issue a decision within ten (10) days of the review committee's findings. The decision of the Director is final.
- 7.9.7 The FCMB shall give formal notice via certified mail, return receipt requested or by other means where proof of receipt/delivery is provided to the appellant at the end of the appeals-handling process.



- 7.9.8 The submission, investigation and decision on appeals shall not result in any discriminatory actions against the appellant.

7.10 Complaints

- 7.10.1 Per this manual, complaints rise above the level of a grievance. Complaints concern significant ethical violations regarding the “IAI Code of Ethics and Standards for Professional Conduct” or any acts committed, indicted or convicted of, including intentional false or concealed information, violations of certification requirements, engaged in fraudulent behavior, misrepresentation, theft, bribery, or any act that diminish public trust or reflect adversely on the integrity of the certificant or the IAI certification program (e.g., harassment, dishonesty, cheating on an exam). A complaint may be filed by any individual and should address alleged violations that have occurred within the past five (5) years. Complaints shall be submitted in writing, and signed, to the FCMB Director via the IAI main office (i.e., the IAI COO). If the complaint is generated by an individual who is not a member of the IAI, the complainant’s signature must be notarized. Once the Director receives a complaint, it shall be referred to as the petition.
- 7.10.2 The FCMB reserves the right to deny applications, or to suspend or revoke certifications due to a reasonable belief or probable grounds of competency issues, ethical violations, illegal behavior, compromised integrity, or undermined confidence in work performed, conclusions arrived at, or potential testimony. Reconsideration may be requested. The FCMB reserves the right to decline to consider any complaint or appeal.
- 7.10.3 Complaints must include 1) The name and contact information of the petitioner and the respondent, 2) the specific clause of the “IAI Code of Ethics and Standards for Professional Conduct” that is alleged to be violated, 3) supporting documentation that demonstrates the alleged violation (supporting documentation must be submitted in its entirety to ensure partial information is not taken out of context), and 4) the specific area, of the supporting documentation, that demonstrates the alleged violation must be highlighted.
- 7.10.4 The FCMB Director shall acknowledge receipt of the complaint and initiate formal tracking, to include all pertinent information and actions taken. Whenever possible, the FCMB shall keep the petitioner updated on the status of the complaint, including the outcome. The FCMB shall notify the certified person, the respondent, of the complaint if the complaint qualifies for consideration. A decision that a complaint does not qualify for consideration is final and not appealable.
- 7.10.5 Within thirty (30) business days of receipt of the petition, the Director in consultation with the IAI’s General Counsel when appropriate, shall review the petition to determine if it relates to certification activities for which it is responsible, and if it complies with the requirements of this manual. If the Director determines that the petition does not comply with this manual, citing the specific deficiency or deficiencies, the Director shall notify the petitioner in writing that the petition will not be considered at this time.



- 7.10.6 If the complaint complies with the requirements of this manual, the Director, in consultation with General Counsel, shall inform the respondent in writing that a petition has been submitted. The Director shall provide the respondent with a copy of the petition, including all submitted supporting materials, as well as a copy of the governing sections of this manual. Respondent shall submit a written response to the petition within thirty (30) days of the date of the notification letter.
- 7.10.6.1 Failure to respond will be considered as the respondent surrendering their certification.
- 7.10.6.2 The Director may choose to censure the respondent or, consult with General Counsel to temporarily suspend certification pending the outcome of court proceedings, or appoint a professional review board (PRB) to review the matter.
- 7.10.6.3 If a PRB is appointed, the Director shall have fifteen (15) business days to appoint three (3) individuals to address the petition. The PRB consists of members who are certified by the FCMB. If for any reason a member of the PRB is unable to perform these or/and other duties the Director shall immediately appoint another qualified member. Members of the PRB shall not be involved in the issue under review. The Director shall designate a chairperson who will be responsible for collating the results of the review of the parties' submissions and drafting the factual findings and recommendations to the Director. The PRB will schedule at least one meeting, in person or via conference call, to review the materials. The PRB shall act by majority vote and strive to render a decision with respect to the petition within ninety (30) days of receipt of the petition and the respondent response. If an extension is necessary, with just cause, all parties will be notified. Extensions will be as short as possible (may be pending additional information). The PRB shall notify the Director in writing, of its factual findings and recommendation. The Director shall consider the findings of the PRB and decide, in consultation with General Counsel, whether to dismiss the complaint or proceed with remedial action. Possible remedial actions include, but are not limited to censure, suspension or revocation of certification. The petitioner and the certified member will be notified in writing of the decision made.
- 7.10.6.4 If the Respondent surrenders their certification while an investigation involving the Respondent is pending, the Director, in consultation with the General Counsel shall decide whether the petition should proceed.
- 7.10.7 The respondent may appeal the decision of the Director, by filing a written request with the Director within thirty (30) days of the date of the written notification letter. The written request for an appeal shall address one or more of the following questions:
- (1) Were there facts or circumstances which the PRB or Director failed to consider?
 - (2) Were there facts or circumstances for which the PRB or Director failed to give sufficient weight?



- (3) Is there new evidence which was unavailable to the PRB or Director which should be considered now?
- (4) Was the penalty imposed inappropriate to the offense charged?
- (5) Was the remedial process in accordance with the current procedures?

If the Director determines the notice of appeal is timely and states the requirements set forth in this section, the Director shall establish a three (3) member Board to hear the appeal. The Board decision is final.

- 7.10.8 All matters involving complaints shall be considered confidential. Persons involved in the processing or review of complaints shall not distribute, by any means, information about the content of the complaint or any filings by the complainant or respondent except as needed to properly investigate and process the complaint as required by this section.
- 7.10.9 Correspondence related to the notice and findings of appeals and complaints shall be by certified mail, return receipt requested or by other means where proof of receipt/delivery is provided. All complaints and associated documentation, including the outcome, will be tracked and retained in the FCMB shared files.
- 7.10.10 The procedures shall treat all parties fairly and equitably. The policies and procedures shall ensure that all complaints are handled and processed in a constructive, impartial and timely manner. All attempts shall be made to ensure appropriate actions.

8.0 Certification/Recertification Schemes

All schemes shall include a scope, job tasks required for the scope, competencies required for each job task, prerequisites required, test format, passing criteria and references where information for successful completion of the test can be attained.

8.1 BLOODSTAIN PATTERN ANALYSIS CERTIFICATION

Scope of Certification

Bloodstain pattern analysis (BPA) is based on the sciences of biology, mathematics and physics. The bloodstain pattern analyst understands these sciences and the role they play in determining how blood reacts when exiting the body and/or acted upon by force. A Certified Bloodstain Pattern Analyst has demonstrated a sufficient amount of education, training, experience and knowledge necessary to recognize and apply the principles of bloodstain pattern analysis.

Tasks Related to Scope

Analysis of the size, shape, distribution and appearance of bloodstains and bloodstain patterns, as a means of determining the types of activities and mechanisms that may have produced them.

Competencies Required for Tasks

- Knowledge of the history of BPA
- Ability to apply the scientific principles relating to BPA
- The principles of physics relating to BPA
- Mixed and sequenced stain identification (Complex Bloodstains)



- Application of the Scientific Method (Observation, Question, Hypothesis, Experimentation, Analysis and conclusion)
- Physical laws of motion
- Surface tension
- Viscosity
- Gravity
- Air resistance
- Understanding of blood components, human anatomy and physiology
- The effects of environmental factors on the formation and drying time of blood
- Air flow, humidity, temperature, substrate
- Understanding the characteristics of blood in motion
- Drop formation
- Oscillation
- Flight paths
- Distribution of stains
- Kinetic energy
- The mathematical principles of BPA
- Measurement of bloodstains
- Trigonometric functions
- Methods to determine in three-dimensional space the area of origin
- How to identify bloodstain patterns by their size, shape, distribution and appearance
- Demonstrate techniques of bloodstain pattern documentation to include photograph, sketches and notes
- Understand and explain the limitations of BPA
- Chemical testing and documentation
- Bio-hazard considerations
- The BPA must be able to effectively communicate their findings, conclusions and opinions in written and/or verbal form

Test Content - initial certification (proctored test; 6 hours to complete)

Part 1: Written Examination (100 multiple choice and true-false questions; 75% is passing)

Part 2: Pattern Identification (15 bloodstain patterns; 12/15 is passing)

Part 3: Analysis Portion (15 crime scene scenarios with short essay answers providing support for the conclusions drafted: 12/15 is passing)

Part 4: Area of Convergence and Area of Origin Calculation (one (1) spatter pattern; 100% required to pass)

Test Content – recertification (unproctored; 30 days to complete)

Part 2 above

Part 3 above

Part 4 above

References (reading material)

- *Principles of Bloodstain Pattern Analysis: Theory and Practice*, James, Kish, Sutton, 2005 CRC Press



- *Handbook of Forensic Pathology*, DiMaio, Dana, 2nd Ed, 2006, CRC Press
- *Practical Crime Scene Analysis & Reconstruction*, Ross Gardner and Tom Bevel, 2009, CRC Press
- *Scientific Working Group on Bloodstain Pattern Analysis: Recommended Terminology*, 2009, https://theiai.org/docs/SWGSTAIN_Terminology.pdf

8.2 CRIME SCENE CERTIFICATION

Scope of Certification

A Certified Crime Scene Investigator, Crime Scene Analysts and Senior Crime Scene Analysts has successfully demonstrated a sufficient amount of training, experience, knowledge and understanding related to crime scene response in order to identify, document, collect and preserve physical evidence. A certificant shall only hold one level of crime scene certification at any given time.

The **Certified Crime Scene Investigator Certification (CCSI)** is aimed at the beginning crime scene investigator to assist in the basic methodology of completing a thorough crime scene investigation, which includes locating, documenting, and collecting evidence.

The **Certified Crime Scene Analyst Certification (CCSA)** is aimed at the crime scene investigator who has progressed through the beginning stages of crime scene investigation and progressing to the limited analysis of selected evidence.

The **Certified Senior Crime Scene Analyst Certification (CSCSA)** is aimed at the senior level crime scene investigator who is responsible for every aspect of the crime scene including advanced analysis of the evidence at the scene or collected from the scene. The senior level crime scene investigator may also be responsible for the reconstruction of certain aspects of the crime scene or providing the means for a competent reconstruction to be conducted.

Certified Crime Scene Reconstructionist certification is no longer available to new applicants. All certifications will expire by May 2022.

Tasks Related to Scope

- Responds to crime scenes
- Establishes crime scene perimeter and employs searching techniques
- Conducts an assessment of the crime scene
- Has a significant role in locating evidence at crime scenes
- Employs a crime scene processing methodology
- Documents crime scenes
- Has a significant role in locating evidence at crime scenes
- Documents evidence location
- Recovers evidence
- Writes reports
- Collects evidence and properly collects, packages and preserves evidence for courtroom proceedings



- Documents, preserves, analyzes, and recovers: impression evidence, trace evidence, transfer evidence, geometric evidence, tool-mark evidence, serological and biological evidence, firearm and ballistic evidence, and perishable evidence
- Analyzes fires for signs of arson
- Analyzes the scene to provide information that assists in the discovery of latent physical evidence using development techniques
- Analyzes the scene and evidence using light technologies
- Documents bloodstain evidence and recovers bloodstain evidence
- Documents evidence using photographic techniques
- Conducts interpretation of bloodstain patterns in the scene and evidence collected from the scene; employs photographic enhancement techniques; and conducts crime scene reconstruction of certain aspects of the scene and evidence within the scene
- Interprets bloodstain patterns (CCSI, CCSA & CSCSA)
- Interprets bullet trajectories
- Conducts crime scene reconstruction (CSCSA)
- Provides expert testimony in courtroom proceedings (CSCSA)

Competencies Required for Tasks

- Knowledge of methods to establishing crime scene perimeters
- Knowledge of assessing a crime scene
- Knowledge of and ability to employ a crime scene methodology
- Knowledge of and employs searching techniques to locate evidence
- Knowledge of documenting, preserving, analyzing, and recovering: impression evidence, trace evidence, transfer evidence, geometric evidence, tool-mark evidence, serological and biological evidence, firearm and ballistic evidence, transient, and perishable evidence
- Knowledge of crime scenes documentation methods
- Knowledge of crime scene sketching, diagramming, and mapping
- Knowledge of report writing
- Knowledge of the rules of evidence in courtroom proceedings
- Knowledge of documentation, enhancement, and preservation techniques for latent physical evidence and other impression evidence
- Understands photographic techniques and the basic operation of the digital single lens reflex and video cameras
- Understanding of methods for determining signs of arson
- Understanding of internal, external, and terminal ballistics
- Understands class and individual characteristics, and the nature of physical evidence
- Understands the interpretation of bloodstain patterns
- Interprets bullet trajectories and defects
- Understands the basic concept of crime scene reconstruction (CSCSA)
- Understands the history of crime scene processing and criminalistics
- Understands the rudimentary understanding of DNA
- Knowledge of presumptive testing methods
- Understand issues related to scene and evidence contamination and is aware of personal protective equipment
- Understands ethical decision making



- Knowledge of medicolegal death investigation
- Understands fire dynamics and basic arson investigation techniques
- Knowledge of crime scene contamination mitigation
- Understands wound dynamics
- Understands the use of light techniques for scene and evidence purposes
- Understands the methodology of processing buried body and surface skeleton scenes
- Has an understanding of complementary forensic sciences that assist in determining time of death, such as forensic entomology, botany, and anthropology.

Test Content – initial certification (proctored test)

CCSI Test (3 hours to complete): 200 multiple choice questions (75% to pass)

CCSA Test (4 hours to complete): 300 multiple choice questions (75% to pass)

CSCSA Test (5 hours to complete): 400 multiple choice questions (75% to pass)

References (reading material for initial Crime Scene certifications)

Certified Crime Scene Investigator (CCSI)

- *Practical Crime Scene Processing and Investigation, 3rd edition*, by Ross M. Gardner, 2019, CRC Press.

Note: A new exam will be implemented as of 10/1/2022. Test questions will include information from this new reference.

- *Crime Scene Photography, 3rd Edition*, by Edward Robinson, 2016, Academic Press-Elsevier, Inc. (All Chapters EXCEPT 1, and 8 thru 12)

Note: Exams taken after 10/1/2022 will include All Chapters and glossary EXCEPT chapters 1, and 10 thru 12.

- *Practical Crime Scene Processing and Investigation, 2nd edition* by Ross M. Gardner, 2012, CRC Press.

Note: Exams taken after 10/1/2022 will not include information from this reference material.

Certified Crime Scene Analyst (CCSA)

- *Crime Scene Photography, 3rd Edition*, by Edward Robinson, 2016, Academic Press-Elsevier, Inc. (All Chapters EXCEPT 1, Subchapters 9.4, 9.6 and 9.7, and Chapters 10 thru 12)

- *Techniques of Crime Scene Investigation, 8th edition* by Fisher, Barry and Fisher, David, 2012, CRC Press

Certified Senior Crime Scene Analyst (CSCSA)

- *Crime Scene Photography, 3rd Edition*, by Edward Robinson, 2016, Academic Press-Elsevier, Inc. (All Chapters EXCEPT 1, Subchapters 9.4, 9.6 and 9.7, and Pages 712-735)

- *Effective Expert Witnessing: Practices for the 21st Century, 5th ed.* By Matson, Jack V., 2013, CRC Press (All chapters EXCEPT 8 and 9)

- *Forensic Science: An Introduction to Scientific and Investigative Techniques, 4th edition* by James, Stuart H., Nordby, Jon J., and Bell, Suzanne, 2013, CRC Press

Test Content – recertification (unproctored; 10 days to complete)

50 multiple choice questions (75% to pass)

References (reading material for all Crime Scene recertifications)



- *Practical Crime Scene Processing and Investigation, 3rd edition*, by Ross M. Gardner, 2019, CRC Press.
Note: A new exam will be implemented as of 10/1/2022. Test questions will include information from this new reference.
- *Practical Crime Scene Processing and Investigation, 2nd edition* by Ross M. Gardner, 2012, CRC Press.
Note: Exams taken after 10/1/2022 will not include information from this reference material.

8.3 FOOTWEAR CERTIFICATION

Scope of Certification

A Certified Footwear Examiner has demonstrated a sufficient amount of training, experience, knowledge and understanding of terminology, detection, recovery, photography, preservation, enhancement, analysis, comparison, manufacturing processes, documentation, reporting and courtroom testimony of footwear impression evidence to be considered an expert in their field. Candidates for certification are primarily employed in the field of Forensic Science with duties to include the examination of footwear impression evidence.

Tasks Related to Scope

- Analysis of impressions to determine suitability for capture/comparison
- Analysis of impressions to determine possible origin
- Analysis of impressions to determine possible size and design
- Analysis of impressions to provide an assessment of wear
- Analysis of impressions to determine rarity and specificity of features
- Comparison of impressions to assess feature commonality
- Comparison of impressions with available databases
- Evaluation of features to determine source attribution
- Preservation of impressions through photographic means
- Enhancement of impressions via chemical and digital means
- Documentation of proper analysis, comparison, and evaluation of impressions
- Relation of manufacturing attributes to the analysis and/or comparison process.
- Recovery of impressions evidence in typical and adverse conditions
- Acquisition of test impressions
- Documentation of written opinions
- Communicate observations and findings utilizing discipline accepted terminology
- Working knowledge of SWGTREAD related standards and guidelines

Competencies Required for Tasks

- Interpret available data to determine quantity, quality and specificity of features
- Interpret available data to determine type of impression (Footwear, or other)
- Interpret available data to assess overall dimensions and pattern according to manufacturer specificities
- Interpret available data to assess the location and degree of outsole degradation.



- Interpret available data to determine the strength of analyzed features
- Interpret available data to accurately assess correspondence and non-correspondence between impressions
- Ability to accurately search impressions within available datasets
- Demonstration of the ability to render approved conclusions
- Demonstration of ability to utilize photographic or other digital means of capture/documentation
- Knowledge of approved chemical development or digital enhancement techniques for the purpose of impression enhancement
- Ability to properly document all aspects of the examination process
- Ability to determine whether features observed are randomly or manufacturer acquired
- Ability to collect and preserve and/or provide instructions on how to collect and preserve impressions in a variety of conditions using approved methods and techniques
- Ability to obtain or instruct how to obtain high quality test impressions for comparison purposes (e.g., casting, ink, etc.)
- Ability to document and support conclusions such that another qualified examiner can accurately interpret the results
- Ability to accurately relay observations and findings utilizing terminology accepted by the specific discipline (Footwear and/or Tire Track)
- Working knowledge of material published by SWGTREAD

Test Content – initial certification

Part 1: Written Test, proctored (2 hours to complete: 100 multiple choice questions; 80% score or higher to pass).

Note: A new test will be implemented for all applications submitted as of 6/2022. Test questions will include information from a new reference source, as indicated below.

Part 2: Practical Test, unproctored (60 days to complete 3 separate scenarios. Correct conclusions with supporting documentation must be provided for successful completion. Graded on a Pass/Fail basis: No erroneous inclusions or exclusions).

Test Content – recertification (unproctored; 30 days from date of postmark to complete)

Practical Test: one (1) scenario. Correct conclusions with supporting documentation must be provided for successful completion. Graded on a Pass/Fail basis: No erroneous inclusions or exclusions.

References (reading material)

- *Forensic Footwear Evidence*, Bodziak, W.J., 1st Edition, 2017, CRC Press.
Note: A new test will be implemented for all applications submitted as of 6/2022. Test questions will include information from this new reference.
- *Footwear Impression Evidence*, Bodziak, W. J., 2nd Ed, 2000, CRC Press.
- *IAI Recommended Course of Study for Footwear and Tire Track Examiners*, 2006, ver. 1, https://www.memberleap.com/members/store_product.php?orgcode=IAI&pid=22241301
- *SWGTREAD Guide for the Collection of Footwear and Tire Impressions in the Field*, 2005, https://treadforensics.com/images/swgtread/standards/current/swgtread_01_collection_field_200503.pdf



- *SWGTHREAD Guide for the Collection of Footwear and Tire Impressions in the Laboratory*, 2005,
https://treadforensics.com/images/swgthread/standards/current/swgthread_02_collection_laboratory_200503.pdf
- *SWGTHREAD Guide for the Detection of Footwear and Tire Impressions in the Laboratory*, 2005,
https://treadforensics.com/images/swgthread/standards/current/swgthread_04_detection_laboratory_200503.pdf
- *SWGTHREAD Guide for the Detection of Footwear and Tire Impressions in the Field*, 2005,
https://treadforensics.com/images/swgthread/standards/current/swgthread_03_detection_field_200503.pdf
- *SWGTHREAD Guide for the Preparation of Test Impressions from Footwear and Tires*, 2005,
https://treadforensics.com/images/swgthread/standards/current/swgthread_05_test_impressions_200503.pdf
- *SWGTHREAD Guide for Minimum Qualifications and Training for a Forensic Footwear and/or Tire Tread Examiner*, 2006,
https://treadforensics.com/images/swgthread/standards/current/swgthread_07_qualifications_training_200603.pdf
- *SWGTHREAD Guide for the Examination of Footwear and Tire Impression Evidence*, 2006,
https://treadforensics.com/images/swgthread/standards/current/swgthread_08_examination_200603.pdf
- *SWGTHREAD Range of Conclusions Standard for Footwear and Tire Impression Examinations*, 2013,
https://treadforensics.com/images/swgthread/standards/current/swgthread_10_conclusions_range_201303.pdf
- *SWGTHREAD Guide for Casework Documentation*, 2008,
https://treadforensics.com/images/swgthread/standards/current/swgthread_13_notetaking_200803.pdf
- *SWGTHREAD Guide for the Chemical Enhancement of Bloody Footwear and Tire Impression Evidence*, 2008,
https://treadforensics.com/images/swgthread/standards/current/swgthread_14_enhancement_chemical_200809.pdf
- *SWGTHREAD Standard for Terminology Used for Forensic Footwear and Tire Impression Evidence*, 2013,
https://treadforensics.com/images/swgthread/standards/current/swgthread_15_terminology_evidence_201303.pdf

8.4 FORENSIC ART CERTIFICATION

Scope of Certification

A Certified Forensic Artist has successfully demonstrated a sufficient amount of training, experience, knowledge, understanding and artistic skill related to composite imaging, age progression or image enhancement, and facial reconstruction to meet standardized certification guidelines.

- Composite Imaging: Preparation of a facial image depicting an unknown subject which is developed from information obtained during an interview of a witness or victim



- Postmortem Reconstruction: Preparation of a facial image of an unidentified decedent created for the purpose of identification. These forensic postmortem reconstructions, developed from skeletal or soft-tissue remains, may be either three dimensional or two-dimensional
- Age Progression: Preparation of a facial image that depicts a subject at an advanced age

Tasks Related to Scope

- Create composites from individually described component parts (features) that result in a reasonable facial likeness of the described subject.
- Create facial images from unidentified post-mortem and skeletal remains that depict a reasonable likeness of the subject.
- Create facial images of an individual at a progressed age that depict a reasonable likeness of the subject at the targeted age advancement.
- Create facial images with anatomically correct features.
- Create facial images with anatomically correct mid-face proportions.
- Create facial images that accurately reflect the subject's ethnicity, gender and age.
- Properly use value (light and shade) to illustrate perspective, utilizing the applicant's chosen medium.
- Correctly use eyewitness interviewing techniques, which aid memory, recall and recognition, while developing a composite drawing.
- Appropriately interpret all available case information, documents, images, reports and statements when creating facial images.
- Appropriately reports, handles and documents case information and evidence.
- Submits final images in a professional format that allows for accurate redistribution.
- Adheres to generally accepted ethical practices in the field.

Competencies Required for Tasks

- The applicant must demonstrate a reasonable skill in utilizing their chosen artistic media. Media include but are not limited to charcoal, graphite, pastels, paint and/or computer graphics software.
- Demonstrates an understanding of how to use light on forms (value) to depict perspective when creating facial images
- Knowledge of facial anatomy, facial features, and facial nomenclature
- Knowledge of human memory and perception concepts
- Knowledge of Cognitive Interviewing techniques and common practices employed during a composite interview with an eyewitness
- Knowledge of common Forensic Art-related terminology and definitions
- Knowledge of advanced drawing and reconstruction techniques
- Ability to maintain consistency in imaging techniques
- Demonstrate the ability to merge multiple images from a description into a proper anatomical sketch that reasonably depicts a facial likeness of the intended subject
- Demonstrate the ability to accurately depict differences in age, race and gender
- Knowledge of age progression techniques



- Demonstrate a sound understanding of the physical mechanics of facial aging
- Demonstrate the ability to reasonably age facial features appropriate to the projected age range
- Demonstrate a reasonable understanding of facial wrinkle placement and the directionality of facial lines based on facial anatomy and the aging process
- Knowledge of basic post-mortem changes, terminology and reconstruction techniques
- Knowledge of human skull and facial bone anatomy
- Knowledge of common practice procedures for preparing a skull for the reconstruction process
- Demonstrate the correct use of a photographed reference scale for feature measurement when developing a facial reconstruction from skeletal remains
- Demonstrate the correct placement of facial features aligning with the underlying bony structure when creating a facial reconstruction
- Demonstrate the correct use of photographed tissue depth-markers to create facial contours during a facial reconstruction from skeletal remains
- Demonstrate the ability to use and interpret all available case information, reports, photographs, documents and statements to create a final facial image
- Ability to submit final images in an appropriate professional format that has appropriate resolution (not pixelated or of poor quality at a standard 8.5" x 11" size), reflects the color, quality and accuracy of the original image, and which can be redistributed without quality loss or pixilation
- Knowledge of court testimony protocols and acceptable practices in the field

Test Content – initial certification (proctored test; 2 hours to complete)

Part 1: Written Examination (50 multiple choice/True and False questions; 75% to pass)

Part 2: Practical Examination #1 – 2 composite drawings (75% to pass)

Part 3: Practical Examination #2 – 1 Skull Reconstruction (75% to pass)

Part 4: Practical Examination #3 – 1 Age Progression (75% to pass)

Part 5: Submit portfolio with a total of thirteen (13) actual case drawings or images illustrating work in any or all aspects of the forensic art field. A minimum of three (3) successful cases must be included with supporting images of the identified person, as well as a short case history (date, crime, location) and a short narrative on how the forensic image assisted in the apprehension or identification of the individual. The portfolio may include training images but the three images requiring a successful identification MUST have been produced for actual cases.

Recertification Track 1 (for working forensic artists)

Submit five (5) successful cases to include images of the identified person each with a short case history (date, crime, location) and a short narrative on how the forensic image assisted in the apprehension or identification of the subject.

EFFECTIVE 01/01/2023 – Recertification Track 1 requirements (for working artists)

Part 1: Written Examination (5 multiple choice/True and False questions)



Part 2: Submit five (5) successful cases to include images of the identified person, each with a short case history (date, crime, location) and a short narrative on how the forensic image assisted in the apprehension or identification of the subject.

Part 3: (UNLESS PREVIOUSLY TAKEN) Practical Examination # 1- 2 composite drawings (75% to pass)

Part 4: (UNLESS PREVIOUSLY TAKEN) Practical Examination # 2- 1 Skull Reconstruction (75% to pass)

Part 5: (UNLESS PREVIOUSLY TAKEN) Practical Examination # 3- 1 Age Progression (75% to pass)

Recertification Track 2 (for retired forensic artists)

The retired forensic artist must provide documentation of having provided forensic art expertise as an educator, lecturer, or author in some capacity for at least 60 hours in total. This could include writing forensic art related materials for an agency, educational program and/or professional organization.

EFFECTIVE 01/01/2023 – Recertification Track 2 (for retired forensic artists)

Part 1: Written Examination (5 multiple choice/True and False questions)

Part 2: The retired forensic artist must provide documentation of having provided forensic art expertise as an educator, lecturer, or author in some capacity for at least 60 hours in total. This could include writing forensic art related materials for an agency, educational program and/or professional organization.

References (reading material)

- *Forensic Art and Illustration*, Karen T. Taylor, CRC Press, LLC, 2001
- *How to Draw the Human Head/Techniques and Anatomy*, Louise Gordon, Penguin Books, 1977
- *Forensic Facial Reconstruction*, Caroline Wilkinson, Cambridge University Press, 2004
- *Memory-Enhancing Techniques for Investigative Interviewing: The Cognitive Interview*, Ronald P. Fisher R.E. Geiselman, Thomas, 1992

8.5 FORENSIC PHOTOGRAPHY & IMAGING CERTIFICATION

Scope of Certification

A Certified Forensic Photographer has demonstrated a sufficient amount of training, experience, knowledge and abilities to provide accurate photographs of crime and accident scenes under conditions existing at the time, as well as precise photographic documentation of evidence items both in-situ (in the position found) and in a controlled setting that will allow for subsequent forensic examination. A Certified Forensic Photographer may also demonstrate the ability to provide accurate fire scene, aerial, surveillance and/or public relations photography.

Tasks Related to Scope

- Photographic documentation of crime scenes, accident scenes, personal injuries, vehicles, and items of evidence including photographic documentation of pattern and impression evidence (latent, footwear, tire tracks, bitemarks, and bloodstain interpretation)
- Image processing for the purpose of providing an accurate representation of the subject



- matter for printing, electronic display, projecting, or electronic transmission
- Archiving and maintenance of digital images and photographs

Competencies Required for Tasks

- Demonstrate the ability to provide correctly exposed, properly composed, properly color balanced, and sharp, in-focus images of all subject matter
- Demonstrate the ability to properly light and photograph items of specific evidence to allow sufficient detail of that item to be viewed and analyzed
- Demonstrate the ability to take photographs in an organized sequence that will enable the viewer to orient and understand the subject matter
- Demonstrate the ability to take photographs in low light, in darkness, and in challenging conditions
- Provide overall photographs that establish the location of and orientation of item(s) that would enable a future reconstruction of the scene if needed
- Provide mid-range photographs to establish the location, orientation, and relative relationships of objects and other items within that scene
- Demonstrate the ability to take close-up photographs of all objects of interest both with and without a forensic scale
- Demonstrate the proper selection and application of scales within a forensic examination photograph (forensic scales vs non-forensic scales)
- Demonstrate the ability to properly document photographs (photography log)
- Demonstrate the ability to make a sketch of a scene to assist in orienting the scene and identifying the location of objects photographed within the scene
- Provide forensic examination quality photographs of impression evidence on solid, transparent, reflective/shiny, curved, and textured surfaces
- Provide forensic examination quality photographs of impression evidence in dirt, sand snow or any other surface where that impression is visible
- Demonstrate the ability to take accurate photos of injuries to include bruising, open wounds, deformities, and scarring
- Demonstrate an understanding of techniques allowable by SWGIT
- Demonstrate the ability to make image corrections and enhancements for the purpose of providing a true and accurate representation of the subject matter to include basic color correction, brightness and contrast adjustments, and linear filtering techniques
- Demonstrate the ability to size images for electronic display, printing, or projection
- Demonstrate the ability to size images for specific output (e.g., file dimensions of 8 x 10 inches at 240 ppi)
- Demonstrate the ability to size an image to a 1:1 ratio for comparison purposes using imaging software, typically Adobe Photoshop
- Demonstrate an understanding and use of image authentication and integrity (image preservation and protection) processes:
 - Image authentication, in relation to this certification, is the verification that the image is a fair and accurate depiction of the scene, item or individual at the time the image was made
 - Image integrity is the verification that the content of the image has not been changed since it was taken (i.e., use of metadata)



- Demonstrate the proper use of file formats based on the subject matter being photographed
- Knowledge of legal issues that impact the admissibility of photographs in a courtroom setting
- Knowledge of events that are of historical significance to the admissibility of photographs in a courtroom setting
- Demonstrate a basic understanding of digital imaging: how a digital image is made; the difference in camera sensors and the resulting impact on photographs; the settings necessary to obtain optimal print quality; the importance of selecting the proper file format; using proper settings to achieve desired results
- Knowledge of basic photography techniques, including how to use camera controls, how to control depth of field, how to control movement, how to use camera flash, the proper use of lenses, the proper use of filters, taking photographs from a proper perspective, and how to overcome lighting challenges
- Knowledge of advanced photography techniques including photogrammetry, using alternative light sources, perspective grid photography, High Dynamic Range (HDR) photography, surveillance photography, and low lighting techniques
- Knowledge of the visible, infrared, and ultraviolet light spectrums and how to use those light sources in photography
- Knowledge of exposure theory, depth of field, light theory
- Knowledge of the proper use of imaging editing software required to process images
- Knowledge of metadata and its significance in tracking image adjustments and containing relevant information required to validate images
- Knowledge and understanding of category 1 and category 2 images
- Demonstrate ability to utilize painting with light technique
- Knowledge of uncompressed and lossless compression
- Ability to process items with black powder

Test Content – initial certification (parts are sent separately)

Part 1: Written Examination-proctored (2 hours to complete): 100 multiple choice questions – 80% to pass)

Part 2: Practical Examination – unproctored (30 days to complete each part)

Part A: Three (3) Assignments (must pass all 3 assignments to pass)

- (1) Crime Scene (80% to pass)
- (2) Footwear Impressions (80% to pass)
- (3) Night Scene (80% to pass)

Part B: Three (3) Assignments (must pass all 3 assignments to pass)

- (4) Injury (80% to pass)
- (5) Latent Prints (80% to pass)
- (6) Vehicle (80% to pass)

Test Content – recertification (unproctored; 30 days to complete)

Successfully complete 3 of 5 assignments (80/100 points to pass each assignment)

- Clothing with a stain



- Macro Assignment
- Footwear Impression
- Night Scene
- Vehicle Documentation

References (reading material)

- *A Short Course in Digital Photography* (2nd or 3rd Edition) by London and Stone, 2012, 2015
- *Crime Scene Photography*, (2nd or 3rd Edition) by Edward M. Robinson, 2010, 2016
- *SWGIT Guidelines*. https://www.theiai.org/docs/SWGIT_Guidelines_0221.pdf
Sections 5, 8, 9, 11, 13, 14, 15, 17 & 19

8.6 FORENSIC VIDEO ANALYSIS CERTIFICATION

Scope of Certification

A Forensic Video Examiner is a forensic science service provider who examines, compares and/or evaluates video in legal matters. The **Certified Forensic Video Examiner Certification (CFVE)** demonstrates that the Forensic Video Examiner has acquired and demonstrated specialized knowledge, skills, and abilities (KSAs) in the standard practices necessary to conduct forensic video examinations.

Tasks Related to Scope

- Acquisition of video files from various recording devices
- File verification and integrity
- Evidence handling and packaging
- Playback of various video file formats, including proprietary formats
- Video file format conversion
- Video processing techniques
- Image processing techniques
- Video editing
- Video enhancement/clarification
- Image enhancement/clarification
- Identification of damaged media
- Video file repair/reconstruction
- Photogrammetry
- Comparative analysis
- Content authentication
- Source authentication
- Documentation/authorship of expert opinion reports
- Expert testimony in legal proceedings
- Identification of video/image attributes and compression artifacts
- Mitigation of sources of error, uncertainty, and bias
- Operation of current and legacy equipment/methods



- File format and metadata analysis

Competencies Required for Tasks

- Describes the process in the creation and encoding of digital video files
- Identification of the best method of video file acquisition dependent on recording device
- Understanding of technical report writing and courtroom testimony
- Understanding of digital video recorders/recording devices technology
- Knowledge and understanding of compression and the effects on images and videos
- Effectively performs integrity checks on various digital video files
- Properly packages acquired evidence and/or deliverables
- Understands chain of custody and proper evidence handling techniques
- Understands the rules of evidence pertaining to legal proceedings
- Effectively converts proprietary file formats to an open format using both lossy and lossless techniques
- Edits video file length using both lossy and lossless techniques
- Effectively selects still images from video and clarifies the still images in a non-destructive manner.
- Effectively addresses the limitation/defect of the clarification of video or still images
- Articulates approaches to measuring the height/length/distance of objects in 2-dimensional imagery
- Identifies sources of, and methods to calculate uncertainty when measuring in video/images
- Identifies sources of potential error, uncertainty, and bias
- Identifies the proper use of underlying technology and potential deficiencies based on deficiency
- Identification of the best method of video/still image file archival
- Identifies/comprehends the evidentiary value, methodology, and limitations of photographic comparison/photogrammetry
- Understands compression algorithms and file formats utilized in digital imaging.
- Identifies different file formats, encoding standards, and compression algorithms used in digital video
- Identifies/understands file information/metadata.

Test Content

Part 1: Written Test consisting of 100 multiple choice questions (3-hour time limit). A 75% or higher score is required to pass.

Part 2: Practical Test consisting of 22 questions requiring the applicant to examine, compare and/or evaluate supplied video files and answer questions concerning various aspects of the media. An 85% or higher score is required to pass.



Part 3: Practical Test requiring the applicant to examine, compare and/or evaluate 4 supplied video files and return processed media and/or expert report(s). Each aspect of the test is assigned a specific point value and an 85% or higher score is required to pass.

Test Administration

Part 1 testing shall be in accordance with Section 7.2 of the FCMB Operations Manual. Upon successful completion of the Part 1, the secretary of the certification board (or designee) will notify the applicant and send test Parts 2 and 3 to the applicant. The applicant may use any resource available to them to complete test parts 2 and 3, however the responses must be the sole original work of the applicant. Test parts 2 and 3 must be completed and returned to the secretary of the certification board.

Test Content – recertification

Continuing education only.

References (reading material)

- How Video Works, by Marcus Weise and Diana Weynand (2nd Edition), Entire Text
- Proposed Framework for Digital Video Authentication (All), available at https://www.ucdenver.edu/docs/librariesprovider27/ncmf-docs/theses/wales_thesis_spring2019.pdf?sfvrsn=b98a78b9_2
- A Proposed Framework for Forensic Image Enhancement (Chapters 1-4), available at https://www.ucdenver.edu/docs/librariesprovider27/ncmf-docs/theses/ledesma_thesis_fall2015.pdf?sfvrsn=804d97b8_2
- SWGDE Image Processing Guidelines, v 1.0 available at https://drive.google.com/file/d/1LbRsCg3__t1zjffu2CeK6rlzglCMfuWN/view
- MPEG-4 Video Authentication Using File Structure and Metadata (Chapters 1, 4-6), available at https://www.ucdenver.edu/docs/librariesprovider27/ncmf-docs/theses/hall_thesis_fall2015.pdf?sfvrsn=8c4e97b8_2
- SWGDE Best Practices for Data Acquisition from Digital Video Recorders, v 1.0
- SWGDE Technical Overview for Forensic Image Comparison, v 1.0 available at <https://drive.google.com/file/d/11Pa7DOJmSJ00AieJcjNEGu7BjkCnvQkF/view>
- SWGDE Technical Overview of Digital Video Files, v. 1.0
- SWGDE Best Practices for Digital Image Compression and File Formats Guidelines, v. 1.0
- SWGDE Technical Notes on FFmpeg, v. 1.0
- SWGDE Best Practices for the Forensic Use of Photogrammetry, V. 1.0
- SWGDE Digital and Multimedia Evidence Glossary, v. 3.0
- SWGDE Best Practices for Image Content Analysis, v. 1.0
- SWGDE Core Technical Concepts for Time-Based Analysis of Digital Video Files, v. 1.0
- SWGDE Best Practices for Digital Forensic Video Analysis, v. 1.0
- SWGDE Establishing Confidence in Digital and Multimedia Evidence Forensic Results by Error Mitigation Analysis, v 2.0



8.7 LATENT CERTIFICATION

Scope of Certification

A Certified Latent Print Examiner has successfully demonstrated a sufficient amount of training, experience, knowledge and understanding related to processing items of evidence in order to visualize areas of friction ridge detail using chemical, physical, and electronic development techniques; the examination and comparison of latent print evidence; as well as providing expert testimony in courts of law.

Tasks Related to Scope

- Process evidence for latent prints
- Communicate scientific and discipline specific concepts regarding friction skin physiology and morphology, terminology, detection, recovery, photography, preservation, enhancement, analysis, comparison, documentation, reporting and court testimony related to latent print evidence
- Analyze and compare latent prints to known exemplars.
- Arrive at correct conclusions of identification and exclusion

Competencies Required for Tasks

- Ability to conduct the analysis, comparison, and evaluation involved in a visual comparison of latent prints and patent prints to friction ridge standards including fingerprints, joint fingerprints, tip fingerprints, palm prints, and footprints and arrive at correct conclusions (graded against ground truth conclusions)
Identification: Identification is reached when the friction ridge impressions have sufficient corresponding ridge detail such that consensus judgement would not expect to see the same arrangement of details repeated in an impression that came from a different source
Exclusion: Exclusion is reached when the friction ridge impressions have sufficient disagreement to conclude an impression originated from a different source
- Knowledge and understanding of the methods involved in processing items of evidence for the visualization of areas of friction ridge detail using chemical, physical, and electronic development techniques
- Knowledge and understanding of friction skin development, anatomy, physiology, and morphology
- Knowledge and understanding of friction ridge terminology
- Knowledge and understanding of photography and other preservation techniques of areas of friction ridge detail
- Knowledge, understanding and ability in proper documentation and reporting of latent print evidence
- Knowledge, skills, and abilities to properly testify to scientific findings in courts of law

Test Content – initial certification (proctored test; 8 hours to complete)

Part 1: Written Test (200 or less multiple-choice questions; 85% score or higher to pass)

Part 2: Comparison Test (15 latent prints compared to 6 sets of exemplars; correct conclusions for a minimum 12 of 15 latent prints with no incorrect conclusions to pass). Should more than the 12 required comparisons be completed, any erroneous conclusion will result in failure. Use of AFIS computers and scanning into comparison programs is prohibited.



*Part 2 may be taken electronically on a minicomputer provided by the Latent Print Certification Board that has Adobe Photoshop Elements pre-loaded onto it by special request.

Test Content – recertification (unproctored; 30 days to complete)

Comparison Test (10 latent prints compared to 4 sets of exemplars; correct conclusions for all 10 latent prints with no incorrect conclusions to pass). Use of AFIS computers is prohibited. Scanning images into a comparison program is permitted.

References (reading material)

- *The Fingerprint Sourcebook* (U.S. Dept of Justice, National Institute of Justice) by I.A.I, Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) et al Eric H. Holder, Laurie O. Robinson, John H. Laub, 2011
- *Quantitative-Qualitative Friction Ridge Analysis: An Introduction to Basic and Advanced Ridgeology* by David R. Ashbaugh, 1999
- *Searching Smart Clues for Latent Print Examiners Playing Cards* by Ron Smith & Associates, Inc., 2016
- *Palm Prints Searching Smart* by Ron Smith & Associates, Inc., 2021
Note: A new test will be implemented for all applications submitted as of 9/2022. Test questions will include information from this new reference.
- *Fingerprints and Other Ridge Skin Impressions, Second Edition* (CRC Press) by Christophe Champod, Chris J. Lennard, Pierre Margot, Milutin Stoilovic, 2016
Note: A new test will be implemented for all applications submitted as of 9/2022. Test questions will include information from this new reference.

8.8 TENPRINT CERTIFICATION

Scope of Certification

The Certified Tenprint Examiner is trained and experienced in the discipline and has specialized knowledge performing intentionally recorded comparisons and performing AFIS searches. Certified examiners are able to explain underlying principles, foundations and significant discipline related events of the science.

Tasks Related to Scope

- Pattern interpretation
- Compare friction ridge impressions of known to unknown subjects and arrive at generally accepted conclusions
- Communicate discipline specific information regarding the history, underlying principles and foundations of Tenprint comparisons

Competencies Required for Tasks

- Ability to perform comparisons and arrive at identifications and exclusions
Identification: Identification is reached when the friction ridge impressions have sufficient corresponding ridge detail such that consensus judgement would not expect to see the same arrangement of details repeated in an impression that came from a different source



Exclusion: Exclusion is reached when the friction ridge impressions have sufficient disagreement to conclude an impression originated from a different source

- Knowledge of and ability to explain underlying principles (uniqueness and permanence)
- Knowledge of and ability to apply methodology
- Knowledge of performing AFIS searches
- Knowledge of anatomy of the skin
- Knowledge of embryonic development of friction ridge skin
- Knowledge of historical founders of the discipline and the underlying foundations
- Knowledge regarding significant court cases
- Knowledge of significant error rate studies
- Knowledge of twin studies
- Knowledge of NAS Report (friction ridge portions)
- Knowledge of OSAC views on the status of the forensic sciences
- Knowledge of correctly communicating scientific concepts and discipline specific concepts (testimony)
- Knowledge of Henry Classification
- Ability to correctly identify tracings and ridge counts (i.e., pattern recognition and interpretation)

Test Content – initial certification (proctored test; 5 hours to complete)

Part 1: Single comparisons (16/20 identifications or exclusions with no incorrect conclusions to pass). Should more than the 16 required comparisons be completed, any erroneous conclusion will result in failure.

Part 2: General knowledge (multiple choice and T/F) (80/100 to pass)

Part 3: Pattern recognition and interpretation to include tracings and ridge counts (90/100 to pass)

Test Content – recertification (unproctored; 30 days to complete)

Single comparisons (16/20 identifications or exclusions with no incorrect conclusions to pass). Should more than the 16 required comparisons be completed, any erroneous conclusion will result in failure.

References (reading material)

- *The Science of Fingerprints*, U.S. Justice Department (chapters 1-4, 8-10)
- *Quantitative - Qualitative Friction Ridge Analysis*, David R. Ashbaugh (chapters 1-4)
- *The Fingerprint Sourcebook US Department of Justice* (Chapters 1, 4-6, 9 and 13)
- *Measuring What Latent Fingerprint Examiners Consider Sufficient Information for Individualization Determinations* (2014). Bradford T. Ulery, R. Austin Hicklin, Maria Antonia Roberts, JoAnn Buscaglia. PLoS ONE 9(11): e110179.
doi:10.1371/journal.pone.0110179
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0110179> or
<https://theiai.org/docs/WhiteBoxStudy.pdf>
- *Accuracy and reliability of forensic latent fingerprint decisions* (2011). Bradford T. Ulery, R. Austin Hicklin, JoAnn Buscaglia, Maria Antonia Roberts.
www.pnas.org/cgi/doi/10.1073/pnas.1018707108



- *Discriminability of Fingerprints of Twins*. Sargur N. Srihari, Harish Srinivasan, Gang Fang. *Journal of Forensic Identification* 58 (1), 2008 \ 109
- *Strengthening Forensic Science in the United States: A Path Forward*. <http://www.nap.edu/catalog/12589.html> (section 4 and section 5, xix 136, pages 158-166)
- OSAC, NIST. <https://www.nist.gov/osac>



8.9 Prerequisites and Requirements for Certification/Recertification (Documentation required to be added to eCert)

	BPA	CSI	CSA	SCSA	Footwear	Forensic Art	FP&I	FVA	Latent	Tenprint
Experience and Education (See section 7.1.4.2) 60 higher education semester credits or 90 higher education quarter credits may substitute for AA/AS	3 yrs of experience w/ AA/AS or 4 yrs of experience	1 yr of Experience responding to Crime scenes and having a significant role in locating, documenting, recovering and analyzing physical evidence	3 yrs of	6 yrs of	2 yrs of experience w/ BA/BS or 3 yrs w/ AA/AS or 4 yrs	2 yrs of exper. (with a minimum of 10 cases worked and 3 successful identifications in casework)	2 yrs of experience	1 yr of experience	2 yrs of experience w/ BA/BS or 3 yrs w/ AA/AS or 4 yrs	2 yrs of experience
Training (foundational knowledge) (See section 7.1.4.3) (board approved structured internal programs and/or courses (w/i last 5 yrs for Latent, CS and Photography) -Assessor training, conference presentations, book reviews, certification prep classes, and training for other forensic disciplines does not apply except as indicated	240 hrs - 100 of which is specific to BPA	48 hrs Pre-approved on-line classes are accepted for renewal purposes only	96 hrs Pre-approved on-line classes are accepted for renewal purposes only	144 hrs - Completed 16 hours of Courtroom Testimony training in addition to the required training hrs Testimony classes may be online for initial certification. Pre-approved on-line classes are accepted for renewal purposes only	Internal Training program which includes items below	120 hrs training program 40 of which shall be workshops, lectures, classes	80 hrs – 40 specific to Forensic Photography Non-Forensic training does not have to be w/i the past 5 yrs	120 hrs - 96 of which shall be specifically focused on forensic video	176 hrs - 16 of which shall be qualified testimony training Max. of 80 conference hrs shall be accepted	80 hrs – 16 of which shall be agency qualified testimony training
Additional				<u>One of the following:</u> Published a discipline specific article Presented a discipline specific topic at a forensic conference Instructed a discipline specific course	Training programs shall minimally include, terminology, manufacturing process, photography, enhancement, recovery and preservation of footwear evidence, comparative examinations, case note preparation, report writing, legal considerations and courtroom testimony	The letter of endorsement shall include that a minimum of 10 cases have been completed.			Letter from supervisor stating the applicant has completed a moot court and is deemed competent to represent the agency in legal proceedings (add with training documents in eCert)	
Two (2) Letters of Endorsement (See section 7.1.4.4)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Two Additional References (See section 7.1.4.4)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Signed Agreement (See section 7.1.4.5)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Examination for Certification (See sections 7.2 and 7.3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recertification Credits Req. w/i last 5 yrs (See section 7.6)	80	80	80	80	80	80	80	80	80	80
Examination for Recertification	Yes	Yes	Yes	Yes	Yes	See Section 8.4	Yes	No	Yes	Yes



DOCUMENT REVISION HISTORY

Date	Change	Page/Step	Changed By	Released Version
03/05/2021	Changes listed in previous version	Complete Update	FCMB – M. Triplett	FCMB01-2020-B
03/5/2021	Changes listed in previous version		FCMB – M. Triplett	FCMB01-2020-B1
4/2/2021	Changes listed in previous version		FCMB – M. Triplett	FCMB01-2020-B2
5/18/2021	Changes listed in previous version	Per LPCB	FCMB – M. Triplett	FCMB01-2020-B3
9/01/2021	<ul style="list-style-type: none"> • 2.1, p. 6, Extended appeals to include decisions of the Director and/or a PRB. • 3.1.4, p. 8, Clarified Chairs responsibilities. • 3.1.5, p. 10, Removed secretaries may send reminders. • 3.1.7, p 11, Added proctors should not be primary trainer; Removed proctor does not participate in grading; repetitive. • 3.2.3.1-3.2.4, p12, Modified CB applicant information. • 3.5.2.6, p.14, Clarified reimbursement when meals are provided. • 5.4, p. 19, Changed the review period for job task analysis from annually to as needed. • 5.5.3, p. 20, Removed seeking input from stakeholders as CB’s are stakeholders. • 5.6, p. 20 Clarify proposals for new certification boards. • 7.1.4.4, p. 22, Clarified references are required for eCert • 7.1.8, p. 24, Clarified the timeline for testing procedures. • 7.1.5, p. 23, Clarified translation shall be verbal only. • 7.1.8, p. 23-24, Clarified testing and grading deadlines. 		FCMB – M. Triplett	FCMB01-2020-C



	<ul style="list-style-type: none"> • 7.2, p. 25, Moved timeline for testing to section 7.1.8. • 7.4.7, p. 26, Added wallet card to be provided. • 7.4.10, p.27 Added discretion in wait period for retesting of ‘up to’ one year. • 7.6.1, p. 29, Added partial years of employment need special request to adjust credits. • 7.6.4, p. 29, Clarified webinars with coursework. • 7.7.2 h p. 30, Added certificants shall participate in investigations on their own certification. • 7.7 and 7.10, p. 32-36, changed ‘disciplinary action’ to ‘remedial action’ and clarified the complaint process. • 7.7.4, p.32, Clarified violation of ethics procedures, moved to section 7.10, under complaints. • 7.10, p. 34, Clarified and simplified the complaint and investigation of complaint process; Lowered 90-day PRB to 30 days with possibility of an extension for just cause; Added the FCMB reserves the right to temporarily suspend certifications due to reasonable probable grounds. • 8.2, p. 38, Updated CSCB tasks and competencies. • 8.3, p. 42, Added new test as of 6/2022 under testing content; Added additional reference (reading material) and date for implementation. • 8.7, p. 49, added competency for proper reporting; increased multiple choice questions to 200 or less; Clarified that all comparison answers need to be correct; Scanning images is permitted for recertification exam. • 8.8, p. 51, Clarified that all comparison answers need to be correct. • 8.9, p. 52, CS: Added applicants must have experience in CS related tasks; TP: Removed educational requirement and removed requirement to submit a 			
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	tenprint card; LP: Clarified letter requirement for ability to testify.			
9/29/2021	<ul style="list-style-type: none"> • 3.2.6.1, p. 13, clarified poor job performance may include not following the FCMB Operations Manual. • 7.1.7, p. 24, fixed formatting to add section 7.1.8 • 7.1.8.2, p. 24, added testing may need to be taken at the IAI annual conference if a proctor cannot be established. • 7.5.1.1, p. 27, changed training course approval forms to be sent to the Director. • 8.7 p. 49-50, removed one reference material. • Revision History, p. 53-54, fixed typographical errors. 		FCMB – M. Triplett	FCMB01-2020-C1
11/01/2021	<ul style="list-style-type: none"> • 2.6, 2.17, 2.18 p. 6-7, clarified definitions of certification board, revocation and suspension. • 3.1.1, p. 7, moved some responsibilities of the FCMB management to be responsibilities of the chair (to 3.1.4). • 3.1.4.7, p. 9, clarified documents required to retain. • 3.1.6, p. 10, changed qualifications of board members to shall statements. • 3.1.6.3 and 3.1.6.14, p. 10-11, added criteria for CB members to minimize threats to impartiality. • 3.1.7, p. 11 clarified proctors’ responsibilities. • 4.6.6, p. 18, clarified email templates are not controlled documents. • 5.4, p. 19, specified who determines job tasks. • 7.1.5, p. 23, added criteria for translators. • 7.4.3, p. 26, removed certification board members cannot proctor. • 7.7.2-d, p.30, clarified technical errors are regarding the discipline for which a person is certified. • 7.7.2.2, p. 31, clarified that self-reporting may not affect certification. 		FCMB – M. Triplett	FCMB01-2020-C2



	<ul style="list-style-type: none"> 8.3, p. 40, added testimony to FW scope. 8.5, p. 46, clarified competencies required and modified test content for initial FP&I certification. 8.7 p. 49, added definitions of Identification and Exclusion regarding LP competencies; added new reference materials for applications as of 9/2022. 8.8 p. 51, clarified scope for TP Certification, fixed link for reference. 	<p>Per FWCB Per FP&ICB</p> <p>Per LPCB</p> <p>Per TPCB</p>		
11/22/2021	<ul style="list-style-type: none"> 8.2, p. 39, added Knowledge of medicolegal death investigation to CS competency list. 8.5, p. 46, added Ability to process with black powder to FP&I competency list. 8.6, p. 47-49, updated scope, tasks, competencies, initial certification test and references. 8.9, p. 54, reduced Educational and Experience requirements for FVA. 	<p>Per CSCB</p> <p>Per FP&ICB</p> <p>Per FVCB</p>	FCMB – M. Triplett	FCMB01-2020-C3
1/20/2022	<ul style="list-style-type: none"> 8.9, p.54, added 80 hours of recertification credits for FA (inadvertently removed in previous version). 	Per FACB	FCMB – M. Triplett	FCMB01-2020-C4
3/30/2022	<ul style="list-style-type: none"> 3.2.2.1, p. 12, allow for the Director to appoint CB members. 4.6.3, p. 18, clarify Controlled Document identifiers. 7.4.7, p. 26, removed reference to wallet card. To be optional for each CB and no longer considered a controlled document. 7.9.6, p. 33, changed that FCMB appeals can include IAI members to allow for more subject matter expertise. 8.2, p. 39-40, new reference material for CCSI and recertification exam to begin 10/1/2022. 	Per CSCB	FCMB – M. Triplett	FCMB01-2020-C5
5/20/2022	<ul style="list-style-type: none"> 2.18, p. 7, defined stakeholders 3.2.1, p. 12, clarify CB membership requirement for expiring certification and Advisory positions 3.2.1, p. 12, clarified requirement for CSCB members 3.2.4, p. 12, clarified certification board membership 	<p>Per FCMB Per FCMB</p> <p>Per CS Chair Per Director</p>	FCMB – M. Triplett	FCMB01-2020-C6



	<p>begins after all documents are submitted, within 2 wks.</p> <ul style="list-style-type: none"> • 4.5.4, p. 17, clarified where examination tracking shall be kept. • 5.6.5, p. 21, added Advisory positions to be more inclusive of stakeholders. • 7.6.7, p. 30, clarified that credits for instructing shall be approved by the appropriate CB. • 8.4, p. 43-46, update scheme and testing. • 8.9, p. 55, added manual reference number. • 8.9, p. 55, clarified experience in responding to CS's. • 8.9, p.55, clarified online training for CS. 	<p>Per Director</p> <p>Per FCMB</p> <p>From ver. A</p> <p>Per FACB Recommendation</p> <p>Per CSCB</p> <p>Per CSCB</p>		
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