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Scope of Expertise in Forensic Document Examination

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Foreword

The history of this publication dates to the work of Alwyn Cole, Examiner of Questioned Documents at the Office of the Treasurer of the United States, which led to the 1969 adoption by the American Society of Questioned Document Examiners (ASQDE) of the *Definition and Scope of Work of the Examiner of Questioned Documents, Document Examiner, or Document Analyst*. Standards have since been derived from that document, with updates over the years, which became the text of the 2013 Scientific Working Group for Forensic Document Examiners (SWGDOC) edition that was the basis for extensive peer review in 2015 and 2016 by the Forensic Document Examination subcommittee of the Organization for Scientific Area Committees (OSAC), resulting in a draft document that was submitted to the ASB - a Standards Developing Organization, which produced this standard using a consensus process.

Forensic document examination is a forensic discipline that addresses a complex and ever expanding range of issues concerning documents. In addition to the examination of handwriting and the varied materials that are considered to be documents, the methods used to generate documents continue to expand with technological advancements. Substantial knowledge, skills, and abilities are required to effectively apply the appropriate scientific and technical methodologies, and to properly evaluate the findings in order to render appropriate conclusions. Furthermore, this discipline requires a broad knowledge of document materials as well as production and generation methods; critical reasoning abilities; and written and verbal communication skills.

This standard provides guidance not only for forensic document examiners but also for others encountering issues that potentially involve forensic document examination (e.g., law enforcement and other government agencies, attorneys, the judiciary, or private companies and individuals).

The American Academy of Forensic Sciences established the Academy Standards Board (ASB) in 2015 with a vision of safeguarding Justice, Integrity and Fairness through Consensus Based American National Standards. To that end, the ASB develops consensus based forensic standards within a framework accredited by the American National Standards Institute (ANSI), and provides training to support those standards. ASB values integrity, scientific rigor, openness, due process, collaboration, excellence, diversity and inclusion. ASB is dedicated to developing and making freely accessible the highest quality documentary forensic science consensus Standards, Guidelines, Best Practices, and Technical Reports in a wide range of forensic science disciplines as a service to forensic practitioners and the legal system.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, asb@aafs.org or 401 N 21st Street, Colorado Springs, CO 80904.

All hyperlinks and web addresses shown in this document are current as of the publication date of this standard.

ASB procedures are publicly available, free of cost, at www.aafs.org/academy-standards-board.

Keywords: *forensic document examination, forensic document examiner*

Table of Contents

Scope of Expertise in Forensic Document Examination

1 Scope

This standard describes the responsibilities of and general qualifications for forensic science practitioners engaged in the practice of forensic document examination.

This document provides guidance to anyone encountering matters involving forensic document examination.

2 Normative References

The following references are documents that are indispensable for the application of the standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

SWGDOC *Terminology Relating to the Examination of Questioned Documents*, 2013[1]

SWGDOC *Standard for Minimum Training Requirements for Forensic Document Examiners*, 2013[1]

National Commission on Forensic Science. *National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers*. Recommendation to the Attorney General, March 22, 2016.[2]

United States Department of Justice. *Department of Justice Code of Professional Responsibility for the Practice of Forensic Science*. Office of the Attorney General, September 6, 2016.[3]

3 Terms and Definitions

Terms and definitions for this standard shall be the same as the terms defined in SWGDOC *Terminology Relating to the Examination of Questioned Documents*, 2013. [4]

3.1
Forensic Science Practitioner
An individual who (1) applies scientific or technical practices to the recognition, collection, analysis, or interpretation of evidence at issue in criminal, civil, or administrative investigations and proceedings, and (2) issues test results, provides reports, or provides interpretations, conclusions, or opinions through testimony with respect to such evidence[5].

[1] SWGDOC documents are available at http://swgdoc.org/index.php/standards/published-standards.
[2] Available at https://www.justice.gov/ncfs/file/839711/download.
[3] Available at https://www.justice.gov/sites/default/files/code_of_professional_responsibility_for-the_practice_of_forensic_science_08242016.pdf
[4] SWGDOC documents are available at http://swgdoc.org/index.php/standards/published-standards.
[5] National Commission on Forensic Science. *Defining Forensic Science and Related Terms*, May 1, 2015. Available at https://www.justice.gov/ncfs/file/786571/download.

4 Requirements

4.1 Background

Forensic document examiners typically deal with inquiries that arise in matters where the authenticity, genuineness, or source of documents is questioned. The results of examinations conducted to answer such questions are reported for use by law enforcement agencies, the judiciary, administrative and executive officers, intelligence organizations, boards, tribunals, commissions, attorneys, and individuals. These results generally include a full explanation of the bases for the findings, opinions, or conclusions, and can be presented in the form of expert testimony. They are often illustrated through the use of demonstrative charts or images that serve to illustrate and clarify the basis of the opinion.

Forensic document examination does not involve the study of handwriting for personality assessment, creation of a personality profile, or analysis, or judgment of a writer's personality or character.

4.2 Responsibilities of a Forensic Document Examiner

4.2.1 General

The forensic document examiner is required to have discipline specific knowledge, skills, and abilities to conduct examinations of documents to provide information, make observations, evaluate the findings, reach opinions, and render appropriate conclusions regarding documents, including, at a minimum:

— source(s) of writing;

— source(s) of machine-produced documents;

— source(s) of typewriting, impressions, and marks;

— associations of materials and devices used to produce documents;

— genuineness and authenticity of documents;

— detection and decipherment of alterations, obliterations, and indentations, and;

— preservation and restoration of legibility to damaged or illegible documents.

4.2.2 Tasks Performed by Forensic Document Examiners

For examinations such as those in 4.2.1, the forensic document examiner can perform various tasks, including:

— the examination and comparison of writing, which includes both joined cursive and printed style writing, numerals and signs, as well as signatures, including electronically-captured writing and signatures;

— the examination, visualization, decipherment, and preservation of indentations on documents;

— the examination, comparison and classification of documents produced by typewriters, facsimile machines, photocopiers, computer printers, commercial printing and other mechanical or electronic imaging devices, and also the examination of the devices themselves as appropriate;

— the decipherment of machine ribbons and other intermediary media and their comparison to print outs and other output;

— the examination and comparison of ink, paper, and writing instruments;

— the collection and preservation of charred or liquid-soaked documents;

— the collection, restoration and preservation of torn, perforated, and/or cut (including shredded) documents;

— the decipherment or restoration of altered, obliterated, or erased areas of documents;

— the comparison of elements of a document (e.g., typewriting, printing, paper, watermarks, ink) with an appropriate standard reference collection to determine age, production history, or authenticity; and

— the preparation of reports and associated illustrative material.

4.2.3 Extent of Examinations

A complete forensic examination of documents shall involve the assessment of all of the elements of a document to ensure accurate findings, proper reasoning, and reliable conclusions.

Many analytical requests involving documents, such as the sequence of preparation, dating of documents, and counterfeit recognition, can require more than one type of document examination.

4.3 Equipment

4.3.1 General

Competency in forensic document examination includes the requisite knowledge, skills, and abilities in the use of, and access to, the equipment, tools, instrumentation, and reference materials used for examination.

The forensic document examiner shall ensure that all equipment and apparatus is used with appropriate software, and is maintained, calibrated, and documented. The forensic document examiner shall understand the capabilities and limitations of the equipment and apparatus as well as the relevant techniques.

4.3.2 Standard Equipment

The following equipment, tools, instrumentation, and reference materials are required for forensic document examinations, and shall be available at all times.

— Light source(s) of sufficient intensity and appropriate type to allow fine detail to be distinguished. Light sources should include those appropriate for transmitted lighting, side

lighting, and vertical incident lighting which have been found useful in a variety of situations. Natural, incandescent, fluorescent light, LED sources, and/or fiber optic lighting systems are generally utilized.

— Magnification sufficient to allow fine detail to be distinguished. In addition to low power hand lenses, a stereomicroscope, or digital microscope, with a range of magnification has been found useful in a variety of situations.

— Photographic or other imaging equipment for recording observations, including: image capture device(s) capable of sufficient resolution to reliably record the desired detail; image output device(s) (for display or hardcopy production) capable of sufficient resolution and color balance for the intended purpose(s), and; media and appropriate systems for intermediate storage and archiving of images.

— Appropriate ruler(s), grid(s), and other measurement device(s) in SI (metric) or IP (inch-pound) units, or both.

— Long and short wave UV sources in the form of UV lamps or view box, with both long-wave UV and short-wave UV lamps.

— Colored filters (gelatin, colored glass, interference filters, dichroic filters) as needed for visual and photographic differentiation of inks.

— Infrared (IR) image conversion device or system with appropriate light sources and filters for use in reflected infrared (RIR) and infrared luminescent (IRL) examinations.

— Electrostatic detection device (EDD) for the detection, or visualization, or both, of indentations and other features present in or on paper or similar substrata.

4.3.3 Special Equipment

Certain equipment, tools, instrumentation, and reference materials are required for less frequently encountered problems or advanced examinations. Where standard procedures exist for such examinations, the required equipment is generally specified (e.g., Annex C lists the standards developed by SWGDOC for a wide variety of case types).

Other analytical instrumentation may be used where appropriate.

4.4 Competence

4.4.1 General

Competence as a forensic document examiner is based upon a combination of the requisite knowledge, skills, and abilities acquired through appropriate education, training, and experience specific to forensic document examination.

The study or practice of personality profiling or character assessment based on handwriting is not a foundation or a supplement, in whole or in part, for competence in the practice of forensic document examination.

4.4.2 Requisite Knowledge, Skills, and Abilities

Because of the diverse nature of forensic document examination, it is critical that the examiner has a broad knowledge base, including the manufacturing processes of materials used in the production and preservation of documents, as well as the skills and abilities to analyze, compare, and evaluate case-related items.

4.4.3 Initial Training

Forensic document examination involves skills that are learned in a practical way through a structured, documented, and systematic apprenticeship program of workplace supervised learning of at least 4,000 hours (within four years). The program includes both theoretical and practical instruction with the progressive attainment of manual, mechanical, or technical skills, abilities, and knowledge.

Short overview courses, literature reviews, or distance learning, in and of themselves, do not adequately train or prepare an individual for competence in the practice of forensic document examination. Other kinds of experience and training do not constitute expertise or training in whole or in part in forensic document examination outside of a full training program (e.g., calligraphy, penmanship, personality profiling or character assessment based on handwriting, fraud investigation, law enforcement, loss prevention, banking, general criminalistics or other forensic disciplines, legal training, or laboratory management).

The examiner's training is required to conform to the requirements of SWGDOC *Standard for Minimum Training Requirements for Forensic Document Examiners*, 2013.

4.4.4 Continuing Professional Development

Continuing professional development is the mechanism through which a forensic document examiner remains current or advances to a higher level of expertise, specialization, or responsibility. It is important that continuing professional development be structured, measurable, and documented.

A forensic document examiner has an ongoing obligation to remain current in the discipline through continuing education, which encompasses competency maintenance, skill enhancement, and other learning activities that will maintain and broaden the knowledge, skills, and abilities relevant to the discipline; it is the mechanism through which a forensic document examiner increases or updates knowledge, skills, or abilities, reinforces knowledge, or learns of the latest research, developments, or technology related to the profession.

4.5 Other Responsibilities as a Forensic Service Provider

Like all forensic service providers, the forensic document examiner is required to conform to a code of professional responsibility (see, e.g., Annex A and Annex B) and to perform other general responsibilities common to all forensic service providers or to document the reason(s) for not performing the action (e.g., maintaining chain of custody for all items submitted and facilitating technical reviews).

5 Conformance Requirements

5.1 Conformance

Conformance to this standard will be achieved if an implementation and its associated data records conform to normative ("shall" or "required") Sections 4.3 through 4.4. Documentation to verify conformance with the above requirements is required to be maintained by each laboratory and individual forensic document examiner and shall be made available to auditors upon judicially or administratively authorized request.

5.1.1 Conformance to *Equipment*

Conformance to 4.3 *Equipment* requires that the forensic document examiner ensures that all equipment and apparatus is properly maintained and calibrated (4.3.1) and maintains the documentation. The forensic document examiner also is required to demonstrate that the *Standard Equipment* (4.3.2) is always accessible and useable and that the *Special Equipment* (4.3.3) is accessible and useable upon demand for any examinations that the laboratory or individual forensic document examiner might agree to undertake.

5.1.2 Conformance to *Competence*

Conformance to 4.1 Competence, requires the laboratory or individual FDE to maintain and supply evidence of technical competence (e.g., by maintaining records of completion of training to competence in areas specific to forensic document examination, including initial training, continuing education, and training on specific equipment; participating in inter-laboratory comparison; participating in individual proficiency testing; or by demonstrating laboratory accreditation in accordance with ISO/IEC 17025:2017 or individual certification issued in accordance with ISO/IEC 17024:2012 and ISO/IEC 17011:2017).

Annex A
(normative)

The National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers [6]

The National Code of Professional Responsibility ("Code") defines a framework for promoting integrity and respect for the scientific process among forensic science and forensic medicine service providers, both practitioners and agencies, including its managers, must meet requirements 1 through 15 enumerated below. Requirement 16 specifically refers to the responsibility of forensic science and forensic medicine management rather than individual practitioners.

1. Accurately represent relevant education, training, experience, and areas of expertise.

2. Be honest and truthful in all professional affairs including not representing the work of others as one's own.

3. Foster and pursue professional competency through such activities as training, proficiency testing, certification, and presentation and publication of research findings.

4. Commit to continuous learning in relevant forensic disciplines and stay abreast of new findings, equipment, and techniques.

5. Utilize scientifically validated methods and new technologies, while guarding against the use of unproven methods in casework and the misapplication of generally-accepted standards.

6. Handle evidentiary materials to prevent tampering, adulteration, loss, or nonessential consumption of evidentiary materials.

7. Participation in any case in which there is a conflict of interest shall be avoided.

8. Conduct independent, impartial, and objective examinations that are fair, unbiased, and fit-for-purpose.

9. Make and retain contemporaneous, clear, complete, and accurate records of all examinations, tests, measurements, and conclusions, in sufficient detail to allow meaningful review and assessment by an independent professional proficient in the discipline.

10. Ensure interpretations, opinions, and conclusions are supported by sufficient data and minimize influences and biases for or against any party.

11. Render interpretations, opinions, or conclusions only when within the practitioner's proficiency or expertise.

[6] National Commission on Forensic Science. *Recommendation to the Attorney General National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers*. March 22, 2016, Available at https://www.justice.gov/ncfs/file/839711/download.

12. Prepare reports and testify using clear and straightforward terminology, clearly distinguishing data from interpretations, opinions, and conclusions and disclosing known limitations that are necessary to understand the significance of the findings.

13. Reports and other records shall not be altered and information shall not be withheld for strategic or tactical advantage.

14. Document and, if appropriate, inform management or quality assurance personnel of nonconformities* and breaches of law or professional standards.

15. Once a report is issued and the adjudicative process has commenced, communicate fully when requested with the parties through their investigators, attorneys, and experts, except when instructed that a legal privilege, protective order or law prevents disclosure.

16. Appropriately inform affected recipients (either directly or through proper management channels) of all nonconformities or breaches of law or professional standards that adversely affect a previously issued report or testimony and make reasonable efforts to inform all relevant stakeholders, including affected professional and legal parties, victim(s) and defendant(s).

* Nonconformities are any aspect of laboratory work that does not conform to its established procedures. An evaluation of the nonconformity risk is appropriate to deciding whether or not reporting is necessary.

Annex B
(normative)

Department of Justice Code of Professional Responsibility for the Practice of Forensic Science [7]

The following Code of Professional Responsibility for the Practice of Forensic Science (Code) defines a framework for promoting integrity and respect for the scientific process.[8] Forensic science providers, both practitioners and agencies, including its managers, must meet requirements 1-15 enumerated below. Requirement 16 specifically refers to the responsibility of forensic science management rather than individual practitioners.

1. Accurately represent relevant education, training, experience, and areas of expertise.

2. Be honest and truthful in all professional affairs including not representing the work of others as one's own.

3. Foster and pursue professional competency through such activities as training, proficiency testing, certification, and presentation and publication of research findings.

4. Commit to continuous learning in relevant forensic disciplines and stay abreast of new findings, equipment, and techniques.

5. Conduct research and forensic casework using the scientific method or agency best practices. Where validation tools are not known to exist or cannot be obtained, conduct internal or inter-laboratory validation tests in accordance with the quality management system in place.

6. Handle evidentiary materials to prevent tampering, adulteration, loss, or nonessential consumption of evidentiary materials.

7. Avoid participation in any case in which there is a conflict of interest.

8. Conduct examinations that are fair, unbiased, and fit-for-purpose.

9. Make and retain contemporaneous, clear, complete, and accurate records of all examinations, tests, measurements, and conclusions, in sufficient detail to allow meaningful review and assessment by an independent professional proficient in the discipline.

10. Ensure interpretations, opinions, and conclusions are supported by sufficient data and minimize influences and biases for or against any party.

11. Render interpretations, opinions, or conclusions only when within the practitioner's proficiency or expertise.

[7] https://www.justice.gov/sites/default/files/code_of_professional_responsibility_for-the_practice_of_forensic_science_08242016.pdf

[8] These provisions are not intended to, and do not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

12. Prepare reports and testify using clear and straightforward terminology, clearly distinguishing data from interpretations, opinions, and conclusions. Reports should disclose known limitations that are necessary to understand the significance of the findings.

13. Do not alter reports and other records or withhold information for strategic or tactical advantage.

14. Document and, if appropriate, inform management or quality assurance personnel of nonconformities[9] and breaches of law or professional standards.

15. Honestly communicate with all parties (the investigator, prosecutor, defense, and other expert witnesses) about all information relating to their analyses, when communications are permitted by law and agency practice.[10]

16. Inform the prosecutors involved through proper laboratory management channels of material nonconformities or breaches of law or professional standards that adversely affect a previously issued report or testimony.[11]

[9] Nonconformities are any aspect of laboratory work that does not conform to its established procedures. An evaluation of the nonconformity risk is appropriate to deciding whether or not reporting is necessary.
[10] Agency practice may vary depending on the status of the case or due to safety concerns.
[11] Prosecutors have independent reporting requirements based on codes of professional responsibility and ethics.

Annex C
(informative)

Bibliography

This is not meant to be an all-inclusive list as the group recognizes other publications on this subject may exist. At the time this standard was drafted, these were the publications available for reference. Additionally, any mention of a particular software tool or vendor as part of this bibliography is purely incidental, and any inclusion does not imply endorsement.

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7] Huber, Roy A. and A.M. Headrick. *Handwriting Identification: Facts and Fundamentals*. CRC Press LLC, 1999.

8] Kelly, Jan Seaman and Brian L. Lindblom, Eds. *Scientific Examination of Questioned Documents.* CRC Press, 2nd Ed. 2006.

9] Osborn, Albert S. *Questioned Documents.* Introduction by John H. Wigmore. Boyd Printing Co. Albany. NY, 2nd Ed. 1929.

10] Osborn, Albert S. and Albert D. Osborn. *Questioned Document Problems,* introduction by Roscoe Pound. Boyd Printing Co. Albany, NY, 2nd Ed. 1946.

11] Osborn, Albert S. *The Problem of Proof*. Introduction by John H. Wigmore. Essex Press. Newark, NJ, 2nd Ed. 1926.

SWGDOC documents can be downloaded from:

https://www.nist.gov/topics/forensic-science/forensic-document-examination-subcommittee

http://www.swgdoc.org/index.php/standards/published-standards

SWGDOC *Standard for Scope of Work of Forensic Document Examiners*, 2013

SWGDOC *Standard for Test Methods for Forensic Writing Ink Comparison*, 2013

SWGDOC *Standard Terminology for Expressing Conclusions of Forensic Document Examiners*, 2013

SWGDOC *Standard for Writing Ink Identification*, 2013

SWGDOC *Terminology Relating to the Examination of Questioned Documents*, 2013

SWGDOC *Standard for Examination of Mechanical Checkwriter Impressions*, 2013

SWGDOC *Standard for Examination of Dry Seal Impressions*, 2013

SWGDOC *Standard for Examination of Fracture Patterns and Paper Fiber Impressions on Single-Strike Film Ribbons and Typed Text*, 2013

SWGDOC *Standard for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations*, 2013

SWGDOC *Standard for Examination of Rubber Stamp Impressions*, 2013

SWGDOC *Standard for Examination of Handwritten Items*, 2013

SWGDOC *Standard for Indentation Examinations*, 2013

SWGDOC *Standard for Non-destructive Examination of Paper*, 2013

SWGDOC *Standard for Examination of Altered Documents*, 2013

SWGDOC *Standard for Minimum Training Requirements for Forensic Document Examiners*, 2013

SWGDOC *Standard for Examination of Documents Produced with Liquid Ink Jet Technology*, 2013

SWGDOC *Standard for Examination of Documents Produced with Toner Technology*, 2013

SWGDOC *Standard for Examination of Typewritten Items*, 2013

SWGDOC *Standard for Preservation of Charred Documents*, 2013

SWGDOC *Standard for Preservation of Liquid Soaked Documents*, 2013

SWGDOC *Standard for Use of Image Capture and Storage Technology in Forensic Document Examination*, 2013

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