MINIMUM REQUIREMENTS FOR FORENSIC DOCUMENT EXAMINATION

A document for emerging laboratories

International Forensic Strategic Alliance

Version 1

IFSA

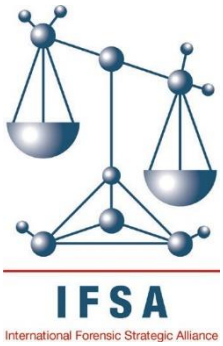
International Forensic Strategic Alliance

INTERNATIONAL FORENSIC STRATEGIC ALLIANCE

MINIMUM REQUIREMENTS FOR FORENSIC DOCUMENT EXAMINATION

A document for emerging laboratories

IFSA MRD 5



CONTENTS

INTRODUCTION

The International Forensic Strategic Alliance (IFSA) has developed this document to be minimum requirements which will enable emerging forensic providers in developing countries to produce scientific services to the Criminal Justice System.

The purpose of this document is to establish a baseline or starting point that must be followed in order to achieve reliable results. Forensic providers should build on this foundation and strive to continually improve the quality of services provided.

This document describes the minimum requirements for the forensic analysis of documents. It addresses the following framework:

1. Competence of Personnel.
2. Equipment and Consumables.
3. Collection, Analysis, Interpretation, Reporting.
4. Procedures, Protocols, Validation.
5. Quality Management.

FOREWORD

The International Forensic Strategic Alliance (IFSA) is a multilateral partnership between the six regional networks of operational forensic laboratories:

- the American Society of Crime Laboratory Directors (ASCLD)
- the European Network of Forensic Science Institutes (ENFSI)
- the National Institute of Forensic Science Australia New Zealand (NIFS ANZ)
- la Academia Iberoamericana de Criminalística y Estudios Forenses (AICEF)
- the Asian Forensic Sciences Network (AFSN)
- the Southern Africa Regional Forensic Science Network (SARFS).

IFSA works closely with its three strategic partners, Leverhulme Research Centre for Forensic Science, United Nations Office on Drugs and Crime (UNODC) and INTERPOL.

IFSA recognises the importance of a quality management framework in forensic laboratories to provide quality and standardised results, be it procedures undertaken in the field or in the laboratory.

In February 2012, at the special IFSA meeting hosted by UNODC and convened in Vienna to discuss the needs of the emerging forensic laboratories in developing countries, a decision was taken to create a set of minimum requirement documents (MRD) filling the gap in recommendations available for the current management of these laboratories.

The first series of three documents in the specific areas of identification of seized drugs, DNA analysis, and crime scene investigation have been developed and revised. These documents have focused on the critical quality areas, using simple terms and illustrations as well as a glossary to guide the users through the important concepts of the documents. Additional MRDs are in currently in development. For further information see the IFSA website: www.ifsa-forensics.org.

These MRDs are meant to act as a start-up guide for emerging forensic laboratories to quickly establish their quality management system and scientific/technical capabilities. Once achieved, the laboratories should continue to build on this foundation and strive to continually improve the quality of services through undergoing accreditations to established standards.

In the drafting of these documents, scientific working groups and experts from the six regional forensic science networks, as well as IFSA strategic partners, made valuable contributions during the various rounds of consultation. The final MRDs presented in this series would not be possible without the involvement of all.

It is IFSA's hope that these documents will play an important role for emerging forensic laboratories in their journey towards building quality forensic services.

IFSA Board

June 2023

1 COMPETENCE OF PERSONNEL

All laboratory staff must have a clear understanding of their duties and responsibilities and should fulfil these at all times according to a code of ethics (examples of Code of Ethics adopted by regional forensic science networks forming the IFSA partnership can be located on their website).

This section recommends minimum education and training required for laboratory staff to conduct forensic document examination [1]. Forensic examination of documents refers to the analysis of handwritten, printed or recorded information on a substrate (usually paper). Included in the forensic examination of documents is the examination of substrates and the examination of physical media (such as ink).

The forensic discipline of handwriting examination is not covered by this document.

1.1 EDUCATION

Laboratory staff should have education, skills and abilities commensurate with their responsibilities. Staff issuing reports should have technical education, training and knowledge especially in forensic science, chemistry and physics.

1.2 TRAINING

1.2.1 Pre-requisites

Staff performing forensic document examination must have intact color perception capabilities and a good visual acuity (or corrected visual acuity) allowing them to perceive subtle differences and similarities, as well as a strong attention to details.

1.2.2 Training Program

The laboratory should have a documented training plan for new staff or new tasks, documenting the required standards of performance, competency, and an assessment plan. The assessment can be carried out, for example through fulfilling the training plan or by the satisfactory analysis of test samples with ground truth known to the administrator but not known to the trainee. The training should be delivered by experienced staff competent in the process.

The field of document examination is very diverse as it covers:

- the physical and chemical analysis of security documents, non-security documents and of the respective inks, toners and substrates;
- the examination of printed or handwritten exhibits;
- the examination of authentication elements on documents, like dry seals and ink stamps, of data stored in electronic media like magnetic strips, machine readable zones or smart chips, of bio-data incorporated in modern ID documents; and
- the restoration and reconstruction of damaged or altered documents.

Due to the diversity of examination types included in forensic document examination, a multidisciplinary team with appropriate education, training, on-the-job learning and experience is recommended.

The training should comprise components such as:

- Relevant background information on evidence handling and storage requirements, fundamental principles of forensic science, like Locard's exchange principle;
- The concepts of class/manufacture characteristics and individualizing/acquired characteristics;
- Security documents and non-security documents;
- Genuine/counterfeit/forged documents; and
- Terminology used in document examination.

The training plan should include basic and intermediate knowledge of forensic document examination [2] reflective of current casework, such as:

- Types of substrates (paper, polymers), including physical/chemical characteristics and physical matches;
- Traditional and digital printing processes (including fundaments and identification);
- Assembly and finishing techniques;
- Personalization techniques, bio-data and electronic media;
- Security features introduced at the different stages of security document production;
- Reference collections;
- Computer printing processes/photocopiers (fundaments of impact and non-impact printing systems, font classification);
- Typewriters (typeface classification, class/manufacture characteristics and individualizing/acquired characteristics);
- Physical/chemical characteristics of printing inks and toners;
- Writing inks (types of inks, composition and resulting properties, influence of environmental factors on their characteristics);
- Non-destructive and destructive analysis of inks;
- Non-destructive paper comparison (including sampling protocols where applicable);
- Inked/dry stamps and respective stamp impressions;
- Types of alterations, erasures and obliterations on documents;
- Indented impressions;
- Damaged documents;

- Analytical methods of forensic document examination and their fundaments (e.g. individualization theory; color theory, interaction between light and matter; electrostatic detection);
- Instrumentation used for forensic document examination; and
- Presentation of evidence, both written and oral.

It is advisable that training include technical visits to security and non-security print works, and paper mills. Training should also provide information on the interaction between document examination and the analysis of other physical evidence that may be present on documents, such as fingerprints, biological materials (e.g. saliva, DNA), traces of drugs or shoe marks and how to proceed in such cases.

Upon successful completion of the training, the staff member may be authorized to perform casework. All training, assessments and authorization should be documented.

A program for continuing education is necessary to ensure staff stay up to date with scientific advancement and development in the analysis of documents. The program could include conference/seminar/course attendance, webinars, and review of scientific literature and other methods of self-learning.

All staff should participate in ongoing proficiency testing, and the results recorded.

2 EQUIPMENT AND CONSUMABLES

2.1 FACILITIES

The laboratory shall have appropriate utilities such as electricity, appropriate space to perform analysis and adequate room for installation of instrumentation such as an electrostatic detection device with appropriate ventilation, as well as access to a large examination room.

The document laboratory shall have access to large workstations to accommodate the examination of cases with a high number of documents.

Provision shall be made for secure storage of evidence including larger items (e.g. printers).

2.2 EQUIPMENT

All equipment used in casework for the forensic examination of documents must be suitable and in proper working condition. The equipment should be calibrated where applicable or undergo a performance check before use to ascertain reliable performance of test methods[3]. Performance of equipment should be monitored and recorded.

Maintenance and servicing should be done routinely to ensure equipment is fit for casework. Preventive maintenance and servicing records shall be kept by the laboratory.

Only trained and authorized staff shall operate the equipment. The manufacturer's operation manual and other relevant documentation, for example, standard operation procedures (SOP) for each piece of equipment should be readily available in the laboratory. Methods used on the equipment should be validated prior to application on casework. Equipment status should be clearly labeled if the condition of the equipment is not satisfactory or there are any circumstances that indicate it is not suitable for use.

Ideally, the laboratory should have the following scientific and specialized forensic equipment, or can access if required:

- Visible, IR and UV light sources;
- Transmission light box;
- Magnifier;
- Stereomicroscope(s) with adequate light sources from different angles and a large stage suitable for document examination;
- Scanner and computer;
- Digital cameras for photography and microphotography;
- Electrostatic detection device; and
- Measuring scales and grids;
- Thin layer chromatography (TLC) system (desiccator for plate storage, multipurpose spotting guide, developing tanks).

More advanced instrumentation and equipment that may be considered include:

- Multispectral imaging system;
- Microspectrophotometer (may be included in the multispectral imaging system above);

- Document reader and computer;
- Magnetic stripe and smart chip reader;
- Decoders;
- Analytical balance and micrometer for paper comparison;
- Software for paper and ink comparison.

.

Access to international databases [4-8] on security documents on an as-need basis may also be considered.

2.3 CONSUMABLES

All chemicals, reagents and solvents used in document analysis should be of appropriate grade and commensurate with the type of analysis performed and stored as per specifications.

The laboratory shall have written procedures for the preparation of chemical solutions.

It is good laboratory practice that chemicals should be labeled so that the contents are readily identifiable. The label should include date of opening, expiration date and initials.

The efficacy of all critical reagents used in casework shall be checked prior to use (initially after the solutions are made up and then either prior to each use or on a regular basis; or concurrently with casework). Checks may include testing with known reference materials from the laboratory collections (e.g. writing inks, inkjet inks).

3 COLLECTION, ANALYSIS, INTERPRETATION & REPORTING

3.1 COLLECTION

Collection of evidence at crime scenes is covered under the Crime Scene Investigation Minimum Requirements publication [9] and is applicable to a laboratory that also processes crime scenes and collects evidence. Nevertheless, collection of evidence at illegal print shops should be performed with the collaboration of document experts due to the variety of day-to-day materials that, besides the obvious materials and equipment found at such crime scenes, may also be used to imitate certain security features.

The laboratory shall have records of requests for analysis and the items of evidence submitted.

A unique identifier shall be assigned to each exhibit. Each exhibit shall be properly stored to maintain the integrity of the evidence and to ensure there are no changes to the exhibit prior to examination. For example, questioned documents shall not be stapled to the request sheets but preserved in adequate packaging; samples to be examined with the electrostatic detection device shall be protected between cardboard sheets to avoid introduction of further indentations; toner printed samples must not be stored in common transparent plastic covers to avoid adherence of the toner to the plastic – antistatic polymer covers should be used; special care must also be taken in the handling of documents that will be submitted for fingerprint detection or trace DNA.

Documents damaged by the action of fire shall be stored in rigid receptacles and adequately labeled as such, to avoid disturbance of the exhibits.

Documents damaged by the action of water should be adequately treated as soon as they arrive at the laboratory and only then stored before examination.

A system to document a chain of custody for the evidence shall be established in the laboratory. Only authorized staff shall have access to exhibits.

3.2 ANALYSIS

Analysis of exhibits shall be performed on a cleaned surface to prevent any contamination. Precautions shall be taken to ensure there are no other factors contributing to possible contamination, introduction of artifacts, loss, deterioration, or damage of evidence.

When documents are to be examined by different forensic disciplines, a multidisciplinary team should decide on the order of examination prior to the start of any forensic work.

The examination of documents aims to provide an answer to one or more of the following:

- Determine if security documents, like identity documents, banknotes, checks, credit cards, etc., are genuine or counterfeit;
- Identify printing and production techniques of counterfeit and genuine security documents;
- Identify printing and production techniques of non-security documents and identify/exclude equipment of origin (printing devices, typewriters);
- Determine the integrity of documents, identify methods used to alter documents (erasures, obliterations, additions, photo/image of bearer substitution) and eventually recover the original content;
- Determine common origin of documents;
- Perform paper comparison analysis;
- Identify types of writing instruments;

- Perform ink comparisons;
- Stabilise damaged documents;
- Determine if seized materials have been used to produce the questioned document(s);
- Determine if dry or wet stamp impressions are genuine;
- Determine common origin of seized stamps and stamp impressions on documents;
- Determine common origin of marks on paper and seized cutting devices;
- Determine if fragments of paper come from the same sheet;
- Determine the sequence of entries on documents;
- Recover indented impressions present on the surface of documents; and
- Document dating.

Depending on the questions to be answered and the type of evidence, the laboratory will select the appropriate analytical methodologies and the sequence of their application, always starting with non-destructive techniques. All findings and results must be appropriately recorded.

Prior to any destructive approach, authorization from the competent judicial authority (or submitting officer) must be obtained and the exhibits must be photographed/scanned in their original state.

The use of reference collections of security documents is required to determine if a questioned document is genuine or counterfeit. In case of absence of a physical specimen, the laboratory may consult available databases containing images and technical descriptions of these documents, though being aware of the limitations of such reference material and its weight on the interpretation of results.

The European Document Experts Working Group (EDEWG) has produced a series of documents available to member laboratories on the various methods used in forensic document examination, that may be useful to assist the laboratory in this field.

3.3 SAMPLING

As a rule, all documents sent to the laboratory must be examined.

When performing paper comparison involving seizures of large batches of sheets, sampling procedures may be used. The laboratory is advised to adopt a sampling strategy and implement sampling schemes appropriate to the case, with minimum number of required analytical determinations, while assuring that all relevant legal and scientific requirements are met [10].

3.4 INTERPRETATION

In the field of forensic document examination there is often a level of subjective interpretation, as examinations often rely on the perceptual ability and visual acuity of the examiner and on the availability and quality of any relevant reference standards. Staff must be aware of the limitation of their abilities and knowledge, even if only due to the very fast technological development of the industries related to the production of security and non-security documents.

Staff must also be aware of the limitations and of all factors affecting interpretation of the results obtained with each analytical method used. They also must be aware of the procedures to minimize their impact.

Laboratories shall adhere to adequate guidelines such as those recommended by EDEWG in each of the published methods applicable to document examination.

Relevant limitations of an analytical scheme such as the inability to differentiate inks or papers, or unavailability of reference material, should be documented.

3.5 REPORTING

All efforts shall be directed to produce reports that are accurate, clear and objective and meet the requirements of the jurisdiction served. The reports should include the following information unless there are documented reasons for not doing so (for example, specific accreditation, client or jurisdictional considerations) and the information must be available for review in the casework documentation:

- Name and address of testing laboratory;
- Title of report;
- Submitting agency;
- Date of receipt of evidence;
- Date of report;
- Unique identification of the report on every page;
- Page number and total number of pages;
- Descriptive list of submitted evidence (including items not examined);
- Methodology used;
- Results;
- Conclusions;
- Limitations affecting the examination or results; and
- Identity and signature of staff member issuing the report.

Generally, results of document analysis should undergo technical review by a second expert. The laboratory shall determine a framework for a systematic peer review of casework and reports.

Casework documentation shall contain sufficient information such that the reviewer is able to evaluate case notes and interpret data. Before a report is released it should go through a technical and administrative review. In the event where the staff-in-charge of the case does not agree with the opinion of the reviewer, the matter will be handled in accordance with the laboratory's policy such as referring the matter to a higher authority who is competent to determine the disputed issue or to seek opinion from a third competent expert.

3.6 REFERENCE COLLECTIONS

Besides access to international databases of security documents, the laboratory should build their own reference collections both of security documents and other items of interest to the forensic examination of documents. This may include security documents, printing techniques, typefaces, papers, watermarks and other security features, writing instruments and inks, inkjet inks and any other materials the laboratory deems appropriate in the context of forensic document examination.

For each item the following minimum information should be recorded: origin, date of receipt at the laboratory, date of first issuance or introduction in the market, eventual date of withdrawal (e.g. for banknotes or identification/travel documents), producer/brand (e.g. for samples of printing techniques or typewriting, writing and inkjet inks, papers, security features).

4 PROCEDURES, PROTOCOLS AND VALIDATION

4.1 PROCEDURES AND PROTOCOLS

The laboratory shall have and follow analytical protocols and procedures for every aspect of document examination. Protocols and procedures shall be documented, tracked, and controlled. In-house developed procedures shall be tested prior to application to demonstrate they are fit-for-purpose. These procedures should be sufficiently detailed so that processes can be strictly followed to ensure analyses are carried out consistently and accurately.

Laboratories should monitor the analytical procedures using appropriate reference documents and/or controls to ensure the quality of analysis.

Significant changes in protocols or procedures must be verified, documented and approved by an authorized person before use. Examples of significant changes include using a new, non-validated analytical technique or the use of a different instrument not previously approved to perform document examination. Approved changes shall be communicated effectively to all staff involved.

In-house developed methods must produce acceptable results with adequate reference materials (e.g. writing inks previously analyzed by a validated method) prior to implementation.

4.2 VALIDATION

All methods (published or in-house methods) and instruments used for examination and analysis of documents shall be validated to demonstrate that they are fit for purpose. Validation should be performed by staff competent in the methods and equipment used. The following objectives of validation shall be established during validation studies, not all of them applying to every method used in document examination:

- Selectivity – to assess the capability of the method to provide adequate results to the issue in question.
- Repeatability – to assess the capability of the method to provide the same results taken by a single person or instrument on the same item, under the same conditions, and in a short period of time.
- Reproducibility – to access the capability of the method to consistently provide the same results when performed by multiple operators, on the same sample, under the same circumstances.
- Limits of Detection (LOD) - to determine the minimum amount of sample needed to obtain a result.
- Robustness - to assess the capacity of an analytical procedure to remain unaffected by small but deliberate variations in method parameters, providing an indication of its reliability during normal usage.

All documentation of validation processes shall be retained (a hardcopy or electronically). Documentation shall include:

- Name(s) of staff;
- Procedure of validation;
- Date of studies conducted;
- Details of instrument such as model number
- Data;
- Summary/conclusion of results; and
- Authorization approval.

5 QUALITY MANAGEMENT

The laboratory shall establish, follow and maintain a documented quality management system that is appropriate to the testing activities and is equivalent to what is required by these minimum requirements, covering all procedures and reports related to document examination and analysis.

Staff responsible for the quality management system shall be designated and have the authority to fulfil their duties accordingly.

There should be documented procedures/programs and maintenance of records in the following areas:

- Staff training, competency, responsibilities and continual development.
- Health and safety program to provide a healthy, safe and secure environment for staff and operations.
- Monitoring of evidence to ensure the integrity of all exhibits, including the chain of custody on receiving, transfer, storage and disposal/return of exhibits.
- Analytical procedures for document examination with validation of methods and instruments.
- Maintenance and calibration of instrument/equipment to ensure that proper performance is maintained.
- Reference standards, chemicals and reagents used in casework.
- Records of casework to ensure the proper documentation of results and reports are retained and secured.
- Annual proficiency testing for monitoring the laboratory's performance.
- Annual laboratory audits and any necessary corrective actions.
- Procedures for corrective actions when non-conforming work has been observed.

6 GLOSSARY

ADMINISTRATIVE REVIEW	A procedure where the content of the laboratory report is checked for consistency with laboratory policy, administrative documents, and case documentation, as well as editorial correctness. This review may be performed by a non-technical laboratory staff member.
ALTERATION	Any change made to a document by physical, chemical or mechanical means
ANALYTICAL PROCEDURE	An orderly step-by-step procedure designed to ensure operational uniformity and to minimize analytical drift.
ANNUAL	Occurs once per calendar year.
ASSEMBLY TECHNIQUE	Process of combining single sheets to form a book, booklet or brochure.
ASSESSMENT	Systematic, independent examinations to determine whether actual activities comply with planned activities. Assessments usually include a comparison of actual results to expected results.
AUDIT	An independent review conducted to compare the various aspects of the laboratory's performance with a standard for performance.
AUTHORIZED PERSON	A person who has the knowledge, expertise and necessary skills to make decisions and is authorized by the laboratory to do so.
CALIBRATE	To set measurement equipment against a known standard.
CALIBRATION	The set of operations which establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system and the corresponding known values of a measurement.
CASE NOTES	The documentation of procedures, standards, controls and instruments used, observations made, results of tests performed, charts, graphs, photographs, and other documents generated during an examination which are used to support the examiner's conclusions.
CHAIN OF CUSTODY	Procedures and documents that account for the integrity of an exhibit by tracking its handling and storage from its point of collection to its final disposition.
COMPETENCE	Ability to perform a specific task according to procedures.
COMPETENCY	The demonstration of technical skills and knowledge necessary to perform document analysis successfully.
COMPETENT	Capable of performing an allotted or required function and the ability to achieve the correct result.
CONTAMINATION	The introduction of foreign substances to an unrelated exhibit, usually unintentional.
COUNTERFEIT	Unauthorized copy or reproduction of an authentic security document.
CONTINUING EDUCATION	An educational activity (such as a class, lecture series, conference, seminar or short course) that is offered by a recognized organization or individual that brings participants up to date in their relevant area of knowledge.
CORRECTIVE ACTION	An activity performed to eliminate the root cause of an existing non-conformance or other undesirable situation to prevent recurrence.
CRITICAL	Of decisive importance with respect to the outcome.
DOCUMENT READER	Equipment to access and visualize digitally embedded data into electronic identification and travel documents.

DECODER	Analogue or digital system that allows the visualization of a printed hidden image on some part of a security document.
ELECTROSTATIC DETECTION DEVICE	Equipment to visualize indentations of writing and other changes to the surface structure of a document using electrostatic charging of the document followed by visualization of the dissipated charge.
EQUIPMENT	A durable item, instrument, or device used in a process or procedure.
INDENTED IMPRESSIONS	Non-visible and visible marks made in the fabric of a sheet of paper or other document.
INK	A coloured fluid used for writing, drawing and printing
LABORATORY	A facility providing document analysis service.
LABORATORY STAFF	Scientific personnel analyzing document exhibits (such as Analyst, Scientist, Laboratory Officer, Technician). The level of responsibility and involvement of each type of staff in the analysis of the exhibits depend on the organisation of the laboratory and the workflow used by the laboratory.
METHOD	The course of action or technique followed in conducting a specific analysis or comparison leading to an analytical result.
MULTISPECTRAL IMAGING SYSTEM	Instrument for forensic document analysis combining a camera, specialized light sources and filters that cover the visible, ultraviolet and near-infrared range of the electromagnetic spectrum
PERFORMANCE CHECK	A quality-assurance measure to assess the functionality of laboratory equipment that affects the accuracy and/or validity of analysis. This can include the use of sample controls.
PERSONALIZATION TECHNIQUE	Process of introducing the individual data of bearer into an identification or travel document.
PREVENTIVE MAINTENANCE	A procedure of inspecting and reconditioning an equipment at regular intervals according to specific instructions, intended to prevent failures in service or to retard deterioration.
PRINTING	A process of reproducing text or images from a master image on to a substrate such as paper
PROCEDURE	The manner in which an operation is performed; a set of directions for performing an examination or analysis.
PROCESS	A set of related tasks and activities that accomplish a work goal, i.e., that transforms input into output products and services.
PROFICIENCY TESTING	An ongoing process where unknown samples are tested on a regular basis by the laboratory and compared with the known/consensus identities or values. Internal proficiency tests are conducted by the laboratory itself; external proficiency tests are conducted by an independent agency.
QUALITY	Characteristics of a product or service that bear on its ability to meet requirements, including those defined during agreement review.
QUALITY ASSURANCE	Those planned and systematic actions necessary to provide enough confidence that a laboratory's product or service will satisfy given requirements for quality.
REAGENT	A chemical used to react with another chemical, often to identify the presence or absence of the second chemical/analyte.
RECORD (NOUN)	Information captured in writing or through an electronically generated medium that provides objective evidence of activities that have been performed or results that have been achieved, such as test records or audit results. Records do not exist until the activity has been performed and documented.
REVIEW	An evaluation of records to check for consistency, accuracy and completeness. A review comprises technical and administrative review.

REVIEWER	A person performing technical and/or administrative review.
SECURITY DOCUMENT	Document whose structure includes various security features in order to allow the verification of its authenticity and validity, and to prevent/reveal its counterfeiting or falsification
SECURITY FEATURE	Material and/or analogue or digital device included in a security document to prevent and/or render evident its counterfeiting, falsification or manipulation
STAMP	An instrument used to impress a pattern or mark on a surface. Ink is applied to the impressing surface, which is usually rubber engraved with a pattern.
STANDARD	A statement which describes an acceptable level of performance, excellence, or attainment in a particular activity.
SUBSTRATE	Material into/onto which all elements defined during the conception of a document are embedded/printed
TECHNICAL REVIEW	An evaluation of appropriateness of analytical method, sampling procedure, data, results and conclusions. This review must be conducted by a qualified laboratory staff member who has the relevant casework experience.
TECHNICAL VISIT	Travel for the purpose of obtaining information, knowledge or training, including interaction with or demonstration by pertinent manufacturers, businesses, and laboratories
VALIDATION	The process of performing a set of experiments which establish the appropriateness, suitability, accuracy and robustness of a technique or procedure.

7 REFERENCES

1. United Nations Office on Drugs and Crime. 2011. Staff skill requirements and equipment recommendations for forensic science laboratories. United Nations Office on Drugs and Crime Publication ST/NAR/2 Rev.1. https://www.unodc.org/documents/scientific/Ebook_ STNAR_02Rev1_E.pdf (accessed November 12, 2015).
2. United Nations Office on Drugs and Crime. 2010 Guide for the development of forensic document examination capacity http://www.unodc.org/documents/scientific/Forensic_ Document _Examination_Capacity.pdf (accessed November 12, 2015).
3. ILAC-G19: 08/2014 Modules in a Forensic Science Process. https://ilac.org/?ddownload=805 (accessed November 13, 2015).
4. Edison Travel Documents (computerized system storing a vast collection of sample travel documents and residence permits; Edison is owned and developed by the Dutch National Police Services Agency (KLPD) National Criminal Intelligence Department and is organized with international cooperation).
5. Keesing reference database Documentchecker on identification documents and banknotes. Keesing Technologies is a specialist provider of verification tools, reference manuals and reference databases on security documents.
6. Public Register of Travel and Identify Documents Online (PRADO): contains information on security features of authentic identity and travel documents. The information is selected and provided by the Member States of the European Union, Iceland, and Norway. http://www.consilium.europa.eu/prado/PT/prado-start-page.html (accessed November 12, 2015).
7. False and Authentic Documents Online (FADO): a classified restricted access system for the exchange of information between EU document experts on travel and identity documents.
8. Interpol, Stolen and Lost Travel Documents.
9. IFSA. 2014. Minimum Requirement for Crime Scene Investigation: A document for emerging laboratories. https://www.ifsa-forensics.org/minimum-requirements-documents/ (accessed July 17, 2020).
10. ISO 2859-1:1999 Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection.
11. ISO/IEC17025, Third Edition 2017-11. General requirements for the competence of testing and calibration laboratories

IFSA MEMBERS

STRATEGIC PARTNERS

INTERPOL

UNODC
United Nations Office on Drugs and Crime

Leverhulme Research Centre for Forensic Science
LEVERHULME TRUST

CONTACT:

International Forensic Strategic Alliance: http://www.ifsa-forensics.org