



ANSI-ASQ National Accreditation Board

ISO/IEC 17020 Accreditation and Supplemental
Requirements for Forensic Inspection Agencies

Document 12

Table of Contents

1.0 PURPOSE	4
2.0 INTRODUCTION	4
3.0 ACCREDITATION PROCESS	5
3.1 Quotation and Charges	5
3.2 Application	5
3.2.1 Notification and Objections	7
3.3 Introductory Visits / Practice Assessments	7
3.4 Document Review	8
3.5 Planning Visit.....	8
3.6 Accreditation Assessment	8
3.6.1 Non-Conformances.....	9
3.6.2 Customer Corrective Actions	9
3.6.3 Decision on Accreditation	10
3.7 Surveillance Assessment	10
3.8 Reassessment.....	11
3.9 Scope Extension	11
4.0 APPEALS	11
5.0 WITHDRAWAL, WITHHOLDING, REDUCING, SUSPENDING ACCREDITATION	13
6.0 MEASUREMENT TRACEABILITY	14
7.0 PROFICIENCY TESTING	14
8.0 USE OF FQS SYMBOL	15
9.0 CONFIDENTIALITY AND CONFLICT OF INTEREST	15
10.0 DELAYS WITH ASSESSMENTS	15
11.0 GUIDANCE ON THE APPLICATION OF ISO/IEC 17020	16
12.0 CRIME SCENE INVESTIGATION SUPPLEMENTAL REQUIREMENTS	16
12.1 Introduction	16
12.2 References	17
12.3 Definitions.....	18
12.4 Independence, Impartiality and Integrity	19
12.4.1 Policies and Procedures	19
12.4.2 Inspection Agency Classification.....	19
12.5 Organization and Management	20
12.6 Quality System	20
12.7 Personnel	22
12.8 Proficiency Testing.....	23
12.9 Facilities and Equipment	24
12.10 Inspection Methods and Procedures.....	26
12.11 Handling Inspection Samples and Items	28
12.12 Records.....	29
12.13 Subcontracting.....	31
12.14 Confidentiality.....	31
13.0 FRICTION RIDGE EXAMINATIONS SUPPLEMENTAL REQUIREMENTS	31
13.1 Introduction	32
13.2 References	32
13.4 Independence, Impartiality and Integrity	34
13.4.1 Policies and procedures	34
13.4.2 Inspection Agency Classification.....	34
13.5 Organization and Management	35
13.6 Quality System	35

13.7 Personnel	37
13.8 Proficiency Testing.....	38
13.9 Facilities and Equipment	38
13.10 Inspection Methods and Procedures.....	40
13.11. Handling Inspection Samples and Items	41
13.12 Records.....	42
13.13 Subcontracting.....	44
13.14 Confidentiality.....	44
14.0 FIREARMS EXAMINATION SUPPLEMENTAL REQUIREMENTS	44
14.1 Introduction	44
14.2 References	45
14.3 Definitions	46
14.4 Independence, Impartiality and Integrity	47
14.4.1 Policies and Procedures	47
14.4.2 Inspection Body Classification	47
14.5 Organization and Management	48
14.6 Quality System	48
14.7 Personnel	50
14.8 Proficiency Testing.....	51
14.9 Facilities and Equipment	51
14.10 Inspection Methods and Procedures.....	53
14.11 Handling Inspection Samples and Items	54
14.12 Records.....	55
14.13 Subcontracting.....	56
14.14 Confidentiality.....	57

1.0 PURPOSE

This purpose of this document is to establish policies for and provide a general description of the FQS ISO/IEC 17020 inspection body accreditation process to the customer. This document is available to the general public and any interested party, and is written specifically to communicate the FQS ISO/IEC 17020 accreditation process to its customer. This document defines all requirements for inspection body accreditation and is mandatory for all FQS applicant and accredited customers. Inspection body accreditation follows a similar course of action as accreditation to ISO/IEC 17025 for testing and calibration laboratories.¹

The term “customer” as used in this document refers to an organization seeking inspection body accreditation from FQS. An FQS customer shall maintain impartiality and integrity.

The term “inspection agency” is more appropriate for the forensic science industry and will be used in lieu of “inspection body.”

FQS maintains its financial stability by charging its customers fees and expenses for its services according to its approved public rates and as provided to its customers in a quotation. The FQS fee structure is available upon request.

2.0 INTRODUCTION

FQS is committed to superior accreditation services including those for agencies following ISO/IEC 17020. Our processes for such accreditation offer applicant bodies the opportunity to assure their customers of their compliance with international standards and international recognition of good practices.

The areas encompassed in the inspection arena may entail numerous processes including but not limited to crime scene examinations, latent print processing and comparison, firearms examination, and digital media examinations. It may involve multiple sets of authorities and requirements, from legal and regulatory, to customer-specific requirements. Much of the value for inspection services, however, relate to international trade assurances, proper examination of evidence and/or crime scenes, risks of product failure, and more indirect risks to environmental and human health.

Similar to our other accreditation services, including ISO/IEC 17025 (for testing and calibration laboratories) and reference material producer accreditation, inspection body accreditation involves assurance of technical competence and practices in addition to good quality management practices. Our management and technical staff assure high-quality service, integrity, independence, impartiality, confidentiality, highly-trained experts and assessors, and unmatched customer service.

¹ Throughout this entire document, additional information about the FQS accreditation process can also be found in FQS Document 11, ISO/IEC 17025 Accreditation Requirements. This document is available on the FQS web site at www.fqsforensics.org

FQS uses ISO/IEC 17020 (or future versions thereof), *General Criteria for the operation of various types of bodies performing inspection* and IAF/ILAC-A4 (for future versions thereof), *Guidance on the Application of ISO/IEC 17020*, for the accreditation of inspection bodies.

FQS will maintain impartiality as required by ISO/IEC TR 17010 (see also Responsibilities and Obligations of the Customer, Appendix A of the FQS application for inspection body accreditation).

3.0 ACCREDITATION PROCESS

3.1 Quotation and Charges

A customer can request and obtain a quotation. Any authorized FQS personnel can provide a quotation. Information on the number of days and rates for FQS services is readily available. FQS will charge the customer for the accreditation services on the basis of the time spent and the extent of the scope, according to the then current FQS fee schedule, which is publicly available upon request. Based on these rates and information, FQS will provide a quotation with an estimate on fees for the entire accreditation process, surveillance, and reassessment. All quotations are subject to change after further review of the proposed scope of accreditation and/or request to extend the scope of accreditation. Quotations depend upon, but are not limited to, size of the organization, number and/or types of inspections, and number of proficiency-tested personnel.

3.2 Application

FQS will provide accreditation services to any customer who applies provided FQS has or can reasonably obtain the proper credentials and resources.²

Some inspection areas for which accreditation may be applied include but are not limited to:

- Crime scene examination
- Environmental contamination scenes
- Recovery and comparison of latent fingerprints
- Examination of firearms and related items
- Examination of digital media

An application form is provided with each quotation. Every customer seeking accreditation must submit an application packet. This packet should be submitted in electronic format, when possible, and must include the following:

² Excerpt from IAF/ILAC-A4:2004, *Guidance on the Application of ISO/IEC 17020*, "Testing performed by an inspection body may fall into one of two categories namely functional and analytical. Functional testing, for example load testing of a crane, forms a normal part of the activities for an inspection body and is therefore within the scope of ISO/IEC 17020. Analytical testing, which must be performed inside a laboratory under well-controlled environmental conditions and using more sophisticated equipment or testing procedures) is a laboratory activity and therefore does not come within the scope of ISO/IEC 17020. Inspection bodies wishing to undertake such laboratory type analytical testing as part of an inspection will need to do so in accordance with the relevant requirements in ISO/IEC 17025."

Every customer seeking accreditation must submit an application using *FQS Form 301*. The application form should be submitted in electronic format, when possible, and should include the following:

- locations to be covered by the accreditation
- proposed scope of accreditation
- quality manual and associated operating procedures, however named
- uncertainty budgets if the scope includes calibration or is specified by any of the supplemental requirements
- inspection areas for which accreditation is sought
- number of proficiency-tested personnel in each inspection area

FQS accreditation activities shall be confined to the scope of accreditation, agreed upon after receipt of the application and before selection of the assessment team.

Separate applications are required for each accreditation location. Physical locations in close proximity can be considered one location (this will be determined by FQS). The requirements for accreditation are based on ISO/IEC 17020.

Upon receipt of the completed application and the non-refundable application fee, FQS will review the application to make sure it has all the information needed, as well as to ensure FQS has the proper accreditation credentials and resources. FQS will provide accreditation services to any customer who applies if FQS has or can reasonably obtain the proper credentials and resources.

During review of the application, FQS will determine if additional information is required to be submitted.

After final review of the completed application form, FQS will acknowledge to the customer receipt of the application and ensure that all customer expectations can be met, particularly the customer's desired scheduling. The customer and FQS shall work in coordination with each other to determine assessment dates.

If the review reveals that FQS has the capability to perform the assessment, FQS will assign a lead assessor. The lead assessor, in coordination with FQS, shall verify the proposed scope of accreditation directly with the customer. Upon verification of the proposed scope of accreditation, FQS shall assemble a team of FQS assessors and/or experts, as necessary.

The customer will be informed of the assigned assessor(s). The customer has the right to appeal (object to) any assigned assessor(s) and/or expert(s) (Section 3.2.1).

FQS will wait for the customer's submittal of documentation if not previously supplied with the application, to begin the accreditation process. FQS may discuss with the customer scheduling one or more of the optional services (below) during this process.

The customer and FQS shall work in coordination with each other to determine assessment dates.

Where measurement uncertainty is required, the agency must comply with Section 7 of Document 11.

3.2.1 Notification and Objections

FQS will provide the customer in advance of performance of any service the names of all assessors and/or experts assigned to its accreditation process. The customer may decline (object) to FQS to have any particular assessor(s) and/or expert(s) participate in their accreditation process. This is especially true and expected if the customer knows of any existing or potential conflicts of interest. FQS will inquire as to the reason for such objection.

If the customer objects to the appointment of any particular assessor and/or expert they shall, if requested:

- Submit their objection to FQS
- Identify the particular assessor or expert in question
- Identify the reason behind the objection including known conflict of interests

Upon receipt of the objection, FQS shall:

- Determine whether the objection is valid
- Investigate the cause for the objection, including taking any necessary corrective and/or preventive actions
- Appoint new assessor or expert
- Notify the customer in writing of the names of the new member of the assessment team, as appropriate

3.3 Introductory Visits / Practice Assessments

Both introductory visits and practice assessments are available to applicant customers. FQS will not give any advice nor consult in any manner.

The purpose of an introductory visit is to convey the FQS accreditation process and requirements to the customer.

The practice assessment consists of an assessment in the same manner as an actual accreditation assessment and will document compliance and non-conformances on the same forms as in an actual assessment. The practice assessment has no influence on the actual accreditation assessment and assessor(s) assigned to perform the practice assessment normally will not perform the accreditation assessment.³

³ For more information see also FQS Document 11, ISO/IEC 17025 Accreditation Requirements

3.4 Document Review

Upon receipt of the application packet containing the required documentation, FQS will conduct a document review. FQS will perform an evaluation to begin the determination of conformance of the customer's inspection body management system to the requirements. The customer must have a documented inspection agency management system which conforms to the requirements. FQS may ask the customer for additional documentation and information during the document review process.

FQS will deliver to the customer a document review report indicating which requirements are adequately addressed and a summary of any issues. If significant issues arise from the document review, FQS may recommend to the customer the option of a planning visit to ensure readiness for the accreditation assessment.

3.5 Planning Visit

A planning visit may be requested by the customer at any time. An assessor will normally perform a one day visit to the customer to review resolution of any issues from the document review, and to verify that other documentation exists supporting the customer's inspection agency management system. The assessor will also perform sample assessment questioning. This allows the assessor to judge if the customer is ready for the accreditation assessment. Also, this visit and review enables the assessor to prepare the plan and schedule for the assessment.

FQS will not give any advice nor consult in any manner during the planning visit.

3.6 Accreditation Assessment

The purpose of the accreditation assessment is to sample the customer's quality and technical management system in the area(s) of inspection and determine through the use of interviews, reviewing procedures, data, witnessing, and records that the customer's system is effectively implemented and meets the applicable requirement(s). The assessment team uses the accreditation assessment to judge if the customer is ready to be accredited.

The accreditation assessment shall consist of:

- a thorough review of the customer's compliance to the requirements of ISO/IEC 17020
- an opening meeting with the customer's management
- daily assessor meetings and customer debriefings
- a review of any open issues from the document review and planning visit, if applicable
- a review of any results from proficiency testing, if applicable
- on-site assessment, including field locations as applicable, to determine compliance and to evaluate expertise in the inspection area(s) applied for (may include simulations)
- a final assessment team meeting to discuss findings
- a recommendation from the lead assessor in consultation with the assessment team to accredit, not to accredit, or hold accreditation pending non-conformance resolution
- a closing meeting

It should be noted that, during the initial assessment or reassessment, the number of methods to be assessed must be sufficiently large so that the key or principal methods in each field of activity listed on the scope can be drawn upon and adequately assessed. In each field of activity, at least one key or principal method must be assessed and at least 25% of the inspection personnel associated with the proposed accreditation areas must be witnessed. This guideline applies to inspection agencies regardless of the number of geographic areas of inspection services offered and the number of inspection personnel associated with the proposed accreditation areas.

The customer will receive a detailed Accreditation Assessment Report. This report contains information about the customer, details about the accreditation and scope, identification of the assessors, a summary of the assessment results, and copies of each finding. The report will also include copies of the assessors' Accreditation Checklist and notes. Each of the report-related files will be accessible by the customer via secure access to the FQS database, EQM.

3.6.1 Non-Conformances

The assessment team shall record findings on the FQS Non-Conformance Record referenced to the Accreditation Checklist. Team members will classify each finding as a major non-conformance or a minor non-conformance and note each one on the respective location in the checklist.

A Major Non-conformance is the absence of, or the failure to implement and maintain one or more of the Accreditation Checklist requirements, or a situation which would, on the basis of available objective evidence raise significant doubt as to the inspection activities conducted by the accreditation customer. The assessment team may judge numerous minor non-conformances against a single requirement to be a significant breakdown of the inspection body management system and thus a major non-conformance.

A Minor Non-conformance is any other non-conformance which is an isolated occurrence and is normally easily corrected and verified.

An Opportunity is neither a major nor a minor non-conformance. It is used to document items that may help a customer improve.⁴

If during the initial accreditation assessment a significant number of non-conformances are identified and these non-conformances affect considerably the completion of the assessment, the lead assessor may, in coordination with FQS, recommend to the customer that the initial accreditation assessment be considered a practice assessment. In such a case, the initial accreditation assessment will then be re-scheduled.

3.6.2 Customer Corrective Actions

⁴ ILAC-G20 Guidelines on Grading of Non-conformities (or future versions thereof) is used as guidance for classification of non-conformances

During the accreditation process, surveillance and reassessment, FQS assessors will identify issues and non-conformances. The customer and FQS will agree upon the deadline (normally 30 days) for corrective actions.⁵ FQS reserves the right to verify whether the customer has taken and effectively implemented adequate corrective action.

FQS requires the customer to take prompt actions on any issues or problems identified by the customer during internal audits or reviews. Responses shall be sent through direct uploads to the FQS EQM database by the customer. These corrective actions will be managed as appropriate in the EQM system until resolved.

Based on the recommendation of the assessment team, results of the assessment and extensive corrective actions may result in a possible follow-up visit. The amount of time to perform this service will depend on the severity and extent of issues that were documented. The charge for this service will be at the current FQS rate. The timing for this part of the assessment process will be coordinated among FQS, the lead assessor, and the customer.

3.6.3 Decision on Accreditation

The content and format of the assessment report will be in accordance with FQS procedures. The cost of preparing the report is included in the price quoted for the assessment.

FQS requires the assessment and accreditation decision to be separate. Members of the assessment team will not take part in the review process.

The decision is made by the Accreditation Manager on receipt of notification by the lead assessor that the agency is in conformance with program requirements or that the agency has non-conformances that will not be rectified within a reasonable time.

The date upon which the accreditation decision was made shall be the valid date of accreditation for each customer. The accreditation decision date shall determine the surveillance and reassessment cycle.

If an accreditation decision is unfavorable or if a customer has withdrawn its application, FQS will consider any new application only after the customer has demonstrated that adequate corrective actions have been taken as necessary, or that the reasons for the withdrawal no longer apply.

If the accreditation decision is favorable and all payments have been received, FQS will grant accreditation and will issue a certificate and scope of accreditation.

3.7 Surveillance Assessment

FQS accreditation is for two to five years depending on the maturity of the agency management system. After the initial year of accreditation, each inspection body shall undergo, at a

⁵ For surveillance and reassessments, FQS requires corrective action responses within 30 days from the date of the assessment.

minimum, a one-day surveillance assessment. The purpose of the surveillance is to ensure that the customer's organizational management system is maintained and remains effective.

At a minimum, complaints, internal audits, management reviews, and any changes to key personnel or facilities are elements of the customer's inspection body management system which FQS will review during each surveillance visit.

FQS may conduct surveillance assessments on a more frequent occurrence should FQS determine surveillance is warranted.

Any resulting non-conformance from a surveillance visit shall be responded to by the customer within 30 days. FQS shall monitor this time limit, and take any appropriate action. Such appropriate action may include suspension or withdrawal of accreditation in accordance with FQS procedures and the application for accreditation.

If the results of the surveillance visit yield excessive non-conformances or if major modifications occur, FQS may require a follow-up visit and/or additional assessment time.

3.8 Reassessment

FQS will conduct an on-site reassessment of accredited customers at the end of each accreditation cycle for verification of continued compliance with FQS accreditation requirements. The reassessment process is similar to the accreditation assessment.

Any resulting non-conformance from a reassessment visit shall be responded to by the customer within 30 days. FQS shall monitor this time limit, and take any appropriate action. Such appropriate action may include suspension or withdrawal of accreditation in accordance with FQS procedures and the application for accreditation.

If the results of the reassessment visit yield excessive non-conformances or if major modifications occur, FQS may require a follow-up visit and/or additional assessment time.

3.9 Scope Extension

FQS will accept requests to review any scope extension for any additional category of inspection with following inputs submitted. Unless discussed specifically with FQS in advance assessors on-site will not entertain any scope extension request. The scope extension request must be made in writing with additional submission of relevant inspection procedures, availability of appropriate resources (proficiency-tested personnel, monitoring and measuring devices and other appropriate infrastructural needs), and draft scope of accreditation.

4.0 APPEALS

The FQS appeal process is the system for customers to file a disagreement with the severity of any finding or final recommendation from an assessment visit. It has two levels of appeal: Level 1 appeals are heard by a panel of FQS staff and/or assessors; level 2 by a panel of the Accreditation Council.

Level 1 appeals are heard by a panel of three consisting of staff and/or accreditation assessors not involved in the assessment. This is normally the level applied to any appeal of an assessment non-conformance.

Level 2 appeals are made to the Accreditation Council and heard by a panel of three members of the Council. This is the first level for any appeal of an accreditation decision or any other decision of the Accreditation Council. It is also the second level of appeal if either party (the appellant or FQS) is not satisfied with the decision made by the level 1 appeal panel.

An appeal shall be lodged in writing no later than 30 days after notification to the customer of the decision or action, or whenever the appropriate appeal panel may reasonably assume the decision or measure in question to be known to the appellant.

Appeals shall be lodged using the appeals form (Form 310) and will include appropriate substantiation for the appellant's position.⁶

A panel of three members is appointed, with one of the three members appointed chair. For level 1 appeal, the panel members are appointed by the FQS Vice President and/or Director of Accreditation. For level 2 appeals, the panel members are appointed by the chair of the Accreditation Council. The appellant and FQS shall be informed of the members of the panel and have an opportunity to object to the selections.

Appeals are not legal proceedings. Therefore, FQS shall be notified at least 10 days in advance if an appellant intends to have legal counsel present to ensure FQS has sufficient advance notice so that it can also have legal counsel present.

The appeal shall be heard within 60 days unless otherwise agreed by all parties.

Unless otherwise agreed in advance, the level 2 appeals hearing shall be conducted as follows:

- Introductions.
- Presentation by the appellant, limited to 30 minutes.
- Presentation by FQS, limited to 30 minutes.
- Rebuttals, limited to 10 minutes for each party.
- Questions by the panel.
- Closing of the hearing. The chair shall:
 - Make a formal projection regarding the expected time frame for communicating the documented final decision (normally not to exceed two weeks).
 - Inform all parties that the appeal may be escalated to the next level of appeal within 30 days of receipt of the panel decision.
 - Dismiss the parties.

⁶ An appeals form is available on the FQS web site at www.fqsforensics.org

Following the hearing, the panel members will deliberate without any involvement by the appellant or FQS.

The chair shall document the panel's decision and send it concurrently to the designated representatives of the appellant and FQS.

The appeal panel's decision will be documented. However, any notes made by panel members in preparing for the appeal, during the hearing, or during the subsequent deliberations will not be maintained.

If a level 2 decision by an appeals panel of the Council is unfavorable to the appellant, the appellant may lodge a final appeal in writing to FQS. FQS shall immediately transmit this letter to the designated responsible ANSI staff for timely consideration and action by the ANSI Appeals Board. The process is described in the ANSI Appeals Board Operating Procedures and can be accessed by visiting www.ansi.org.

ANSI shall communicate the decision of the ANSI Appeals Board to the appellant and FQS.

5.0 WITHDRAWAL, WITHHOLDING, REDUCING, SUSPENDING ACCREDITATION

Upon the recommendation of the assessor and agreement of the Director of Accreditation, and/or Vice President, FQS may withdraw, withhold and/or suspend accreditation if one or more major non-conformances are discovered during a surveillance and/or reassessment visit. In particular, if any major non-conformance causes the assessor to have any material doubt about the performance of the customer, FQS upon the recommendation of the assessor may withdraw, withhold, and/or suspend the customer's accreditation until final determination is made by the Director of Accreditation and/or the Vice President.

If the FQS symbol is misused in any manner, FQS may withdraw, withhold, and/or suspend the customer's accreditation in accordance with this document and the application for accreditation.

FQS may withdraw, withhold, and/or suspend the customer's accreditation if payment has not been made for services FQS has performed in accordance with the application for accreditation.

FQS may withdraw, withhold, and/or suspend the customer's accreditation if an accredited customer persistently fails to meet FQS requirements.

An FQS accredited customer may ask for a suspension and/or withdrawal of their accreditation in accordance with FQS requirements.

FQS may reduce a customer's scope of accreditation for those parts of the scope of accreditation where the customer regularly fails to meet FQS requirements for accreditation, including competence in accordance with the application for accreditation.

An FQS accredited customer may ask for a reduction in their scope of accreditation at any time in accordance FQS requirements.

All customers that have their accreditation suspended, reduced, and/or withdrawn, shall discontinue use of the FQS symbol upon written notification and in accordance with FQS requirements. Suspended and withdrawn customers, upon suspension or withdrawal, must remove any use of the FQS symbol and reference to their certificate and scope of accreditation within 30 days of notification.

6.0 MEASUREMENT TRACEABILITY

All equipment used for measurements and/or tests, where the results of such measurements and/or tests have a significant influence on the results of the inspection (i.e. the conclusion about conformance with requirements) shall be traceably calibrated. In such instances, the FQS policy on traceability shall apply. See FQS Document 11 located on the FQS web site at www.fqsforensics.org for more information.

7.0 PROFICIENCY TESTING

While proficiency testing is an integral part of laboratory accreditations worldwide, it is not necessarily relevant in many circumstances in the inspection body arena.⁷ However, in many cases and where relevant, inspection bodies are expected to participate in proficiency testing.

For those inspection bodies where it is relevant and where available proficiency testing programs exist, annual participation is expected. In addition, for those affected bodies where multiple major sub-areas (see Inspection Body Major Areas of Accreditation listing in the FQS ISO/IEC 17020 Application Form) are accredited, proficiency testing participation is required in each major sub-area at least once every four years. If governmental or industry-specific requirements dictate that other testing comparisons or other frequency of comparisons be performed, affected inspection bodies will be held to those requirements as well. Such participation may replace the annual and four-year requirements previously noted.

During the accreditation process, surveillance and reassessments, FQS assessors will review all related proficiency testing activities and non-conformances or corrective actions that may arise from these activities. The customer will need to provide FQS with reports, data and evidence of their related activities at each FQS visit. FQS requires the customer to take prompt actions on any issues or problems identified related to proficiency testing comparisons.

For proficiency testing programs that report results in the form of number of standard deviations from the mean of all results, in most cases, three or more standard deviations is considered an outlier and requiring corrective action. Also, for inspection bodies that participate in proficiency testing and a failure or outlier result, they are expected in most cases to repeat participation in such testing in a reasonable time frame. If the repeat -participation results in unsatisfactory reporting a second time, this may result in removal of that inspection area from the scope of accreditation. Subsequent satisfactory results may then initiate a process to reinstate an area on the scope of accreditation.

⁷ Where appropriate, agencies must follow the requirements for proficiency testing described in Section 6 of Document 11.

8.0 USE OF FQS SYMBOL

FQS controls the certificate, scope of accreditation, and the use of the FQS accreditation symbol with FQS procedures and as provided for in the application for accreditation.

FQS maintains a logo used only by FQS. The FQS symbol, which is issued by FQS to accredited customers to indicate their accredited status, shall be used by accredited customers only.⁸

9.0 CONFIDENTIALITY AND CONFLICT OF INTEREST

The information included in the application for accreditation, an assessment or other information associated with a customer's assessment process is considered confidential. Such information shall not be released unless the customer provides permission to FQS, in writing, to release such information.

All reports and information which FQS acquires during the accreditation process will be treated as confidential by all FQS employees, assessors, experts and associates. Each FQS assessor and expert will sign a confidentiality statement for each customer for whom accreditation services are provided by that FQS assessor and expert.

FQS assessment team members will have no current consulting ties with the customer being assessed. Additionally, no FQS assessor shall have provided any inspection body consulting service to a customer that assessor is appointed to assess for 24 months before the date of the assessment activity. Following the assessment activity, the FQS assessor shall provide no accreditation service other than from FQS or any consulting to an FQS customer for 12 months after the date of the last appointed accreditation service.

10.0 DELAYS WITH ASSESSMENTS

During the course of most FQS assessment visits, there are findings (i.e. non-conformances) written. These highlight either minor or major deficiencies found in the system being assessed. At the closing meeting of each visit, these findings are reviewed, and the anticipated time frame of closure of the findings is discussed. Whenever findings are written related to an assessment visit, the affected organization is notified of the expectation for them to reply to FQS within 30 days of the closing meeting specifically to each finding. At a minimum, this response should outline the steps to be taken to close out the finding. If possible, the response may also include sufficient evidence of corrective actions and documents or records that will allow this closure. If the objective evidence submitted is not enough for closure, it should at least outline the plan and time frame for closure.

There are times, however, when organizations are delayed in their corrective action responses. Such delays could have a negative effect on the relevant organization's accreditation process.

⁸ See also FQS Document 11 available at www.fqsforensics.org

If an applicant customer, during initial accreditation, fails to respond meaningfully to all non-conformances in writing within six months after the date of the closing meeting (i.e. last day of the initial accreditation assessment), FQS may require the customer to submit a new application, subject to new fees, and undergo a full reassessment.

If an applicant customer responds formally to the non-conformances within 6 months, but fails to have all relevant non-conformances closed by FQS as a result of their reasonable and appropriate corrective actions within one year, they may be required to undergo a full reassessment. FQS reserves the right to require a reassessment of an organization before an initial accreditation decision is made based on timeliness of corrective actions, the seriousness of the non-conformances written, and appropriateness of the corrective actions.

Organizations undergoing surveillance or reassessments are required to respond to all non-conformances in writing within 30 days after the date of the closing meeting. Failure to resolve all non-conformances within 60 days (unless another time frame has been agreed to by FQS) from the date of the closing meeting may result in the suspension and/or withdrawal of accreditation for that organization.

11.0 GUIDANCE ON THE APPLICATION OF ISO/IEC 17020

IAF/ILAC-A4, *Guidance on the Application of ISO/IEC 17020* (or future versions thereof) provides guidance to inspection bodies on the requirements of ISO/IEC 17020. All applicable clauses of this document are mandatory for all FQS applicant and accredited customers.

The guidance and interpretations found within this document form the basis of mutual recognition arrangements between accreditation bodies, and is considered necessary for the consistent application of ISO/IEC 17020.

The term “shall” is used throughout this document to indicate those provisions which, reflecting the requirements of ISO/IEC 17020, are mandatory. The term “should” is used to indicate those provisions which, although not mandatory, are provided by ILAC/IAF as a recognized means of meeting the requirements.

IAF/ILAC-A4 is available free of charge from FQS or by visiting the ILAC web site at www.ilac.org.

12.0 CRIME SCENE INVESTIGATION SUPPLEMENTAL REQUIREMENTS

12.1 Introduction

This document is intended to provide amplification for the application of ISO/IEC 17020 to crime scene investigation inspection agencies.

It was developed by a Technical Advisory Committee (TAC) consisting of twelve (12) subject matter experts and one (1) representative of ANSI-ASQ National Accreditation Board/FQS.

The TAC developed the document in the context of a program primarily directed to law enforcement agencies (“agency”) whose police forensic units perform crime scene investigation, either as their sole responsibility or as part of a police science unit with broader testing responsibilities.

Testing performed by a crime scene investigation unit (inspection agency) may fall into one of two categories: namely functional or analytical. Functional testing, for example distance measurements, forms a normal part of the inspection activities of a crime scene investigation unit and is therefore within the scope of ISO/IEC 17020. Analytical testing laboratories, for example conducting the analysis of controlled substances or DNA profiling, are covered by ISO/IEC 17025. This includes analytical testing conducted in the field.

For the purposes of this document, forensic inspection is defined as the examination of an item or location and, on the basis of professional judgment, the determination of conformity with proposed events or known conditions. The inspection agency will have to demonstrate that it has the necessary competence to perform the tasks involved. For the purposes of accreditation, measurements that are used to assist in documenting the inspected location or item and tests or processes that are used to assist in the identification, visualization and collection of forensic evidence may be listed on the agency’s scope of accreditation.

When using the ISO/IEC 17020 standard with this FQS field specific criteria document, the terms “inspector” and “inspection”, are equivalent to “investigator” and “investigation” respectively.

Any functional testing conducted by the crime scene investigator, such as screening or presumptive testing, shall be carried out according to documented procedures and ISO/IEC 17020 is intended to cover these procedures provided that the relevant clauses of ISO/IEC 17025 are met. Traceability and measurement uncertainty are examples of relevant clauses. In these cases the agency must comply with the requirements of Section 7 of Document 11.

It is recognized that there is considerable overlap in functional and analytical testing in forensic units. Agencies are encouraged to pursue the benefits of accreditation, but should consider carefully which international standard best fits their needs.

12.2 References

ISO/IEC 17020 General criteria for the operation of various types of bodies performing inspection (or future versions thereof)

ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories (or future versions thereof)

EA-5/03 Guidance for the implementation of ISO/IEC 17020 in the field of crime scene investigation (or future versions thereof)

ILAC G-19 Guidelines for forensic science laboratories (or future versions thereof)

IAF/ILAC-A4 Guidance on the Application of ISO/IEC 17020 (or future versions thereof)

12.3 Definitions

Client or Customer: The client or customer is the body asking the crime scene investigation unit to perform the crime scene investigation or a specific part of it.

Crime Scene: The term “crime scene” is used to identify a scene of incident prior to establishing whether a criminal or other action requiring investigation has taken place or not. The crime scene is not solely restricted to the location of the incident, but also includes areas where relevant acts were carried out before or after the crime, or the body of a suspected perpetrator.

Evidence: Evidence or exhibit is an item or sample recovered as part of an investigation. This includes everything recovered from a crime scene including swabs, whole objects, debris, etc, and derived items such as casts of footprints and finger mark lifts.

Forensic Agency: A forensic agency is a legal entity or a defined part of a legal entity that performs any part of the forensic process.

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

Inspection Body: Inspection body as used in this document is a forensic unit or agency such as a crime scene investigation agency using professional judgment to examine (inspect) a scene with the aim to contribute to determining what happened, where it happened, when it happened, how it happened, why it happened and who was involved.

Investigator: A person, however named, trained to perform crime scene examinations and/or investigations. Throughout this document, whenever the term investigator is used, it refers to the function “inspector” as used in ISO/IEC 17020.

*Examiner:*⁹ An individual who conducts and/or directs the inspection of crime scenes or submitted items, performs comparisons, interprets data, reaches conclusions and/or testifies in court.

Forensic Inspection: Forensic inspection is the examination of a person, item or location and on the basis of professional judgment the determination of their conformity with proposed events or known conditions.

⁹ The definitions of investigator and examiner can be very close. Both, if trained, can conduct crime scene investigations and testify. Typically, however, the examiner is the one who performs comparisons, interprets data, and reaches conclusions.

Equipment: Equipment refers to all tools and instruments used as part of the forensic process which need to be monitored and controlled. This also includes reagents and personal protective equipment.

12.4 Independence, Impartiality and Integrity

12.4.1 Policies and Procedures

The organization must have clear and documented policies and procedures regarding the pressures on individuals that may affect their judgment. In addition, the organization must have a policy and procedure that shall be followed if a circumstance is discovered where there is a possibility that an individual's judgment has been compromised.

12.4.2 Inspection Agency Classification

ISO/IEC 17020 classifies inspection agencies as type A, B or C, depending on the degree of independence of the inspection agency from its client or customer. In terms of tasks and structure, crime scene investigation units are essentially inspection agencies which provide services as impartial third parties.

A crime scene investigation unit that inspects a crime scene and/or evidence from a crime scene that is not connected to the parent organization would meet the requirements of a Type A inspection agency, that is, its organization and management are independent of those of the customer or other interested parties. However, due to the nature of the scene of crime investigation it is not always clear before the investigation has been finished and the case resolved, whether the persons involved in the crime do actually have connections, for example relatives to the employees of the crime scene investigation unit. The crime scene investigation unit must therefore have policies and procedures for dealing with such situations and have measures to ensure that its impartiality can be defended if challenged.

Type B inspection agency is a separate and identifiable part of an organization that has been established to supply inspection services to only its parent organization. Unless an agency's crime scene investigation unit only performs services on evidence recovered from within its parent organization it will not be a Type B inspection agency.

If the police forensic unit provides services to both impartial third parties and its own parent organization then it would be a Type C inspection agency and must meet all of the requirements for Type C. A Type C inspection agency must have safeguards within the organization to ensure adequate segregation of responsibilities and accountabilities in the provision of its services. Type C inspection agency is similar to a Type B but may supply inspection services to other parties outside its parent organization.

The criteria for the independence of an inspection body are:

- The crime scene investigation unit is an independent legal identity or is part of legally identifiable organization. However, it always remains completely independent of the affected parties in specific cases or abstains or withdraws from the activities.
- Procedures and policies on maintaining complete independence at all times (for example in relation to personnel, finances, decisions or the standard operating procedures) are defined and adhered to.
- Individual employees responsible for conducting crime scenes have no direct
- Relationship (private or professional) with the case to be dealt with, the persons involved or with the evidence secured.
- The services (inspections) of the crime scene investigation unit are made available to all interested legal bodies within the scope of the legal process.

In addition, ISO/IEC 17020 describes independence criteria for Type A, Type B, and Type C inspection agencies.

In Summary, a police organization that supplies services to only other agencies or identities is a Type A. A police organization that supplies services to only its own organization is a Type B. A police organization that supplies services to both its own organization and to outside agencies is a Type C.

12.5 Organization and Management

The crime scene investigation unit shall maintain an up-to-date organizational chart clearly showing the functions and lines of authority for staff within the crime scene investigation unit and the relationship, if any, between the inspection function and other activities of the organization. The position of the technical manager and quality manager should be clearly shown in the chart.

Different persons may take up the role of technical manager for different activities. Where more than one person acts as the technical manager, the specific responsibilities of each person must be defined and documented.

The crime scene investigation unit shall be able to demonstrate that it is organized in such a way that the work of the staff performing inspections is supervised by personnel who are familiar with the objectives of the inspections, the inspection methods and procedures being used and the assessments of the inspection results. The extent, nature and level of supervision exercised should take into account the qualifications, experience, training and technical knowledge of the inspection staff and the inspections being undertaken.

The organization shall appoint a member of staff as Health and Safety Manager, however named, who is responsible for maintaining the Health and Safety of the unit.

12.6 Quality System

The position of the quality manager (however named) shall be clearly shown in the organizational chart referenced in section 12.5 above. The quality manager shall be free from any influences or conflicts of interest that may affect the quality of his/her work.

Internal Quality audits are normally planned and organized by the quality manager and carried out in accordance with a pre-determined schedule at least once per year that encompasses all aspects of the quality system, including the performance of inspections. The scopes, dates and the detailed scheduling of audits must be planned and conducted in accordance with a documented procedure.

The crime scene investigation unit shall have policies and procedures for feedback and corrective actions.

The policy and procedures for feedback and corrective action shall ensure that:

- the responsibilities and authorities for the management of nonconforming work are designated and actions (including halting of work and withholding of scene of crime reports, as necessary) are defined and taken when nonconforming work is identified;
- an evaluation of the significance of the nonconforming work is made;
- correction is taken immediately, together with any decision about the
- acceptability of the nonconforming work;
- where necessary, the client is notified and work is recalled;
- the responsibility for authorizing the resumption of work is defined.

Where the evaluation indicates that the nonconforming work could recur or that there is doubt about the compliance of the crime scene investigation unit's operations with its own policies and procedures, corrective action procedures shall be followed.

The crime scene investigation unit shall establish policies and procedures and if necessary designate appropriate persons for implementing corrective action when nonconforming work has been identified. A problem with the quality system or with the technical operations of the crime scene investigation unit may be identified through a variety of activities, such as control of nonconforming work, internal or external audits, management reviews, feedback from clients and from observations made by investigators. It is recommended that the procedure for corrective action starts with an investigation to determine the root cause of the problem.

Root Cause analysis is the key and sometimes the most difficult part in the corrective action procedure. Often the root cause is not obvious and thus a careful analysis of all potential causes of the problem is required.

Management reviews shall be planned and carried out in accordance with a pre-determined schedule at least once per year to allow for the continued suitability and effectiveness of the quality system and shall take into account any relevant information including:

- Reports from supervisory or managerial staff
- Suitability of policies and procedures

- Corrective actions
- Internal audits
- External audits
- Complaints
- Feedback from customers
- Identified modifications for quality system
- Training needs for new and existing staff
- Adequacy of current human and equipment resources

12.7 Personnel

The crime scene investigation unit shall have a sufficient number of competent personnel having the education, training, technical knowledge, skills and experience necessary for handling the category, range and volume of the work performed.

The quality system shall define and document each role in crime scene investigation with specific requirements for qualifications, training, experience and knowledge for the tasks they carry out. The competence of temporary personnel used is the responsibility of the crime scene investigation unit. Each member of staff shall be aware of their role and limitation. This information shall be given in writing to avoid misunderstanding.

“Relevant knowledge of the technology” refers to an understanding of the technology behind the crime (e.g. firearms) and the technology used to investigate the crime (e.g. fingerprints, DNA, blood pattern analysis).

Understanding the ‘significance of deviations’ requires that crime scene investigation personnel recognize the significance of the unusual at a crime scene, for example a staged burglary.

There shall be an up-to-date documented training program in place that includes competence assessment with defined criteria to declare someone as competent. There shall be maintained an up-to-date record of the training that each member of staff has received. These records shall include academic and professional qualifications, external or internal courses attended and relevant training (and retraining, where necessary) received while working in the forensic unit. The term ‘competent’ is defined as having the requisite knowledge, skills and ability to perform the task. Having qualifications, training and experience does not guarantee practical competence in crime scene investigation or sound professional judgment. Therefore, management must be able to demonstrate that the personnel are competent by carrying out assessments of their knowledge and skills against defined criteria. The training shall follow a defined program and the assessment of competence shall be consistently applied to all. Acceptance criteria shall be assigned to the relevant roles to determine competence. Where necessary, the training program shall include expert witness testimony.

The crime scene investigation unit policy shall also include procedures for retraining and maintenance of skills and expertise including updates with the latest developments in the area of crime scene investigation.

Identification of training needs for each person should normally take place at least once per year. This review should result in documented plans for further training or a statement that no further training is required for the individual at present.

The crime scene investigation unit shall have clear statements of the competencies required for all jobs and records shall be maintained to demonstrate that all staff is competent for the jobs they are asked to carry out. The purpose of these records is to demonstrate the competency of each member of the staff to perform specific inspection tasks and, where relevant, to use specific equipment and procedures.

All members of staff, whose work influences the result of the crime scene investigation, shall have an up-to-date record of training, development and competence evaluation. Competence records shall be documented and should be sufficiently detailed to provide evidence that staff have been properly trained and that their ability to perform their tasks has been formally assessed.

A Code of Conduct for Crime Scene Investigations shall be introduced that includes work ethics, confidentiality, impartiality, personal safety, relationship with other members of the crime scene investigation team and any other issues needed to ensure appropriate conduct of crime scene investigation staff.

All personnel will need records of training and competency. There is no grandfathering but records of a history of successful completion of proficiency testing can be used to demonstrate competency. A certification as a crime scene investigator by International Association for Identification (IAI) or other nationally recognized organizations can be proof of meeting the training requirements.

12.8 Proficiency Testing

An effective means for a crime scene investigation unit to monitor its performance, both against its own requirements and against the performance of its peers, is to take part in proficiency testing programs. When participating in proficiency testing programs, the crime scene investigation unit's own documented procedures shall be used. Performance in the programs shall be reviewed regularly and where necessary, corrective action shall be taken.

Agencies that perform screening tests or other field tests as part of their crime scene investigation must maintain a proficiency testing program for those tests. A suitable proficiency test is one that meets the requirements of ISO/IEC 17043 or is accepted by FQS.

Alternative approaches are needed for the evaluation of an agency's performance in crime scene investigation activities that are not tests and for which test materials do not exist. An acceptable method is the observation of a crime scene investigation by a qualified individual who is not part of the investigation. The agency shall provide the observer with a protocol for this evaluation process, such as a checklist related to the agency's procedures.

Assessors shall evaluate the adequacy of the proficiency test performance in the light of the agency's overall quality assurance procedures and performance. These shall include internal

procedures for competency monitoring and the effectiveness of corrective action policies and procedures.

12.9 Facilities and Equipment

The term “facilities” in ISO/IEC 17020 refers to the means by which the integrity of the evidence and the equipment used can be protected during the investigation, for example tents, storage area, mobile office, mobile laboratory, etc.

The term “equipment” in ISO/IEC 17020 refers to all tools and instruments used for the investigation of the scene of crime that need to be monitored and controlled in order to protect the integrity of the scene and the items. Equipment includes reagents and other reference materials.

The crime scene investigation unit must monitor and record the environmental conditions with calibrated equipment, if applicable and note if conditions are outside the limits within which investigation can be performed.

Access to the operational area of the forensic police unit shall be controlled and limited. Visitors shall not have unrestricted access to the operational areas of the facilities. A record shall be retained of all visitors to the operational areas of the facility.

Evidence storage areas shall be secure to prevent theft or interference and there shall be limited, controlled access. The storage conditions shall be such as to prevent loss, deterioration and contamination and to maintain the integrity and identity of the evidence.

The term “rules” in ISO/IEC 17020 refers the crime scene investigation unit’s need to have written policies and procedures defining the conditions under which equipment and facilities can be used and the persons allowed to use them. The crime scene investigation unit needs to have policies for the use of disposable equipment to ensure that such equipment does not contribute to contamination through misuse or re-use.

The term “access” in ISO/IEC 17020 refers to the permission to use specific facilities and equipment. It also refers to prohibiting unauthorized persons, e.g. third parties, to use equipment or enter scene of crime.

Use of facilities and equipment by unauthorized persons shall not be permitted. If any item is found to have left the crime scene investigation unit’s direct control, measures must be taken to confirm its continuing suitability before its return to use. Typical measures would include visual inspection, functional and performance checks and/or re-calibration.

Equipment also includes reagents for example, luminol, hemastix, crystal violet, etc. Another example of equipment is digital cameras which should be checked for suitability with a test chart to show correct color response and resolution.

All equipment which can influence the quality of the investigation results need to be either labeled or in other ways identified. Unique identification of items of equipment is important even when the organization has only one example of a particular item. This enables tracking when items are replaced for whatever reason.

Critical reagents are those reagents that result in damage to evidence in normal use and influence the quality of the examination. All critical reagents should be tested for their reliability.

The quality of standard materials and reagents shall be adequate for the procedure used. Lot/batch numbers of standard materials and critical reagents shall be recorded. All critical reagents shall be tested for their reliability. Standard materials and reagents shall be labeled with:

1. name;
2. concentration, where appropriate;
3. preparation date and or expiry date;
4. identity of preparer;
5. storage conditions, if relevant;
6. hazard warning, where necessary.

Maintenance applies to all equipment which influences the quality of the investigation results. Maintenance also includes checking the function of equipment to make sure it works properly.

All equipment used for measurements and tests, where the results of such measurements and tests have a significant influence on the results and interpretation of the scene of crime investigation shall be traceably calibrated to a national or international standards where possible.

The crime scene investigation unit shall be able to ensure the accuracy of their length measuring devices. The steps taken to ensure this accuracy will depend upon the significance that the measurement will have on the reported observations and results. Devices used for measuring relatively small distances, e.g., less than four (4) feet, may require traceability to a NIST certified ruler. The accuracy of devices used to measure distances over four (4) feet could be established by running a set of experiments. There is no SI unit for angle of measurement.

Where equipment not under the direct control of the crime scene investigation service is used, the crime scene investigation service shall verify that the equipment meets all relevant requirements of ISO/IEC 17020 before using it for investigations. The verification procedure shall be documented and verification records shall be kept.

Where the calibrations are performed in-house, traceability to national standards should be assured by using reference standards of measurement for which the inspection agency holds a current calibration certificate or equivalent from a competent body (see also FQS Document 11, section 7.3). The certificate or equivalent should detail an uncertainty of measurement that is appropriate for the equipment that is to be calibrated from the reference standard.

Some examples of equipment which needs calibration are as follows:

- Thermometers
- Sound meter
- 3D laser scanner
- Caliper
- Gas Detector
- Photo ionization detector
- GPS for site identification/logging
- Laser telemeter, rulers, micrometers, and measurement devices for recording distances and dimensions
- Data-loggers used for recording weather information
- Scales and weighing instruments

Where the calibrations are performed in-house, traceability to national standards should be assured by using reference standards of measurement for which the crime scene investigation unit holds a current calibration certificate or equivalent from a competent body (see also FQS Document 11, section 7.3). The certificate or equivalent should detail an uncertainty of measurement that is appropriate for the equipment that is to be calibrated from the reference standard.

Reference materials in terms of scene of crime investigation refer to quality control materials that are known and traceable to their source and are used for checking the correct functioning of equipment and reagents.

The requirements on defective equipment also apply to reagents. These requirements are relevant only when the equipment and reagents could influence the outcome of the investigation.

Records shall be maintained of each item of equipment and its software significant to the investigations performed. The records should include at least the following:

- identity of the item of equipment and its software;
- the manufacturer's name, type identification, and serial number or other unique identification;
- checks that equipment complies with the specification;
- the current location, where appropriate;
- the manufacturer's instructions, if available, or reference to their location;
- dates, results and copies of reports and certificates of all calibrations, adjustments, acceptance criteria,
- and the due date of next calibration;
- maintenance plan, where appropriate, and maintenance carried out to date;
- any damage, malfunction, modification or repair to the equipment.

12.10 Inspection Methods and Procedures

The crime scene investigation unit shall have protocols that contain guidelines on the processing activities conducted at a crime scene and the order in which they should be performed. The crime scene investigation unit may have varying protocols depending upon the nature of the offense being investigated. The processes may be based on nationally and internationally accepted procedures for work. In some cases, in-house procedures may be used.

Where possible, nationally or internationally recognized methods or procedures that have been validated and published by authoritative bodies such as ASTM or relevant SWGs should be used. Such methods may be implemented following performance checks that confirm that the forensic unit is able to meet the performance specified in the published method and that they are for purpose. Records of the performance checks shall be kept.

If there are no suitable methods or procedures that have been validated and published by an authoritative body, then the forensic unit should use procedures or methods that have been published in peer reviewed journals are generally accepted in the field, and that have been demonstrated as fit for purpose by the crime scene investigation unit. Records demonstrating that they are fit for purpose shall be kept by the forensic unit.

Methods or procedures that do not fall into either of the above categories, or modified versions of these methods need to be demonstrated as fit for purpose by in-house validation.¹⁰ These are referred to in this document as "non standard methods (procedures)". In all cases, the crime scene investigation unit would have to make sure that the standard or non-standard procedure can be appropriately used by its personnel.

There shall be written protocols for chemical screening tests or other tests performed in the office or the field. Non-standard test procedures must be validated by the agency. Positive and negative controls must be used to verify the correct functioning of field test kits or other reagents prior to their use on evidence samples at a crime scene. When conducting testing, care shall be taken to avoid sample consumption, degradation, or contamination that would compromise the integrity of samples for subsequent testing.

All forensic inspection activities (e.g. crime scene photography, measurement and sketching, evidence identification and collection) shall be fully documented including procedures for quality control, where appropriate, and guidelines for the interpretation and reporting of results.

When a forensic unit employs physical, chemical and dimensional testing activities as part of the investigation process to assist in the identification, visualization and collection of evidence, these activities shall be monitored by operating quality control schemes which are appropriate to the type and frequency of the process undertaken by an organization.

It is recognized that forensic inspection involves the use of chemical processes and physical, chemical and dimensional tests to aid in the discovery of evidentiary information or evidentiary items (i.e. use of cyanoacrylate or scene measurement). All such activities conducted while performing forensic inspection shall be fully validated before being used on casework.

¹⁰ In the case of well-established methods and procedures, historical and on-going records of successful completion of proficiency tests using the methods and procedures can be used to demonstrate fit for purpose.

Validation of forensic inspection support activities shall follow a written procedure.

Methods may be validated by comparison with other established methods using certified reference materials (where available) or materials of known characteristics.¹¹ Validation shall include consideration of Uncertainty of Measurement.

The crime scene investigation activities for which uncertainty of measurement may be of significance are those that involve quantitative measurements. This includes, but is not necessarily limited to, tire tracks and footwear (length and width), blood spatter (angles derived from length and width measurements), accident reconstruction (skid mark measurement and diagramming), crime scene plotting (distance/length), tool mark documentation (size and position), and bullet hole documentation (size and position). Section 7 of Document 11 shall be followed.

The crime scene investigation unit shall provide investigators with safe working practices including all necessary instructions regarding safety precautions. Investigators shall adhere to the safety measures listed therein and observe the advice and the prohibited actions. In this context, they shall use the personal protective clothing with which they are provided and protect both themselves and their environment during their work at the crime scene.

12.11 Handling Inspection Samples and Items

Crime scene investigation protocols and training programs shall describe how crime scene investigators should approach a crime scene, including guidance for the identification and collection of probative and representative samples.

The crime scene investigation unit shall have a policy and documented procedures which describe, where applicable, the collection, packaging, transportation, handling and disposition of collected or submitted items; measures to be taken to prevent loss, contamination, cross contamination and deleterious changes; and to secure exhibits which must be left unattended.

The exhibits collected during evidence recovery processes must be clearly and uniquely identified. Where applicable, exhibits collected and the locations at which they were found must be documented using suitable procedures (e.g. measurements, plans, diagrams, photography, etc.) so that the items can be identified at all times and the locations at which they were found can be determined. The identity for exhibits should correlate with the investigation report.

Appropriate precautions are required when dealing with potentially dangerous substances and items.

Abnormalities or irregularities at the crime scene which are shown to or immediately identified by the investigation team should be recorded and clarified before the investigation itself commences. These could influence the subsequent direction of the investigation or require an

¹¹ It is recommended that accredited reference material producers are used, where available, that have been accredited to ISO Guide 34.

on-site procedure which differs from the standard quality system procedures. If doubts arise as to whether evidence can be properly recovered in the conditions encountered, before the investigation activities commence, supervisory or management are consulted about whether and how the available resources should be used. Additional or 'specialist' investigators or technical resources for evidence recovery sometimes may need to be requested.

Before exhibits are recovered, the investigation team should consider the conditions encountered on-site to ensure that the exhibits can be recovered and documented with as little disruption as possible. Where necessary and depending on the technical options, the exhibits are prepared for the sample taking process. "Preparation of items" in the case of crime scene investigation may refer to "decisions on the sequence in which to take samples", or discussions with peers on the order in which to do things.

For legal purposes, the crime scene investigation unit should be able to demonstrate that the exhibits examined and reported on were those recovered at the scene of crime, in order to guarantee the integrity of the exhibit. A 'chain of custody' record shall be maintained from the receipt of items/exhibits which details each person or body who takes possession of an item or alternatively the location of that item (e.g. if in storage).

There shall be documented procedures which describe the measures taken to secure exhibits in the process of being examined which must be left unattended.

Investigation teams shall always take care to ensure that the identified exhibits taken for further examination in a special laboratory are recovered, stored and transported without contamination.

12.12 Records

Case records may include notes, photographs, latent print lift cards, etc. A crime scene unit is required to have a program for technical review of case records and reports. A technical review is an evaluation of the sufficiency of a case record with regard to the tests that were conducted and the observations and conclusions contained in the report. The number of case records reviewed and the depth of the review process shall be sufficient to ensure that the agency's procedures are being followed and that the records provide support for the observations and conclusions in the reports.

The crime scene investigation unit shall have documented procedures to ensure that it maintains a coordinated record relating to each case under investigation. The information that is to be included in case records shall be documented and may include records of telephone conversations, evidence receipts, descriptions of evidence packaging and seals, subpoenas, records of observations and test/examination results, reference to procedures used, diagrams, print-outs, auto radiographs, photographs, etc. In general, the records required to support conclusions shall be such that in the absence of the investigator/examiner, another competent investigator/examiner could evaluate what had been performed and interpret the information.

Where appropriate, observations shall be preserved by photography or electronic scanning (e.g. scene photographs, electrostatic lifts). Photocopies, tracings or hand drawn facsimiles may also

be suitable (e.g. scene sketches). When an inspection eliminates a possible sequence of events based on a lack of conformity between the scene and/or evidence and the proposed sequence of events, the reason(s) shall be documented in the case record. Calculations and data transfers which do not form part of a validated electronic process shall be checked, preferably by a second qualified person. The case record shall include an indication that such checks have been carried out and by whom. (e.g. units of measurement conversions, angle calculations, statistical analyses)

Examination records shall be paginated using a page numbering system which indicates the total number of pages and end of document. Each page of every document in the case record shall be traceable to the examiner and where appropriate, to a uniquely identified case or exhibit. It shall be clear from the case record who has performed all stages of the analysis/examination and when each stage of the analysis/examination was performed. Bound non-loose leaflet notebooks that contain information from only one examiner are not required to have every page marked.

Under limited circumstances, such as recording rough sketches at a crime scene, it may be appropriate to use a non-permanent, weather-resistant medium such as pencil. It is expected that the process of creating rough sketches could involve the erasure and redrawing of pencil lines. This does not constitute “mistakes” in note-taking. When a rough sketch and/or other pencil notes have been completed, the notes must be transferred to a tamper-proof final version for retention in the permanent case record, for example, by scanning the notes written in pencil.

Calculations and data transfers which do not form part of a validated electronic process shall be checked, preferably by a second person. The case record shall include an indication that such checks have been carried out and by whom.

Where appropriate, observations and test results shall be preserved by photography or electronic scanning (e.g. physical matches). Photocopies, tracings or hand-drawn facsimiles may also be suitable.

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

The crime scene investigation unit shall have documented policies and procedures for the review of case records, including test reports.

The type and amount of information required in the report may depend on the legal system. However, in all cases, there should be a clear indication of what facts are and what are interpretations, assumptions or opinions.

The report should contain all the results of examinations and observations, including visual evidence, as well as the findings and, where appropriate and admissible, conclusions arrived at from these results.

The reports issued by the investigation team should be complete and should contain the information on which an interpretation might be made.

In all cases it must be possible to identify the person accepting responsibility for the verification and release of the inspection report.

Amendments to a report after issue shall be made only in the form of a further document which includes the statement: "Supplement to Report XYZ."

12.13 Subcontracting

The organization shall be able to complete the examination of crime scenes that it undertakes to perform. Subcontractors can be used in various circumstances such as:

1. A large incident / scene such as a terrorist attack, plane crash, multiple murder.
2. The scene requires specific expertise that the organization does not currently hold, for example, entomology, anthropology or botany.

The crime scene investigation unit shall provide appropriate evidence of the subcontracted body's competence, such as accreditation certificate or records of evaluation performed by qualified personnel according to appropriate procedures.

A crime scene investigation unit may use the services of an outside party to perform aspects of crime scene investigation, but the crime scene investigation unit must exercise caution in how the results are reported so that accreditation is not incorrectly inferred for the tests in question.

The requirements of the International Standard regarding subcontractors apply when work is subcontracted for activities that fall within the crime scene investigation unit's scope of accreditation and the subcontractor's results are included in the agency's own report. However, a crime scene investigation unit is not responsible for the content of test reports issued directly by the outside party.

The crime scene investigation unit should ensure the competence of organizations or individuals who are retained by the agency to perform crime scene investigation work that falls outside of the crime scene investigation unit's scope of accreditation, e.g., forensic entomology; however, the crime scene investigation unit is not responsible for the outside party's work. When a crime scene investigation unit includes the outside party's test results within its own report, the report must clearly indicate that the results do not fall under the crime scene investigation unit's scope of accreditation.

12.14 Confidentiality

The crime scene investigation unit shall have a policy as to any legal requirements of the agency as it relates to confidentiality. The crime scene investigation unit shall have a policy on the confidentiality of the reports.

13.0 FRICTION RIDGE EXAMINATIONS SUPPLEMENTAL REQUIREMENTS

13.1 Introduction

This document is intended to provide amplification for the application of ISO/IEC 17020 to friction ridge examinations. Within this document, the word “unit” will refer to latent and/or tenprint units. It was developed by a Technical Advisory Committee (TAC) consisting of twelve (12) subject matter experts and one (1) representative of ANSI-ASQ National Accreditation Board/FQS.

The TAC developed the document in the context of a program primarily directed to law enforcement agencies (“agency”) whose police forensic units perform friction ridge examinations, either as their sole responsibility or as part of a police science unit with broader testing responsibilities.

Testing performed by a latent or tenprint unit (inspection agency) may fall into one of two categories: namely functional or analytical. Functional testing, for example, comparisons, forms a normal part of the inspection activities of a latent print or tenprint unit and is therefore within the scope of ISO/IEC 17020. Analytical testing laboratories, for example, those conducting the analysis of controlled substances or DNA profiling, are covered by ISO/IEC 17025. This includes analytical testing conducted in the field. A latent print unit that performs testing on friction ridge residue for chemical composition or the presence DNA is an analytical testing process and would be within the scope of ISO/IEC 17025.

For the purposes of this document, forensic inspection is defined as the examination of an item or location and, on the basis of professional judgment, the determination of conformity with proposed events or known conditions. The inspection agency will have to demonstrate that it has the necessary competence to perform the tasks involved. For the purposes of accreditation, measurements that are used to assist in documenting the inspected location or item and tests or processes that are used to assist in the identification, visualization and collection of forensic evidence may be listed on the agency’s Scope of Accreditation.

When using the ISO/IEC 17020 standard with this FQS field specific criteria document, the terms “inspector” and “inspection”, are equivalent to “examiner” and “examination” respectively.

Any functional testing conducted by the friction ridge examiner, such as visualization, shall be carried out according to documented procedures and ISO/IEC 17020 is intended to cover these procedures provided that the relevant clauses of ISO/IEC 17025 are met. Traceability and measurement uncertainty are examples of relevant clauses. In these cases the agency must comply with Section 7 of Document 11.

It is recognized that there is considerable overlap in functional and analytical testing in forensic units. Agencies are encouraged to pursue the benefits of accreditation, but should consider carefully which international standard best fits their needs

13.2 References

ISO/IEC 17020 General criteria for the operation of various types of bodies performing inspection (or future versions thereof)

ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories (or future versions thereof)

EA-5/03 Guidance for the implementation of ISO/IEC 17020 in the field of crime scene investigation (or future versions thereof)

ILAC G-19 Guidelines for forensic science laboratories (or future versions thereof)

IAF/ILAC-A4, Guidance on the Application of ISO/IEC 17020 (or future versions thereof)

13.3. Definitions

Client or Customer: The client or customer is the body asking the unit to perform comparisons of friction ridge detail.

Evidence or Exhibit: An item or sample recovered as part of an investigation. This includes everything recovered from a crime scene including swabs, whole objects, debris, etc, and derived items such as casts of footprints and finger mark lifts. This can also include tenprint exemplars.

Forensic Unit: A forensic unit is a legal entity or a defined part of a legal entity that performs any part of the forensic process.

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

Inspection Body: Inspection body as used in this document is a forensic unit or agency such as a latent print and/or tenprint units using professional judgment to examine (inspect) evidence with the aim to contribute to determine if the comparison between items meets certain criteria (for example, comparison between prints leads to individualization).

Examiner: An individual who conducts and/or directs the inspection of latent or tenprints, performs comparisons, interprets data, reaches conclusions and/or testifies in court.¹²

Forensic Inspection: Forensic inspection is the examination of a person, item or location and on the basis of professional judgment, the determination of their conformity with proposed events or known conditions.

¹² The definitions of investigator and examiner can be very close. Both, if trained, can perform friction ridge examinations and testify. Typically, however, the examiner is the one who performs comparisons, interprets data, and reaches conclusions.

Equipment: Equipment refers to all tools and instruments used as part of the forensic process which need to be monitored and controlled. This also includes reagents and personal protective equipment.

13.4 Independence, Impartiality and Integrity

13.4.1 Policies and procedures

The organization must have clear and documented policies and procedures regarding the pressures on individuals that may affect their judgment. In addition, the organization must have a policy and procedure that shall be followed if a circumstance is discovered where there is a possibility that an individual's judgment has been compromised.

13.4.2 Inspection Agency Classification

ISO/IEC classifies inspection agencies as type A, B or C, depending on the degree of independence of the inspection agency from its client or customer. In terms of tasks and structure, latent print and/or tenprint units are essentially inspection agencies which provide services as impartial third parties.

A latent print examination and/or tenprint unit that examines evidence that is not connected to the parent organization would meet the requirements of a Type A inspection agency, that is, its organization and management are independent of those of the customer or other interested parties. However, due to the nature of the forensic evidence it is not always clear before the examination has been finished and the case resolved, whether the persons involved in the crime do actually have a relationship, for example, relatives to the employees of the unit. The unit must therefore have policies and procedures for dealing with such situations and have measures to ensure that its impartiality can be defended if challenged.

Type B inspection agency is a separate and identifiable part of an organization that has been established to supply inspection services to only its parent organization. Unless an agency's unit only performs services on evidence recovered from within its parent organization it will not be a Type B inspection agency.

If the unit provides services to both impartial third parties and its own parent organization then it would be a Type C inspection agency and must meet all of the requirements for Type C. A Type C inspection agency must have safeguards within the organization to ensure adequate segregation of responsibilities and accountabilities in the provision of its services. Type C inspection agency is similar to a Type B but may supply inspection services to other parties outside its parent organization.

The criteria for the independence of an inspection body are:

- The unit is an independent legal identity or is part of legally identifiable organization. However, it always remains completely independent of the affected parties in specific cases or abstains or withdraws from the activities.

- Procedures and policies on maintaining complete independence at all times (for example, in relation to personnel, finances, decisions or the standard operating procedures) are defined and adhered to.
- Individual employees responsible for conducting friction ridge examinations have no direct relationship (private or professional) with the case to be dealt with, the persons involved, or with the evidence secured.
- The services (inspections) of the unit are made available to all interested legal bodies within the scope of the legal process.

In addition, ISO/IEC 17020 describes independence criteria for Type A, Type B, and Type C inspection agencies.

In summary, a police organization that supplies services to only other agencies or identities is a Type A. A police organization that supplies services to only its own organization is a Type B. A police organization that supplies services to both its own organization and to outside agencies is a Type C.

13.5 Organization and Management

The unit shall maintain an up-to-date organizational chart clearly showing the functions and lines of authority for staff within the unit(s) and the relationship, if any, between the inspection function and other activities of the organization. The position of the technical manager and quality manager should be clearly shown in the chart.

Different persons may take up the role of technical manager for different activities. Where more than one person acts as the technical manager, the specific responsibilities of each person must be defined and documented.

The unit shall be able to demonstrate that it is organized in such a way that the work of the staff performing inspections is supervised by personnel who are familiar with the objectives of the inspections, the inspection methods and procedures being used, and the assessments of the inspection results. The extent, nature and level of supervision exercised should take into account the qualifications, experience, training and technical knowledge of the inspection staff and the inspections being undertaken.

The organization shall appoint a member of staff as Health and Safety Manager, however named, who is responsible for maintaining the health and safety of the unit.

13.6 Quality System

The position of the quality manager (however named) shall be clearly shown in the organizational chart referenced in 13.5 above. The quality manager shall be free from any influences or conflicts of interest that may affect the quality of his/her work.

Internal Quality audits are normally planned and organized by the quality manager and carried out in accordance with a pre-determined schedule at least once per year that encompasses all

aspects of the quality system, including the performance of inspections. The scopes, dates and the detailed scheduling of audits must be planned and conducted in accordance with a documented procedure.

The unit shall have policies and procedures for feedback and corrective actions. The policy and procedures for feedback and corrective action shall ensure that:

- responsibilities and authorities for the management of nonconforming work are designated and actions (including halting of work and withholding of reports, as necessary) are defined and taken when nonconforming work is identified;
- an evaluation of the significance of the nonconforming work is made;
- correction is taken immediately, together with any decision about the acceptability of the nonconforming work;
- where necessary, the client is notified and work is recalled;
- the responsibility for authorizing the resumption of work is defined.

Where the evaluation indicates that the nonconforming work could recur or that there is doubt about the compliance of the unit's operations with its own policies and procedures, corrective action procedures shall be followed.

The unit shall establish policies and procedures and if necessary designate appropriate persons for implementing corrective action when nonconforming work has been identified. A problem with the quality system or with the technical operations of the unit may be identified through a variety of activities, such as control of nonconforming work, internal or external audits, management reviews, feedback from clients and from observations made by examiners. It is recommended that the procedure for corrective action start with an investigation to determine the root cause of the problem.

Root Cause analysis is the key and sometimes the most difficult part in the corrective action procedure. Often the root cause is not obvious and thus a careful analysis of all potential causes of the problem is required.

Management reviews shall be planned and carried out in accordance with a pre-determined schedule at least once per year to allow for the continued suitability and effectiveness of the quality system and shall take into account of any relevant information including:

- Reports from supervisory or managerial staff
- Suitability of policies and procedures
- Corrective actions
- Internal audits
- External audits
- Complaints
- Feedback from customers
- Identified modifications for quality system
- Training needs for new and existing staff
- Adequacy of current human and equipment resources

A pre-determined schedule is defined as a schedule that at least designates the month of the scheduled function.

13.7 Personnel

The unit shall have a sufficient number of competent personnel having the education, training, technical knowledge, skills and experience necessary for handling the category, range and volume of the work performed.

The quality system shall define and document each role in friction ridge examinations with specific requirements for qualifications, training, experience and knowledge for the tasks they carry out. The competence of temporary personnel used is the responsibility of the unit. Each member of staff shall be aware of their role and limitation. This information shall be given in writing to avoid misunderstanding.

There shall be an up-to-date documented training program in place that includes competence assessment with defined criteria to declare someone as competent. There shall be maintained an up-to-date record of the training that each member of staff has received. These records shall include academic and professional qualifications, external or internal courses attended and relevant training (and retraining, where necessary) received. The term 'competent' is defined as having the requisite knowledge, skills and ability to perform the task. Having qualifications, training and experience does not guarantee practical competence in latent print or tenprint examination or sound professional judgment. Therefore, management must be able to demonstrate that the personnel are competent by carrying out assessments of their knowledge and skills against defined criteria. The training shall follow a defined program and the assessment of competence shall be consistently applied to all. Acceptance criteria shall be assigned to the relevant roles to determine competence. Where necessary, the training program shall include expert witness testimony.

The unit's policy shall also include procedures for retraining and maintenance of skills and expertise including updates with the latest developments in the area of friction ridge examinations.

Identification of training needs for each person should normally take place at least once per year. This review should result in documented plans for further training or a statement that no further training is required for the individual at present.

The unit shall have clear statements of the competencies required for all jobs and records shall be maintained to demonstrate that all staff is competent for the jobs they are asked to carry out. The purpose of these records is to demonstrate the competency of each member of the staff to perform specific inspection tasks and, where relevant, to use specific equipment and procedures.

All members of staff, whose work influences the result of the friction ridge examination, shall have an up-to-date record of training, development and competence evaluation. Competence records shall be documented and should be sufficiently detailed to provide objective proof that

staff have been properly trained and that their ability to perform their tasks has been formally assessed.

A Code of Conduct for Friction Ridge Examiners shall be introduced that includes work ethics, confidentiality, impartiality, personal safety, relationship with other members of the latent print and tenprint unit and any other issues needed to ensure appropriate conduct of the staff.

All personnel will need records of training and competency. There is no grandfathering but records of a history of successful completion of proficiency testing can be used to demonstrate competency. A certification as a latent print or tenprint examiner by the International Association for Identification (IAI) or other nationally recognized organizations can be proof of meeting the training requirements.

13.8 Proficiency Testing

An effective means for a latent print and/or tenprint units to monitor its performance, both against its own requirements and against the performance of its peers, is to take part in proficiency testing programs. When participating in proficiency testing programs, the unit's own documented procedures shall be used. Performance in the programs shall be reviewed regularly and where necessary, corrective action shall be taken.

Agencies that perform chemical or physical screening tests or other tests as part of their latent print examinations must maintain a proficiency testing program for those tests. A suitable proficiency test is one that meets the requirements of ISO/IEC 17043 or is accepted by FQS.

Alternative approaches are needed for the evaluation of an agency's performance in friction ridge examination activities that are not tests and for which test materials do not exist (e.g. the mixing of reagents). Assessors shall evaluate the adequacy of the proficiency test performance in light of the agency's overall quality assurance procedures and performance. These shall include internal procedures for competency monitoring and the effectiveness of corrective action policies and procedures.

13.9 Facilities and Equipment

The term "facilities" in ISO/IEC 17020 refers to the means by which the integrity of the evidence and the equipment used can be protected during the examination, for, evidence storage lockers, workspace, laboratory space, etc.

The term "equipment" in ISO/IEC 17020 refers to all tools and instruments used for friction ridge examinations that need to be monitored and controlled. Equipment includes reagents and other reference materials.

The unit must monitor and record the environmental conditions, if applicable, and note if conditions are outside the limits within which the examination can be performed. Access to the operational area of the forensic police unit shall be controlled and limited. Visitors shall not

have unrestricted access to the operational areas of the facilities. A record shall be retained of all visitors to the operational areas of the facility.

Evidence storage areas shall be secure to prevent theft or interference and there shall be limited, controlled access. The storage conditions shall be such as to prevent loss, deterioration and contamination and to maintain the integrity and identity of the evidence.

The term “rules” in ISO/IEC 17020 refers to the unit’s need to have written policies and procedures defining the conditions under which equipment and facilities can be used and the persons allowed to use them. The unit needs to have policies for the use of disposable equipment to ensure that such equipment does not contribute to contamination through misuse or re-use.

Use of facilities and equipment by unauthorized persons shall not be permitted. If any item is found to have left the unit’s direct control, measures must be taken to confirm its continuing suitability before its return to use. Typical measures would include visual inspection, functional and performance checks and/or re- calibration.

Another example of equipment is digital cameras that should be checked for suitability with a test chart to show correct color response and resolution. Equipment also includes reagents used in the visualization of latent prints.

All equipment which can influence the quality of the comparison results needs to be either labeled or in other ways identified. Unique identification of items of equipment is important even when the organization has only one example of a particular item. This enables tracking when items are replaced for whatever reason.

Critical reagents are those reagents that can result in damage to evidence in normal use and influence the quality of the examination. A list of critical reagents must be maintained. The correct functioning of each reagent on the list must be confirmed with a control prior to its use on evidence.

The correct sequence of application of reagents in development of latent prints is essential. There must be a procedure that specifies the correct application sequence. The quality of standard materials and reagents shall be adequate for the procedure used. Lot/batch numbers of standard materials and critical reagents shall be recorded. All critical reagents shall be tested for their reliability. Standard materials and reagents shall be labeled with:

1. name;
2. concentration,

and where appropriate;

1. preparation date and or expiry date;
2. identity of preparer;
3. storage conditions, if relevant;
4. hazard warning, where necessary.

Maintenance applies to all equipment that influences the quality of the examination results. Maintenance also includes checking the function of equipment to make sure it works properly.

Where possible, all equipment used for measurements and tests, where the results of such measurements and tests have a significant influence on the results and interpretation of the latent print or tenprint examination, shall be traceably calibrated to a national or international standards. Such methods shall comply with the requirements of Section 7 of Document 11.

The requirements on defective equipment also apply to reagents. These requirements are relevant only when the equipment and reagents could influence the outcome of the investigation.

Records shall be maintained of each item of equipment and its software significant to the investigations performed. The records should include at least the following:

- identity of the item of equipment and its software;
- the manufacturer's name, type identification, and serial number or other unique identification;
- checks that equipment complies with the specification;
- the current location, where appropriate;
- the manufacturer's instructions, if available, or reference to their location,
- dates, results and copies of reports and certificates of all calibrations,
- adjustments, acceptance criteria,
- and the due date of next calibration;
- maintenance plan, where appropriate, and maintenance carried out to date;
- any damage, malfunction, modification or repair to the equipment.

13.10 Inspection Methods and Procedures

The unit shall have protocols that contain guidelines on the examination of items and the order in which they should be performed. The unit may have varying protocols depending upon the nature of the evidence being examined. The processes may be based on nationally and internationally accepted procedures for work. In some cases, in-house procedures may be used.

Where possible, nationally or internationally recognized methods or procedures that have been validated and published by authoritative bodies such as ASTM or relevant SWGs should be used. Such methods may be implemented following performance checks that confirm that the forensic unit is able to meet the performance specified in the published method and that they are fit for purpose. Records of the performance checks shall be kept.

If there are no suitable methods or procedures that have been validated and published by an authoritative body, then the unit should use procedures or methods that have been published in peer reviewed journals are generally accepted in the field, and that have been demonstrated as fit for purpose by the unit. Records demonstrating that they are fit for purpose shall be kept by the forensic unit.

Methods or procedures that do not fall into either of the above categories, or modified versions of these methods need to be demonstrated as fit for purpose by in-house validation.¹³ These are referred to in this document as “non standard methods (procedures).” In all cases, the unit would have to make sure that the standard or non-standard procedure can be appropriately used by its personnel.

There shall be written protocols for chemical screening tests or other tests performed in the office or the field. Non-standard test procedures must be validated by the agency. Positive and negative controls must be used to verify the correct functioning of test kits or other reagents prior to their use on evidence. When conducting testing, care shall be taken to avoid sample consumption, degradation, or contamination that would compromise the integrity of samples for subsequent testing.

It is recognized that forensic inspection involves the use of chemical processes and physical, chemical and dimensional tests to aid in the discovery of evidentiary information or evidentiary items (e.g. use of cyanoacrylate). All such activities conducted while performing forensic inspection shall be fully validated before being used on casework. Validation of forensic inspection activities shall follow a written procedure.

Methods may be validated by comparison with other established methods using certified reference materials (where available) or materials of known characteristics. Validation shall include consideration of Uncertainty of Measurement.¹⁴

The unit shall provide examiners with safe working practices including all necessary instructions regarding safety precautions. Examiners shall adhere to the safety measures listed therein and observe the advice and the prohibited actions. They shall use the personal protective clothing where applicable.

13.11. Handling Inspection Samples and Items

Protocols and training programs shall describe how friction ridge examiners should approach an examination. The unit shall have a policy and documented procedures which describe, where applicable, the collection, packaging, transportation, handling and disposition of collected or submitted items; measures to be taken to prevent loss, contamination, cross contamination and deleterious changes; and to secure exhibits which must be left unattended.

The exhibits collected during evidence recovery processes must be clearly and uniquely identified. Where applicable, exhibits collected and the locations at which they were found must be documented using suitable procedures (e.g. measurements, plans, diagrams, photography) so that the items can be identified at all times and the locations at which they were found can be determined. The identity for exhibits should correlate with the investigation report.

¹³ In the case of well-established methods and procedures, historical and on-going records of successful completion of proficiency tests using the methods and procedures can be used to demonstrate fit for purpose.

¹⁴ It is recommended that accredited reference material producers are used, where available, that have been accredited to ISO Guide 34.

Appropriate precautions are required when dealing with potentially dangerous substances and items.

A “chain of custody” record shall be maintained from the receipt of items/exhibits that details each person or body who takes possession of an item or alternatively the location of that item (e.g. if in storage).

There shall be documented procedures that describe the measures taken to secure exhibits in the process of being examined which must be left unattended.

13.12 Records

Case records may include notes, photographs, latent print lift cards, etc. At a minimum, there must be sufficient information available such that in the absence of the examiner, another competent examiner could evaluate the history of the evidence while in the custody of the examining unit and the examinations conducted.

Case records must contain either (1) a reproduction of the prints of a quality suitable for comparison or (2) the original evidence or (3) sufficient information to guide the reviewer in retrieving the original evidence. In this way a suitably qualified examiner would be able to evaluate the original work and verify that the procedures and conclusions arrived at are reasonable. If the case record contains the original evidence then it must be stored in a secure environment to ensure that the evidence is not damaged or lost.¹⁵

The unit is required to have a program for technical review of case records and reports. A technical review is an evaluation of the sufficiency of a case record with regard to the tests that were conducted and the observations and conclusions contained in the report. For latent print and ten print cases at least 10% of all case records must be reviewed for technical correctness. The technical review is an evaluation of the case record to ensure that there is an appropriate and sufficient basis for the scientific conclusions. All individuals who perform technical reviews on case records must have been previously qualified in the areas that the review is encompassing. The agency must demonstrate that the technical reviewer has a basis of knowledge that will allow him/her to ensure that the conclusions and supporting data are reasonable and within the constraints of scientific acceptance. The agency must describe the method used for demonstrating completion of each review, for example, by completion of a checklist.

For latent print examinations, all identifications are to be verified by a second latent examiner prior to issuing a report.

For tenprint units, policies and procedures must exist for the verification of non- computer generated identifications. For “lights-out” operations, the accuracy of the identifications must be periodically ensured.

¹⁵ In the case of chemical development processes where the original latent print may degrade and the comparison is made on the basis of photographs or other records of the developed image, the recorded images will be regarded as equivalent to the original.

There must be a procedure that describes how to deal with situations wherein the examiner does not agree with the conclusions of the original examiner. The resolution of the differing conclusions must be recorded in the case record. The annual Management Review must include all records that required a resolution to ensure that any appropriate preventive or corrective action is implemented.

The unit shall have documented policy and procedures to ensure that it maintains a coordinated record relating to each case under investigation. The information that is to be included in case records shall be documented and may include records of telephone conversations, evidence receipts, descriptions of evidence packaging and seals, subpoenas, records of observations and test/examination results, reference to procedures used, diagrams, print-outs, auto radiographs, photographs, etc. In general, the records required to support conclusions shall be such that in the absence of the investigator/examiner, another competent investigator/examiner could evaluate what had been performed and interpret the information.

Where appropriate, observations shall be preserved by photography or electronic scanning (e.g. photographs, electrostatic lifts). Calculations and data transfers that do not form part of a validated electronic process shall be checked, preferably by a second qualified person. The case record shall include an indication that such checks have been carried out and by whom. (e.g. units of measurement conversions, angle calculations, statistical analyses)

Examination records shall be paginated using a page numbering system that indicates the total number of pages and end of document. Each page of every document in the case record shall be traceable to the examiner and where appropriate, to a uniquely identified case or exhibit. It shall be clear from the case record who has performed all stages of the analysis/examination and when each stage of the analysis/examination was performed. Bound non-loose leaflet notebooks that contain information from only one examiner are not required to have every page marked.

Where appropriate, observations and test results shall be preserved by photography or electronic scanning (e.g. physical matches). Photocopies, tracings or hand-drawn facsimiles may also be suitable.

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

The unit shall have documented policies and procedures for the review of case records, including test reports for editorial accuracy.

The type and amount of information required in the report may depend on the legal system. However, in all cases, there should be a clear indication of what are facts and what are interpretations, assumptions or opinions.

The report should contain all the results of examinations and observations, including visual evidence, as well as the findings and, where appropriate and admissible, conclusions arrived at from these results.

The reports issued should be complete and should contain the information on which an interpretation might be made.

In all cases it must be possible to identify the person accepting responsibility for the verification and release of the inspection report.

Amendments to a report after issue shall be made only in the form of a further document that includes the statement: "Supplement to Report XYZ."

13.13 Subcontracting

The organization shall be able to complete the examination of latent prints and/or tenprints that it undertakes to perform. Subcontractors can be used in various circumstances, for example, sending the result of an examination out to a third party for verification purposes only.

The unit shall provide appropriate evidence of the subcontracted body's competence, such as accreditation certificate or records of evaluation performed by qualified personnel according to appropriate procedures.

The requirements of this International Standard regarding subcontractors apply when work is subcontracted for activities that fall within the unit's scope of accreditation and the subcontractor's results are included in the agency's own report. However, latent print and/or tenprint units are not responsible for the content of test reports issued directly by the outside party.

The unit should ensure the competence of organizations or individuals who are retained by the agency to perform examination work that falls outside of the unit's scope of accreditation; however, the unit is not responsible for the outside party's work. When a unit includes the outside party's test results within its own report, the report must clearly indicate that the results do not fall under the unit's scope of accreditation.

13.14 Confidentiality

The unit shall have a policy as to any legal requirements of the agency as it relates to confidentiality. The unit shall have a policy on the confidentiality of the reports.

14.0 FIREARMS EXAMINATION SUPPLEMENTAL REQUIREMENTS

14.1 Introduction

This document is intended to provide amplification for the application of ISO/IEC 17020 to firearms examinations.

It was developed by a Technical Advisory Committee (TAC) consisting of eight subject matter experts and one (1) representative of ANSI-ASQ National Accreditation Board/FQS.

The TAC developed the document in the context of a program primarily directed to law enforcement agencies (“agency”) whose police forensic units perform firearm examinations, either as their sole responsibility or as part of a police science unit with broader testing responsibilities. This document uses the various SWGGUN guidelines.

Testing performed by a firearm examination unit (inspection agency) may fall into one of two categories: namely functional or analytical. Functional testing, for example comparisons, forms a normal part of the inspection activities of a firearm examination unit and is therefore within the scope of ISO/IEC 17020. Analytical testing laboratories, for example those that conduct the analysis of controlled substances or DNA profiling, are covered by ISO/IEC 17025. This includes analytical testing conducted in the field. A firearms examination unit that performs testing on gunshot residue using analytical instrumentation such as ICP/MS, SEM or other instrumentations for chemical composition is an analytical testing process and would be within the scope of ISO/IEC 17025.

For the purposes of this document, forensic inspection is defined as the examination of an item or location and, on the basis of professional judgment, the determination of conformity with proposed events or known conditions. The inspection agency will have to demonstrate that it has the necessary competence to perform the tasks involved. For the purposes of accreditation, measurements that are used to assist in documenting the inspected location or item and tests or processes that are used to assist in the identification, visualization and collection of forensic evidence may be listed on the agency’s scope of accreditation.

When using the ISO/IEC 17020 standard with this FQS field specific criteria document, the terms “inspector” and “inspection”, are equivalent to “examiner” and “examination” respectively.

Any functional testing conducted by the firearms examiner, such as visualization, use of comparison microscopes, etc., shall be carried out according to documented procedures and ISO/IEC 17020 is intended to cover these procedures provided that the relevant clauses of ISO/IEC 17025 are met. Traceability and measurement uncertainty are examples of relevant clauses. In these cases the agency must comply with Section 7 of Document 11.

It is recognized that there is considerable overlap in functional and analytical testing in forensic units. Agencies are encouraged to pursue the benefits of accreditation, but should consider carefully which international standard best fits their needs.

14.2 References

ISO/IEC 17020 General criteria for the operation of various types of bodies performing inspection (or future versions thereof)

ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories (or future versions thereof)

EA-5/03 Guidance for the implementation of ISO/IEC 17020 in the field of crime scene investigation (or future versions thereof)

ILAC G-19 Guidelines for forensic science laboratories (or future versions thereof)

IAF/ILAC-A4 Guidance on the Application of ISO/IEC 17020 (or future versions thereof)

SWGUN Guidelines for the Documentation of Firearm Examinations (2011) (or future versions thereof)

SWGUN Criteria for Identification (2011) (or future versions thereof)

SWGUN Quality Assurance Guidelines (2011) (or future versions thereof)

14.3 Definitions

Client or Customer: The client or customer is the body asking the firearm examiner unit to perform ballistic comparisons and other related firearms examinations.

Evidence: Evidence or exhibit is an item or sample recovered as part of an investigation. This includes evidence such as firearm weapons, bullets, cartridges, clothing, etc.

Forensic Unit: A forensic unit is a legal entity or a defined part of a legal entity that performs any part of the forensic process.

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

Inspection Body: Inspection body as used in this document is a forensic unit or agency such as a firearms examination unit using professional judgment to examine (inspect) evidence with the aim to contribute to determine if the comparison between items meets certain criteria (i.e. comparison between test fires and evidence cartridge cases and bullets, etc).

Examiner: Individual, who conducts and/or directs the inspection of firearms and performs comparisons, interprets data, reaches conclusions and/or testifies in court.¹⁶

Forensic Inspection: Forensic inspection is the examination of a person, item or location and on, the basis of professional judgment, the determination of their conformity with proposed events or known conditions.

¹⁶ The definitions of investigator and examiner can be very close. Both, if trained, can perform firearms examinations and testify. Typically, however, the examiner is the one who performs comparisons, interprets data, and reaches conclusions.

Equipment: Equipment refers to all tools and instruments used as part of the forensic process which need to be monitored and controlled. This also includes reagents and personal protective equipment.

14.4 Independence, Impartiality and Integrity

14.4.1 Policies and Procedures

The organization must have clear and documented policies and procedures regarding the pressures on individuals that may affect their judgment. In addition, the organization must have a policy and procedure that shall be followed if a circumstance is discovered where there is a possibility that an individual's judgment has been compromised.

14.4.2 Inspection Body Classification

ISO/IEC 17020 classifies inspection agencies as type A, B or C, depending on the degree of independence of the inspection body from its client or customer. In terms of tasks and structure, firearms units are essentially inspection agencies which provide services as impartial third parties.

A firearms unit that examines evidence that is not connected to the parent organization would meet the requirements of a Type A inspection agency, that is, its organization and management are independent of those of the customer or other interested parties. However, due to the nature of the forensic evidence it is not always clear before the examination has been finished and the case resolved, whether the persons involved in the crime do actually have a relationship, for example relatives to the employees of the latent print unit. The firearms unit must therefore have policies and procedures for dealing with such situations and have measures to ensure that its impartiality can be defended if challenged.

Type B inspection agency is a separate and identifiable part of an organization that has been established to supply inspection services to only its parent organization. Unless an agency's firearm unit only performs services on evidence recovered from within its parent organization it will not be a Type B inspection agency.

If the firearms unit provides services to both impartial third parties and its own parent organization then it would be a Type C inspection agency and must meet all of the requirements for Type C. A Type C inspection agency must have safeguards within the organization to ensure adequate segregation of responsibilities and accountabilities in the provision of its services. Type C inspection agency is similar to a Type B but may supply inspection services to other parties outside its parent organization.

The criteria for the independence of an inspection body are:

- The firearm units are an independent legal entity or are part of legally identifiable organization. However, it always remains completely independent of the affected parties in specific cases or abstains or withdraws from the activities.

- Procedures and policies on maintaining complete independence at all times (for example in relation to personnel, finances, decisions or the standard operating procedures) are defined and adhered to.
- Individual employees responsible for conducting firearms examinations have no direct relationship (private or professional) with the case to be dealt with, the persons involved, or with the evidence secured.
- The services (inspections) of the firearms units are made available to all interested legal bodies within the scope of the legal process.

In addition, ISO/IEC 17020 describes independence criteria for Type A, Type B, and Type C inspection agencies.

In Summary, a police organization that supplies services to only other agencies or identities is a Type A. A police organization that supplies services to only its own organization is a Type B. A police organization that supplies services to both its own organization and to outside agencies is a Type C.

14.5 Organization and Management

The firearms unit shall maintain an up-to-date organizational chart clearly showing the functions and lines of authority for staff within the unit(s) and the relationship, if any, between the inspection function and other activities of the organization. The position of the technical manager and quality manager should be clearly shown in the chart.

Different persons may take up the role of technical manager for different activities. Where more than one person acts as the technical manager, the specific responsibilities of each person must be defined and documented.

The firearms unit shall be able to demonstrate that it is organized in such a way that the work of the staff performing inspections is supervised by personnel who are familiar with the objectives of the inspections, the inspection methods and procedures being used and the assessments of the inspection results. The extent, nature and level of supervision exercised should take into account the qualifications, experience, training and technical knowledge of the inspection staff and the inspections being undertaken.

The organization shall appoint a member of staff as Health and Safety Manager, however named, who is responsible for maintaining the Health and Safety of the unit.

14.6 Quality System

The position of the quality manager (however named) shall be clearly shown in the organizational chart referenced in 14.5 above. The quality manager shall be free from any influences or conflicts of interest that may affect the quality of his/her work.

Internal Quality audits are normally planned and organized by the quality manager and carried out in accordance with a pre-determined schedule at least once per year that encompasses all

aspects of the quality system, including the performance of inspections. The scopes, dates and the detailed scheduling of audits must be planned and conducted in accordance with a documented procedure.

The firearms unit shall have policies and procedures for feedback and corrective actions. The policy and procedures for feedback and corrective action shall ensure that:

- the responsibilities and authorities for the management of nonconforming work are designated and actions (including halting of work and withholding of reports, as necessary) are defined and taken when nonconforming work is identified;
- an evaluation of the significance of the nonconforming work is made;
- correction is taken immediately, together with any decision about the acceptability of the nonconforming work;
- where necessary, the client is notified and work is recalled;
- the responsibility for authorizing the resumption of work is defined.

Where the evaluation indicates that the nonconforming work could recur or that there is doubt about the compliance of the firearms units' operations with its own policies and procedures, corrective action procedures shall be followed.

The firearms unit shall establish policies and procedures and if necessary designate appropriate persons for implementing corrective action when nonconforming work has been identified. A problem with the quality system or with the technical operations of the firearms units may be identified through a variety of activities, such as control of nonconforming work, internal or external audits, management reviews, feedback from clients and from observations made by examiners. It is recommended that the procedure for corrective action starts with an investigation to determine the root cause of the problem.

Root Cause analysis is the key and sometimes the most difficult part in the corrective action procedure. Often the root cause is not obvious and thus a careful analysis of all potential causes of the problem is required.

Management reviews shall be planned and carried out in accordance with a pre-determined schedule at least once per year to allow for the continued suitability and effectiveness of the quality system and shall take into account of any relevant information including:

- Reports from supervisory or managerial staff
- Suitability of policies and procedures
- Corrective actions
- Internal audits
- External audits
- Complaints
- Feedback from customers
- Identified modifications for quality system
- Training needs for new and existing staff
- Adequacy of current human and equipment resources

A pre-determined schedule is defined as a schedule that at least designates the month of the scheduled function.

14.7 Personnel

The firearms unit shall have a sufficient number of competent personnel having the education, training, technical knowledge, skills and experience necessary for handling the category, range and volume of the work performed.

The quality system shall define and document each role in firearms examinations with specific requirements for qualifications, training, experience and knowledge for the tasks they carry out. The competence of temporary personnel used is the responsibility of the firearms unit. Each member of staff shall be aware of their role and limitation. This information shall be provided in writing to avoid misunderstanding.

There shall be an up-to-date documented training program in place that includes competence assessment with defined criteria to declare someone as competent. There shall be maintained an up-to-date record of the training that each member of staff has received. These records shall include academic and professional qualifications, external or internal courses attended and relevant training (and retraining, where necessary) received while working in the forensic unit. The term 'competent' is defined as having the requisite knowledge, skills and ability to perform the task. Having qualifications, training and experience does not guarantee practical competence in latent print examination or sound professional judgment. Therefore, management must be able to demonstrate that the personnel are competent by carrying out assessments of their knowledge and skills against defined criteria. The training shall follow a defined program and the assessment of competence shall be consistently applied to all. Acceptance criteria shall be assigned to the relevant roles to determine competence. Where necessary, the training program shall include expert witness testimony.

The firearms units' policy shall also include procedures for retraining and maintenance of skills and expertise including updates with the latest developments in the area of firearms examinations.

Identification of training needs for each person should normally take place at least once per year. This review should result in documented plans for further training or a statement that no further training is required for the individual at present.

The firearms unit shall have clear statements of the competencies required for all jobs and records shall be maintained to demonstrate that all staff is competent for the jobs they are asked to carry out. The purpose of these records is to demonstrate the competency of each member of the staff to perform specific inspection tasks and, where relevant, to use specific equipment and procedures.

All members of staff, whose work influences the result of the firearms examination, shall have an up-to-date record of training, development and competence evaluation. Competence records

shall be documented and should be sufficiently detailed to provide objective proof that staff have been properly trained and that their ability to perform their tasks has been formally assessed.

A Code of Conduct for Firearms Examiners shall be introduced that includes work ethics, confidentiality, impartiality, personal safety, relationship with other members of the firearms unit and any other issues needed to ensure appropriate conduct of the staff.

All personnel will need records of training and competency. There is no grandfathering but records of a history of successful completion of proficiency testing can be used to demonstrate competency.

The firearm unit shall establish a program of testimony monitoring for all firearms examiners.

14.8 Proficiency Testing

An effective means for a firearm unit to monitor its performance, both against its own requirements and against the performance of its peers, is to take part in proficiency testing programs. When participating in proficiency testing programs, the firearms unit's own documented procedures shall be used. Performance in the programs shall be reviewed regularly and where necessary, corrective action shall be taken.

Agencies that perform chemical or physical screening tests or other tests as part of their firearms examinations must maintain a proficiency testing program for those tests. A suitable proficiency test is one that meets the requirements of ISO/IEC 17043 or is accepted by FQS.

Alternative approaches are needed for the evaluation of an agency's performance in firearms activities that are not tests and for which test materials do not exist (e.g. the mixing of reagents). Assessors shall evaluate the adequacy of the proficiency test performance in the light of the agency's overall quality assurance procedures and performance. These shall include internal procedures for competency monitoring and the effectiveness of corrective action policies and procedures.

14.9 Facilities and Equipment

The term "facilities" in ISO/IEC 17020 refers to the means by which the integrity of the evidence and the equipment used can be protected during the examination, for example evidence storage lockers, work space, laboratory space, magnifiers, etc.

The term "equipment" in ISO/IEC 17020 refers to all tools and instruments used for firearms examinations that need to be monitored and controlled. Equipment includes reagents and other reference materials.

The firearms unit must monitor and record the environmental conditions with calibrated equipment, if applicable and note if conditions are outside the limits within which examinations can be performed (see also FQS Document 11, section 7.3).

Access to the operational area of the forensic police unit shall be controlled and limited. Visitors shall not have unrestricted access to the operational areas of the facilities. A record shall be retained of all visitors to the operational areas of the facility.

Evidence storage areas shall be secure to prevent theft or interference and there shall be limited, controlled access. The storage conditions shall be such as to prevent loss, deterioration and contamination and to maintain the integrity and identity of the evidence.

The term “rules” in ISO/IEC 17020 refers to the firearms units’ need to have written policies and procedures defining the conditions under which equipment and facilities can be used and the persons allowed using them. The firearms unit needs to have policies for the use of disposable equipment to ensure that such equipment does not contribute to contamination through misuse or re-use.

Use of facilities and equipment by unauthorized persons shall not be permitted. If any item is found to have left the firearms units’ direct control, measures must be taken to confirm its continuing suitability before its return to use. Typical measures would include visual inspection, functional and performance checks and/or re-calibration.

Another example of equipment is digital cameras which should be checked for suitability with a test chart to show correct color response and resolution. Equipment also includes reagents used in the visualization of gunshot residues and serial number restoration.

All equipment which can influence the quality of the comparison results need to be either labeled or in other ways identified. Unique identification of items of equipment is important even when the organization has only one example of a particular item. This enables tracking when items are replaced for whatever reason.

Critical reagents are those reagents that can result in damage to evidence in normal use and influence the quality of the examination. A list of critical reagents must be maintained. The correct functioning of each reagent on the list must be confirmed with a control prior to its use on evidence.

The quality of standard materials and reagents shall be adequate for the procedure used. Lot/batch numbers of standard materials and critical reagents shall be recorded. All critical reagents shall be tested for their reliability. Standard materials and reagents shall be labeled with:

- name;
- concentration, where appropriate;
- preparation date and or expiry date;
- identity of preparer;
- storage conditions, if relevant;
- hazard warning, where necessary.

Maintenance applies to all equipment which influences the quality of the examination results. Maintenance also includes checking the function of equipment to make sure it works properly.

All equipment used for measurements and tests, where the results of such measurements and tests have a significant influence on the results and interpretation of the firearms examination shall be traceably calibrated to a national or international standards where possible. Such methods shall comply with the requirements of Section 7 of Document 11.

The requirements on defective equipment also apply to reagents. These requirements are relevant only when the equipment and reagents could influence the outcome of the investigation.

Records shall be maintained of each item of equipment and its software significant to the investigations performed. The records should include at least the following:

- identity of the item of equipment and its software;
- the manufacturer's name, type identification, and serial number or other
- unique identification;
- checks that equipment complies with the specification;
- the current location, where appropriate;
- the manufacturer's instructions, if available, or reference to their location;
- dates, results and copies of reports and certificates of all calibrations,
- adjustments, acceptance criteria,
- and the due date of next calibration;
- maintenance plan, where appropriate, and maintenance carried out to date;
- any damage, malfunction, modification or repair to the equipment.

14.10 Inspection Methods and Procedures

The firearms unit shall have protocols that contain guidelines on the examination of items and the order in which they should be performed. The firearms unit may have varying protocols depending upon the nature of the evidence being examined. The processes may be based on nationally and internationally accepted procedures for work. In some cases, in-house procedures may be used.

Where possible, nationally or internationally recognized methods or procedures that have been validated and published by authoritative bodies such as ASTM or relevant SWGs should be used. Such methods may be implemented following performance checks that confirm that the forensic unit is able to meet the performance specified in the published method and that they are fit for purpose. Records of the performance checks shall be kept.

If there are no suitable methods or procedures that have been validated and published by an authoritative body, then the firearms should use procedures or methods that have been published in peer reviewed journals, are generally accepted in the field, and that have been demonstrated as fit for purpose by the firearms unit. Records demonstrating that they are fit for purpose shall be kept by the forensic unit.

Methods or procedures that do not fall into either of the above categories, or modified versions of these methods need to be demonstrated as fit for purpose by in-house validation.¹⁷ These are referred to in this document as "non standard methods (procedures)." In all cases, the firearms unit would have to make sure that the standard or non-standard procedure can be appropriately used by its personnel.

There shall be written protocols for chemical screening tests or other tests performed in the office or the field. Non-standard test procedures must be validated by the agency. Positive and negative controls must be used to verify the correct functioning of test kits or other reagents prior to their use on evidence. When conducting testing, care shall be taken to avoid sample consumption, degradation, or contamination that would compromise the integrity of samples for subsequent testing.

It is recognized that forensic inspection involves the use of chemical processes and physical, chemical and dimensional tests to aid in the discovery of evidentiary information or evidentiary items. All such activities conducted while performing forensic inspection shall be fully validated before being used on casework.

Validation of forensic inspection support activities shall follow a written procedure.

Methods may be validated by comparison with other established methods using certified reference materials (where available) or materials of known characteristics. Validation shall include consideration of Uncertainty of Measurement.¹⁸

The firearms unit shall provide examiners with safe working practices including all necessary instructions regarding safety precautions. Examiners shall adhere to the safety measures listed therein and observe the advice and the prohibited actions. They shall use the personal protective clothing where applicable.

14.11 Handling Inspection Samples and Items

Protocols and training programs shall describe how firearms examiners should approach an examination. The firearms unit shall have a policy and documented procedures which describe, where applicable, the collection, packaging, transportation, handling and disposition of collected or submitted items; measures to be taken to prevent loss, contamination, cross contamination and deleterious changes; and to secure exhibits which must be left unattended.

The exhibits collected during evidence recovery processes must be clearly and uniquely identified. The identity for exhibits should correlate with the investigation report.

Appropriate precautions are required when dealing with potentially dangerous substances and items.

¹⁷ In the case of well-established methods and procedures, historical and on-going records of successful completion of proficiency tests using the methods and procedures can be used to demonstrate fit for purpose.

¹⁸ It is recommended that accredited reference material producers are used, where available, that have been accredited to ISO Guide 34.

A “chain of custody” record shall be maintained from the receipt of items/exhibits which details each person or body who takes possession of an item or alternatively the location of that item (e.g. if in storage).

There shall be documented procedures which describe the measures taken to secure exhibits in the process of being examined which must be left unattended.

14.12 Records

Case records may include notes, photographs, etc. At a minimum, there must be sufficient information available such that in the absence of the examiner, another competent examiner could evaluate the history of the evidence while in the custody of the examining unit and the examinations conducted.

Case records must contain either (1) a reproduction of the photographic data of a quality suitable for comparison or (2) the original evidence or (3) sufficient information to guide the reviewer in retrieving the original evidence. In this way a suitably qualified examiner would be able to evaluate the original work and verify that the procedures and conclusions arrived at are reasonable. If the case record contains the original evidence then it must be stored in a secure environment to ensure that the evidence is not damaged or lost.

The firearms unit shall include in their procedures criteria for identification that is generally accepted by members of the forensic firearms community.

The firearms unit shall have documented policy and procedures to ensure that it maintains a coordinated record relating to each case under investigation. The information that is to be included in case records shall be documented and may include records of telephone conversations, evidence receipts, descriptions of evidence packaging and seals, subpoenas, records of observations and test/examination results, reference to procedures used, diagrams, print-outs, auto radiographs, photographs, etc. In general, the records required to support conclusions shall be such that in the absence of the investigator/examiner, another competent investigator/examiner could evaluate what had been performed and interpret the information.

Where appropriate, observations shall be preserved by photography or electronic scanning. Calculations and data transfers which do not form part of a validated electronic process shall be checked, preferably by a second qualified person. The case record shall include an indication that such checks have been carried out and by whom.

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

Examination records shall be paginated using a page numbering system which indicates the total number of pages and end of document. Each page of every document in the case record shall be traceable to the examiner and where appropriate, to a uniquely identified case or exhibit. It shall be clear from the case record who has performed all stages of the analysis/examination and when

each stage of the analysis/examination was performed. Bound non-loose leaflet notebooks that contain information from only one examiner are not required to have every page marked.

The type and amount of information required in the report may depend on the legal system. However, in all cases, there should be a clear indication of what are facts and what are interpretations, assumptions or opinions.

The report should contain all the results of examinations and observations, including visual evidence, as well as the findings and, where appropriate and admissible, conclusions arrived at from these results.

The reports issued should be complete and should contain the information on which an interpretation might be made.

In all cases it must be possible to identify the person accepting responsibility for the verification and release of the inspection report.

Amendments to a report after issue shall be made only in the form of a further document which includes the statement: "Supplement to Report XYZ."

The firearm unit shall have documented policies and procedures for the review of case records, including test reports for editorial accuracy. These procedures shall include both an administrative review and a technical review.

A technical review is an evaluation of the sufficiency of a case record with regard to the tests that were conducted and the observations and conclusions contained in the report. The technical review is an evaluation of the case record to ensure that there is an appropriate and sufficient basis for the scientific conclusions. All individuals who perform technical reviews on case records must have been previously qualified in the areas that the review is encompassing. The agency must demonstrate that the technical reviewer has a basis of knowledge that will allow him/her to ensure that the conclusions and supporting data are reasonable and within the constraints of scientific acceptance. The agency must describe the method used for demonstrating completion of each review, for example, by completion of a checklist.

There must be a procedure that describes how to deal with situations wherein the examiner does not agree with the conclusions of the original examiner. The resolution of the differing conclusions must be recorded in the case record. The annual Management Review must include all records that required a resolution to ensure that any appropriate preventative or corrective action is implemented.

14.13 Subcontracting

The organization shall be able to complete the examination of firearms evidence that it undertakes to perform. Subcontractors can be used in various circumstances.

The firearm unit shall provide appropriate evidence of the subcontracted body's competence, such as accreditation certificate or records of evaluation performed by qualified personnel according to appropriate procedures.

The requirements of this International Standard regarding subcontractors apply when work is subcontracted for activities that fall within the firearms unit's scope of accreditation and the subcontractor's results are included in the agency's own report. However, a firearms unit is not responsible for the content of test reports issued directly by the outside party.

The firearm unit should ensure the competence of organizations or individuals who are retained by the agency to perform examination work that falls outside of the unit's scope of accreditation; however, the unit is not responsible for the outside party's work. When a unit includes the outside party's test results within its own report, the report must clearly indicate that the results do not fall under the unit's Scope of Accreditation.

14.14 Confidentiality

The firearms unit shall have a policy as to any legal requirements of the agency as it relates to confidentiality. The firearm unit shall have a policy on the confidentiality of the reports.

Example FQS Inspection Body Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17020

Inspection body name

Street address, City, State zip
 Contact person name Phone: phone number

INSPECTION

Valid to: Certificate Number: FQS – xxxx

I. Type A (Third-Party) Body

FIELD OF INSPECTION	TYPE AND RANGE OF INSPECTION	METHODS AND PROCEDURES¹⁹
e.g. Crime Scene	1. Plan drawing 2. Blood spatter analysis	Photography 3-D computer aided design Blood screenin

Notes:

1. This scope is part of and must be included with the Certificate of Accreditation No. FQS- xxxx

¹⁹ Wherever Normative documents, Consensus standards are not used , specific documented Internal Procedure should be cross referred

Approval:



/s/
Vice President

UNCONTROLLED

REVISION HISTORY

<u>Date</u>	<u>Description/Author</u>
May 1, 2012	First Draft – W. Tilstone
May 1-16, 2012	Review and edits – K. Greenaway, T. Mills, W. Tilstone
May 18, 2012	Final review and approval - K. Greenaway
June 27, 2012	Made minor editorial changes – K. Greenaway, P. Bencivenga
June 28, 2012	Final review and approval – K. Greenaway

UNCONTROLLED