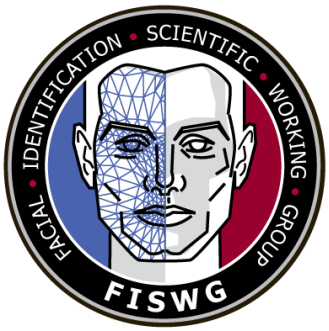

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Quality Management Requirements for Forensic Facial Image Comparison

1. Scope

1.1 This document outlines requirements for establishing and maintaining a quality management system (QMS) for forensic facial image comparison (FIC).

1.2 It is intended for organizations of all sizes, from those without formal quality systems to those pursuing accreditation.

1.3 This document addresses quality management practices that support reliable, transparent, and defensible FIC casework.

2. Referenced Documents

2.1 *ASTM Standards*:

E620 – Practice for Reporting Opinions of Scientific or Technical Experts

E1459 – Guide for Physical Evidence Labeling and Related Documentation

E1492 – Practice for Receiving, Documenting, Storing, and Retrieving Evidence

E1732 – Terminology Relating to Forensic Science

E2917 – Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development

E3149 – Standard Guide for Facial Image Comparison Feature List for Morphological Analysis

2.2 *OSAC Registry*:

OSAC 2022-S-0001 – Standard Guide for Image Comparison Opinions

OSAC 2022-S-0008 – Standard Guide for Minimum Facial Image Comparison Documentation

2.3 *FISWG Guidelines*:

FISWG Glossary

FISWG Guide for Mentorship of Facial Comparison Trainees in Role-Based Facial Comparison

FISWG Guide for Role-Based Training in Facial Comparison

FISWG Physical Stability of Facial Features of Adults

FISWG Guideline for the Use of ACE-V Methodology in One-to-One Examinations

2.4 *Other Standards and related quality guidance*:

ISO/IEC 17025 – General requirements for the competence of testing and calibration laboratories

ISO/IEC 21043 – Forensic sciences framework

ILAC G19:06/2022 – Modules in a Forensic Science Process

IFSA Minimum Requirements for Facial Identification

3. Terminology

3.1 *Definitions:*

3.1.1 Forensic Science Practitioner, *n*—an individual who (1) applies scientific or technical practices to the recognition, collection, analysis, or interpretation of evidence for criminal and civil law or regulatory issues; and (2) issues test results, provides interpretations, or opinions through reports or testimony with respect to such evidence. (Source: ASTM E1732 Standard Terminology Relating to Forensic Science).

3.1.2 Forensic Science Service Provider, *n*—an organization or individual that provides forensic services. (Source: ASTM E1732 Standard Terminology Relating to Forensic Science).

3.1.3 Nonconformity, *n*— failure to meet one or more specified requirements of applicable standards, or of an organization's documented procedures, policies, or quality management system. (Source: ISO/IEX 17025 (Clause 7.10)

3.1.4 Technical review, *v*—a qualified second party's evaluation of reports, notes, data, and other documentation to ensure there is appropriate and sufficient support for

the actions, results, conclusions, opinions, and interpretations. (Source: ASTM E1732 Standard Terminology Relating to Forensic Science).

3.2 *Acronyms*:

3.2.1 FIC, *n*—Facial Image Comparison

3.2.2 FSP, *n*—Forensic Science Practitioner

3.2.3 FSSP, *n*—Forensic Science Service Provider

3.2.4 QMS, *n*—Quality Management System

4. Summary of Guide

4.1 This document outlines the essential components of a QMS for FIC, including personnel, documentation, casework practices, training, review, method validation, proficiency testing, audits, and corrective actions.

4.2 It provides the minimum requirements for quality management and advanced practices for organizations seeking accreditation, to enable scalability depending on organizational structures and resources, while promoting consistency across agencies and organizations.

4.3 It aligns FIC activities with international forensic quality standards and is intended for organizations of varying size and maturity, from those without formal quality management systems to those pursuing accreditation.

5. Significance and Use

5.1 An effective QMS provides assurance of and confidence in the quality of results and rigor of performance.

5.2 Implementing an effective quality management system serves as a basis for following best practice and improving processes.

5.3 The QMS also supports the identification, management, mitigation, and communication of risk and uncertainty, as well as the identification of opportunities and improvements.

5.4 The QMS shall cover all procedures and reports related to FIC activities.

5.5 This document is intended for forensic science service providers (FSSPs) and is to be used by forensic science practitioners (FSP), managers, and quality personnel engaged in FIC activities. However, the principles of effective quality management may be applied to any organization undertaking FIC activities.

6. Quality Management System

6.1 FSSPs shall establish, document, and maintain an effective QMS for the delivery of FIC activities.

6.2 The QMS shall include all documents, procedures, and policies relating to the management of FIC activities, and should include, but not be limited to:

6.2.1 Management review,

6.2.2 Document control,

6.2.3 Evidence handling, analysis, and reporting,

6.2.4 Validation,

6.2.5 Training, mentorship, and ongoing competency,

6.2.6 Standard operating procedures.

6.2.7 Quality control (e.g., technical review and administrative review).

6.2.8 Quality assurance (e.g., proficiency testing and interlaboratory comparisons).

6.2.9 Auditing.

6.2.10 Environment and equipment.

6.2.11 Corrective actions.

6.2.12 Actions to address risks, opportunities, and improvements.

6.3 If the FSSP is seeking accreditation the QMS shall meet the requirements of any relevant international standards for the FSSP's jurisdiction, such as ISO/IEC 17025 or ISO/IEC 17020.

6.4 The QMS shall be updated as necessary and undergo management review at planned intervals to ensure the continuing suitability, adequacy, and effectiveness of its operation.

7. Personnel

7.1 The QMS shall define and document all roles related to the delivery of FIC activities.

7.2 Documented job descriptions shall define the responsibilities, duties, qualifications, and skills required for each role.

7.3 Personnel roles should align with role definitions in the FISWG Guide for Role-Based Training in Facial Comparison.

7.4 Additional roles may include, but are not limited to:

7.4.1 Director – Oversees operations and compliance.

7.4.2 Quality Assurance Manager – maintains the QMS and coordinates internal or external reviews and audits.

7.4.3 Technician – prepares or processes case material but does not issue reports or opinions.

7.4.4 Forensic Science Practitioner – a designated person authorized to:

7.4.4.1 Examine and analyze materials or direct such examinations.

7.4.4.2 Interpret data, issue reports for court or investigative purposes, and conduct technical reviews of reports.

7.4.5 Case Manager – reviews evidence for contextual information, assesses suitability, sets case strategy, or monitors caseload.

7.5 All personnel involved in FIC activities shall be aware of the FSSP's commitments to impartiality and confidentiality.

8. Training, Competency, and Proficiency

8.1 The QMS shall document all training, competence, and education requirements for personnel that deliver FIC activities.

8.2 The QMS shall enable the FSSP to maintain a documented training, continuing education, and professional development program to ensure all personnel are trained, competent, and tested to perform FIC activities:

8.2.1 The documented program shall define objectives, responsibilities, test design, acceptance criteria, and remedial actions based on best practice guidelines and recognized standards.

8.2.2 Practitioners performing FIC activities shall be able to demonstrate and maintain the knowledge, skills, and abilities required for independent casework

8.2.3 Competency and proficiency testing shall be recorded within the QMS to confirm that personnel performing FIC casework are capable of producing reliable and defensible results.

8.3 The QMS shall document the requirements for initial and ongoing competency assessment for new and existing personnel:

8.3.1 New personnel shall complete any required initial training and competency assessments prior to undertaking FIC activities.

8.3.2 Competency test samples shall be representative of casework typically encountered by the FSSP.

8.3.3 The methodology for competency tests shall correspond to any relevant documented standard operating practice within the QMS.

8.3.4 Competency assessments shall include a combination of the following:

8.3.4.1 Knowledge tests (image science, anatomy, structured methods, bias mitigation, documentation, ethics, and Facial Recognition System principles).

8.3.4.2 Practical comparison exercises (representative case types such as mugshots, CCTV, passport photos, social media, etc.).

8.3.4.3 Documentation and reporting (annotated notes and written report).

8.3.5 Personnel undertaking FIC activities shall meet relevant competency requirements consistent with ASTM E2917 – Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development, and any discipline-specific training programs.

8.3.6 Personnel conducting FIC for one-to-one examinations shall be trained and assessed in morphological analysis of faces according to the ACE-V framework, as defined in the FISWG Guideline for the Use of ACE-V Methodology in One-to-One Examinations, and apply the ASTM E3149 – Standard Guide for Facial Image Comparison Feature List for Morphological Analysis.

8.3.7 Where relevant personnel shall receive training, and be competency assessed, in courtroom testimony

8.4 The QMS shall document the requirements for casework supervision and mentorship of personnel undertaking FIC activities:

8.4.1 Prior to undertaking independent FIC casework, practitioners shall complete a defined period, or set number of, supervised casework reflective of the complexity of normal casework.

8.4.2 The mentorship program should be administered in line with the FISWG Mentorship of Facial Comparison Trainees document.

8.4.3 Mentorship shall also include case review, competency evaluation, and observation of testimony where applicable.

8.5 The QMS shall record the ongoing competence of practitioners and document the requirements for reassessment should a practitioner's competency lapse:

8.5.1 Competency shall be reassessed at planned intervals, or sooner if a practitioner's competence has lapsed due to absence, remedial action, or if a method has undergone significant changes.

8.5.2 Any deficiencies encountered in a practitioner's casework that cause a lapse in competency shall be recorded and trigger remedial corrective actions such as remedial training, supervised casework, or restriction of duties, until the practitioner can regain competence.

8.5.3 The remedial action taken, the root cause, the evidence of completion, and issues addressed shall be documented within the QMS.

8.6 All records relating to training, competency, mentoring, education, and professional development shall be retained with the QMS, in accordance with the FSSP's retention policy.

9. Method Validation

9.1 The QMS shall include procedures for the validation of methods used to deliver FIC activities, including, but not limited to, face examination, image processing, and image enhancement.

9.2 Methods shall be validated prior to use to ensure they meet the requirements of the intended purpose.

9.3 Validation shall consist of one, or more, of the following:

9.3.1 Evaluation of the performance method using known reference materials, including measures of:

9.3.1.1 Accuracy (i.e., if the method produces the intended result).

9.3.1.2 Precision (i.e., closeness to the intended results).

9.3.1.3 Repeatability (i.e., the consistency of the result under identical conditions).

9.3.1.4 Reproducibility (i.e., the consistency of the result under changed conditions, e.g., different practitioners or different equipment).

9.3.1.5 Bias (i.e., systematic error, e.g., due to flawed method design, human factors, equipment issues and/or improper calibration).

9.3.2 Systematic assessment of factors influencing the results of the method.

9.3.3 Testing the robustness of the method through the variation of controlled

parameters.

9.3.4 Comparison of results achieved with other validated methods.

9.3.5 Interlaboratory comparisons and proficiency testing.

9.4 The following validation records shall be retained within the QMS:

9.4.1 The validation procedure, including the tests undertaken.

9.4.2 The method, equipment, software, personnel, and reference materials used in the validation.

9.4.3 The requirements of the method to meet the intended purpose (i.e. the end-user requirements).

9.4.4 The specification of how the requirements will be met through testing.

9.4.5 The acceptance criteria for meeting the requirements through testing.

9.4.6 The results obtained from the validation.

9.4.7 The performance characteristics of the method.

9.4.8 A statement of the validity of the method for the intended purpose.

9.5 Validated methods shall be approved for the intended use.

9.6 Method validation shall occur at planned intervals.

9.6.1 When changes occur to a method (e.g., a change in process, equipment or software update) the impact of this change shall be assessed and recorded. If the change is assessed to have an impact on the results of the previous validation a new method validation shall be undertaken.

9.7 Adopted methods that have been validated elsewhere shall undergo local

verification.

9.7.1 The validation records of the adopted method shall be reviewed to ensure the validation was fit for purpose and determine what additional local verification testing is required.

9.7.2 The verification of a validated method shall be as extensive as necessary to ensure the method performs as expected in the FSSP's environment.

9.7.3 Verification records shall be retained within the QMS according to the relevant requirements for validation records.

9.8 Where an automated facial recognition system is used as part of a method, the performance of the specific version of the algorithm shall be assessed and additional validation or verification testing undertaken to ensure the algorithm performs as expected on casework representative materials.

9.8.1 Further information on biometric performance methods is available from the International Organization for Standardization (ISO), National Institute of Standards and Technology (NIST), European Network of Forensic Science Institutes (ENFSI), and FISWG.

9.9 All documentation, results, and reference materials relating to method validation and verification shall be retained within the QMS, in accordance with the FSSP's retention policy.

10. Quality Assurance

10.1 The QMS shall include procedures for monitoring and assuring the quality of results for FIC activities.

10.2 The QMS shall define, track, and record performance indicators for quality assurance and monitoring activities, including but not limited to:

10.2.1 Accuracy and error rates (e.g., the correctness and conversely the incorrectness of results).

10.2.2 Reliability (e.g., inter-practitioner agreement).

10.2.3 Inconclusive results.

10.2.4 Non-conforming work.

10.3 Internal quality assurance activities shall be recorded and occur at planned intervals. Such activities shall include, but not be limited to:

10.3.1 Non-blind or (preferably) blind test casework using known imagery.

10.3.2 Testing and calibration of equipment and software.

10.3.3 Auditing and casework review.

10.3.4 Interlaboratory comparisons.

10.4 The QMS shall also record and monitor the performance of the FSSP with other organizations:

10.4.1 Performance monitoring activities shall be performed at planned intervals and include, but not be limited to, participation in proficiency testing schemes and interlaboratory comparisons other than proficiency testing.

10.4.2 Where available, proficiency testing supplied by accredited proficiency test providers are preferable.

10.4.3 Proficiency test and interlaboratory comparison materials shall be representative of casework typically encountered by the FSSP.

10.4.4 Practitioners shall not be aware of the true response/ground truth of the test materials when undertaking proficiency tests and interlaboratory comparisons.

10.4.5 Where possible proficiency tests and interlaboratory comparisons should be performed blind (i.e., whereby practitioners are not aware they are being tested).

10.5 Only competent practitioners shall participate in quality assurance and performance monitoring activities.

10.6 All records relating to quality assurance and performance monitoring shall be retained within the QMS, in accordance with the FSSP's retention policy.

11. Reviewing requests

11.1 The QMS shall include procedures for the review and management of submitted requests for FIC activities.

11.2 The procedure for reviewing requests shall define, as a minimum:

11.2.1 The turnaround times for non-urgent and urgent work.

11.2.2 Requirements for undertaking FIC activities.

11.3 The procedure for reviewing requests shall address the receipt, rejection and handling of physical and digital items.

11.3.1 Specifically, the procedure shall include the handling of materials that are potentially hazardous and/or pose a health and safety risk to personnel.

11.4 FSSPs shall ensure that:

11.4.1 The requirements for requested FIC activities are clearly defined, documented and understood.

11.4.2 There are sufficient resources available to undertake FIC activities.

11.4.3 The FSSP is capable of meeting the requirements of the submitted request.

11.5 The FSSP shall have documented methods and procedures that are appropriate for FIC activities.

11.6 The FSSP shall cooperate with the customer if clarification or amendment of the customer's request is required.

11.7 If an external provider is required to undertake FIC activities this shall be agreed in advance with the customer.

11.8 If the FIC activities deviate from the agreed requirements the customer shall be notified.

11.9 Any changes from the customer's requirements shall be documented and retained, including any details of any discussions held with the customer.

11.10 The FSSP should have effective procedures for the management of task-relevant and task-irrelevant case information to mitigate the risks of cognitive bias.

11.11 All records relating to requests for FIC activities shall be retained within the QMS, in accordance with the FSSP's retention policy.

12. Quality Control

12.1 The QMS shall include quality control procedures for the checking and review of results from FIC activities.

12.2 All results from FIC activities shall undergo quality control procedures prior to reporting and release.

12.3 Quality control procedures shall include, as a minimum:

12.3.1 Verification of the result by a second, independent and competent practitioner.

12.3.1.1 Preferably the verification should be performed blind, where the second practitioner is not aware of the result.

12.3.1.2 The verification shall be documented to the same extent as the initial examination.

12.3.1.3 If the verification is non-blind this shall be clearly indicated in any reports and the risks of non-blind verification should be highlighted.

12.3.2 Technical review of the case notes and reports to ensure the method and standard operating procedures have been followed appropriately, and that any observations, interpretations and opinions are clearly supported by the examination.

12.4 The QMS shall include procedures for the resolving of differences in observations, interpretations and opinions between practitioners as part of the quality control process.

12.4.1 The discussion and resolution of differences in observations, interpretations, and opinions shall be recorded in the case notes.

12.5 Quality control results shall be reviewed at planned intervals to support ongoing performance monitoring and quality assurance activities, to identify trends in casework and any non-conforming work.

All records relating to quality control shall be retained within the QMS, in accordance with the FSSP's retention policy.

13. Documentation and Records

13.1 All documents and records held within the QMS, including FIC casework records, shall be controlled, traceable, reproducible, and uniquely identifiable.

13.2 FIC casework records shall be sufficiently clear and detailed to allow an independent practitioner to reproduce the examination or review and verify any opinions.

13.3 Documentation should comply with the FISWG Minimum Guidelines for Facial Image Comparison Documentation.

13.4 As a minimum, FIC casework records shall include:

13.4.1 Chain of custody for both physical and digital evidence.

13.4.2 Details of the method used and any known limitations (e.g., ACE-V and morphological analysis).

13.4.3 Details of any observed limitations of the imagery and potential impact on the result (e.g., resolution, compression, obstruction, pose variation).

13.4.4 Details of any image enhancements applied during the examination.

13.4.5 Any uncertainty associated with observations, measurements, interpretations or opinions, where applicable.

13.5 A record of case-related communications shall be maintained, including as a minimum:

13.5.1 Sender and recipient details.

13.5.2 Date and time of communication.

13.5.3 Method of communication.

13.5.4 Summary of content of communication.

13.6 All documentation and casework records shall be retained within the QMS, in accordance with the FSSP's retention policy.

14. Reporting

14.1 The QMS shall include procedures for the reporting of results from FIC activities and controlled reporting template documents.

14.2 All results from FIC activities shall be reviewed via quality control procedures

and authorized prior to release.

14.3 Results provided in reports shall be presented accurately, clearly, and include all information made available to the FSSP.

14.4 Reports shall include, as a minimum, the following details:

14.4.1 A unique identifier and version number are present on all components of the report.

14.4.2 The name and location of the FSSP.

14.4.3 The location where the activity was performed (if different from above).

14.4.4 The name and contact details of the customer.

14.4.5 Identification and details of the method(s) used.

14.4.6 Descriptions, including unique identifiers and the condition of items received, both physically and digitally.

14.4.7 Relevant details of the environment, equipment, and software used to undertake FIC activities.

14.4.8 Dates of the following:

14.4.8.1 Receipt of items at the FSSP.

14.4.8.2 The undertaking of FIC activities.

14.4.8.3 Quality control of the results.

14.4.8.4 The authorization of the results.

14.4.8.5 The issuance of the report.

14.4.9 Identification, including qualifications, training and experience, of all

practitioners responsible for FIC activities detailed in the report.

14.4.10 A statement that the results relate only to the items examiner and the information made available at the time.

14.4.11 The results of the FIC activities, including any associated uncertainty and limitations.

14.4.12 Any deviations from the method employed.

14.4.13 Identification of the person(s) authorizing the report.

14.4.14 Identification of when any results are supplied by an external party.

14.5 The report should specify when information was made available to practitioners undertaking the reported FIC activity.

14.6 Where there has been a difference in observations, interpretations and/or opinions that have impacted on the results, this should be included in the report.

14.7 The reporting of opinions shall meet the requirements of ASTM E620 Standard Practice for Reporting Opinions of Scientific or Technical Experts:

14.7.1 Opinions shall be reported as a strength of support for one of a pair of mutually exclusive competing propositions, according to OSAC 2022-S-0001 Standard Guide for Image Comparison Conclusions/Opinions.

14.7.2 Any limitations or uncertainty associated with the opinion shall be clearly stated in the report.

14.8 Reports shall meet relevant jurisdictional requirements.

14.9 When courtroom testimony is required, this should be monitored and recorded in the QMS, including an evaluation of the practitioner's communication of the results and explanation of the process.

14.10 All records relating to the reporting of results shall be retained within the QMS, in accordance with the FSSP's retention policy.

15. Equipment and Software

15.1 The QMS shall include a record of all equipment and software used to undertake FIC activities.

15.2 Equipment and software records shall include, as a minimum:

15.2.1 The manufacturer and model of equipment.

15.2.2 The manufacturer and application name of software.

15.2.3 Software or firmware version numbers.

15.2.4 Unique identifiers (e.g., serial numbers, license numbers).

15.2.5 Locations of equipment and software.

15.2.6 Calibration dates and results of past calibrations.

15.2.7 Any applicable testing results.

15.2.8 Reference materials used to support calibration and testing.

15.2.9 Maintenance plans.

15.2.10 Details, including damage, malfunction, modification, or repair.

15.3 The FSSP shall provide access to equipment and software required for the delivery of FIC activities.

15.4 Procedures shall be in place to ensure the proper functioning and planned

maintenance of equipment.

15.5 Where applicable, equipment (including monitors) shall be calibrated at planned intervals to ensure metrological traceability.

15.6 Monitors shall be set at a sufficient resolution and display settings to ensure accurate and consistent image presentation.

15.7 All critical software that impacts on the results of FIC activities shall be version-controlled.

15.7.1 Software updates shall be reviewed prior to authorization.

15.7.2 If the update is assessed as having a potential impact on the results of FIC activities, the update shall be validated/verified prior to authorization.

15.8 With the exception of the calibration of monitors, printers, and digital capture equipment (e.g., scanners), metrological traceability for calibrated quantitative measurement systems is generally out of scope for FIC.

15.8.1 Any quantitative elements used to support FIC activities (e.g., automated facial recognition technology) shall be traceable through calibration, documented procedures, software/firmware version control, and method validation/verification.

15.9 All records relating to equipment and software shall be retained within the QMS, in accordance with the FSSP's retention policy.

16. Environment

16.1 The QMS shall document the requirements of any environmental conditions necessary to undertake FIC activities.

16.2 The FSSP shall monitor, control, and record in the QMS any environmental conditions that can impact on the results of FIC activities.

16.2.1 Specifically, the FSSP shall identify, control, and manage any environmental factors that pose a risk to the health and safety of personnel.

16.3 The FSSP shall control access to facilities, equipment, software, documents and materials (both physical and digital) required to undertake FIC activities.

16.3.1 Access control shall be reviewed periodically at planned intervals.

16.3.2 The results of access control reviews shall be recorded in the QMS.

16.4 All records relating to environment and facilities shall be retained within the QMS, in accordance with the FSSP's retention policy.

17. Audits

17.1 The QMS shall include procedures for the management of audits.

17.2 FSSPs shall conduct audits of all aspects of the QMS, including FIC activities, at planned intervals to assess the effectiveness of the management system.

17.3 The schedule of audits shall be recorded in the QMS.

17.4 The results of audits shall be recorded in the QMS and include, as a minimum, the following details:

17.4.1 The scope and objectives of the audit.

17.4.2 The personnel involved in the audit.

17.4.3 The date(s) of the audit.

17.4.4 The results of the audit including corrective actions and non-conforming work.

17.4.5 Actions required to resolve corrective actions and non-conforming work.

17.4.6 The time required to resolve corrective actions and non-conforming work.

17.4.7 Records of the resolution of corrective actions and non-conforming work.

17.4.8 Authorization of the audit results.

17.5 The auditing of FIC activities shall include, as a minimum:

17.5.1 Casefile review, including:

17.5.1.1 At least 10 case files or 10% of cases completed annually, whichever is greater.

17.5.1.2 A variety of case types and FIC activities.

17.5.1.3 Cases resulting in inconclusive opinions.

17.5.1.4 Complex or nonconforming work.

17.5.1.5 Cases involving image processing and enhancement.

17.5.1.6 Cases involving the use of automated tools, where applicable.

17.5.1.7 Proportional representation of all competent practitioners.

17.5.2 Witnessing of competent practitioners undertaking FIC activities, including:

17.5.2.1 All FIC activities undertaken by the FSSP within the auditing schedule.

17.5.2.2 Genuine casework, where available.

17.5.2.3 Proportional representation of all competent practitioners.

17.6 Audits shall only be undertaken by personnel who are trained and competent to do so.

17.7 External auditors may also be used with appropriate authorization.

17.8 The results of audits shall be reported to management for review.

17.9 All records relating to audits shall be retained within the QMS, in accordance with the FSSP's retention policy.

18. Nonconforming work

18.1 The QMS shall include procedures for the identification and management of nonconforming work.

18.2 The FSSP shall implement the procedure for managing nonconforming work when any of the following apply:

18.2.1 The FIC activities undertaken do not conform to the relevant documented procedures.

18.2.2 The customer-agreed requirements have not been met (this does not include inconclusive results).

18.2.3 Facilities, equipment, or software has been used to undertake the FIC activities is outside the specified controlled (e.g., the equipment is not calibrated, or the incorrect version of software is used).

18.2.4 The FIC activities are undertaken by personnel who are not authorized as competent to do so.

18.3 The procedure for the management of nonconforming work shall specify:

18.3.1 Define the roles and responsibilities for managing nonconforming work.

18.3.2 Establish criteria for assessing the risk of nonconforming work and evaluating the impact on the result of FIC activities.

18.3.3 Criteria for assessing the acceptability of the nonconforming work.

18.3.4 Actions to resolve nonconforming work, including halting, repeating and/or recalling of work when necessary.

18.3.5 Authorization for the resumption of work.

18.4 Corrective actions shall be identified, recorded, and implemented to prevent the reoccurrence of nonconforming work.

18.5 Where necessary, the customer shall be notified of any nonconforming work and the potential impact on the result.

18.6 Nonconforming work shall be reported to management for review.

18.7 All documentation and records relating to nonconforming work shall be retained in the QMS, in accordance with the FSSP's retention policy.

19. Risks and Opportunities

19.1 The QMS shall include procedures for the identification and management of risks and opportunities associated with FIC activities.

19.2 The procedure to identify and manage risks and opportunities shall:

19.2.1 Support the delivery of intended results from FIC activities.

19.2.2 Provide opportunities to enhance and improve the performance of FIC activities.

19.2.3 Prevent or mitigate the impact of risks on performance of FIC activities.

19.3 The FSSP shall undertake proportional actions to address identified risks and opportunities and evaluate the effectiveness of these actions.

19.4 The actions to address risks and opportunities shall be recorded and authorized.

19.5 Risks and opportunities shall be reported to management for review.

19.6 The FSSP shall provide the means for customers to submit feedback and complaints.

19.6.1 All feedback or complaints received shall be recorded in the QMS.

19.6.2 Actions shall be taken to identify risks and opportunities from submitted feedback and complaints.

19.6.3 Feedback and complaints shall be reported to management for review.

19.7 All documentation and records relating to risks and opportunities shall be retained in the QMS, in accordance with the FSSP's retention policy.

20. Management Review

20.1 FSSP management shall review the QMS at planned intervals to evaluate its effectiveness.

20.2 The inputs and decisions resulting from management review shall be recorded within the QMS.

549 FISWG documents can be found at: www.fiswg.org