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Forensic sciences —

Part 2: Recognition, recording, collecting, transport and storage of items

Criminalistique —
Partie 2: Reconnaissance, enregistrement, collecte, transport et stockage des traces et autres éléments d'intérêt

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 272, *Forensic sciences.*

A list of all parts of the ISO 21043 series can be found on the ISO website.

Introduction

This document is part of a series which, when completed, will include the different components of the forensic process from scene to courtroom. This document establishes requirements designed to safeguard the reliability of results produced by the forensic process. It includes measures to protect items during the process of recognition, recording, collecting, transport and storage, which apply throughout the forensic process, both in the field and in the facility. The requirements are designed to protect items from loss, degradation, contamination and to minimize the negative impact of handling or packaging on downstream process.

Annexes A, B and C are for information only.

The notes given provide clarification of the text, examples and guidance. They do not contain requirements and do not form an integral part of this document.

Forensic sciences —

Part 2: Recognition, recording, collecting, transport and storage of items

1 Scope

This document specifies requirements for the forensic process focusing on recognition, recording, collection, transport and storage of items of potential forensic value. It includes requirements for the assessment and examination of scenes but is also applicable to activities that occur within the facility. This document also includes quality requirements.

This document is not applicable to procedures for the recovery of data from digital storage media which is covered by ISO/IEC 27037. However, the storage medium itself can yield additional items of forensic value (e.g. fingerprints or DNA).

Annex D shows the applicability of this document to the forensic process.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21043-1, *Forensic sciences — Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21043-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Abbreviations

DNA Deoxyribonucleic acid

PPE Personal Protective Equipment

5 General requirements

5.1 Quality

Policies and/or procedures shall be documented and include:

a) document control;

b) education and training requirements for personnel to ensure competence (see also 5.5);

c) how corrective action is undertaken, recorded and reviewed;

d) monitoring and recording conformance with policies and procedures;

e) quality checks including peer review;

f) record control;

g) responsibility, authority and role of personnel;

h) standard operating procedures;

i) use of external service providers.

Policies and procedures within the scope of this document shall be readily accessible to relevant personnel, who shall be familiar with and operate within these requirements.

5.2 Requests for service

Customer requests shall be recorded and considered when developing the forensic examination strategy.

NOTE The customer requests and the scope of assignments are not always clear before the forensic examination has been started.

The customer should be informed and/or consulted on significant changes to the requested examination.

5.3 Impartiality and confidentiality

Policies regarding impartiality and confidentiality within the organization, its personnel and all activities shall be documented.

Information obtained should not influence the impartiality of the forensic process. Any information obtained that potentially impacts the impartiality of the forensic process shall be recorded.

5.4 Health and safety

Health and safety risk assessments shall be undertaken throughout the entire forensic process with appropriate actions to mitigate or control relevant risks. Identified relevant risks should be recorded and taken into consideration throughout the forensic process, especially during the development of the examination strategy.

NOTE Further information regarding potential risks and handling are respectively included in Annex A and Subclauses 9.3 and 9.4.

5.5 Personnel

Roles and responsibilities of personnel shall be defined. Personnel involved in the forensic process, including external providers engaged by the forensic service provider, shall be competent to perform their role.

Requirements for competence of forensic service provider personnel shall include:

a) an understanding of the different forensic disciplines;

b) item handling, control, and chain of custody;

c) loss, degradation, contamination or alteration prevention (see Annex B for additional information);

d) recognition of items of potential forensic value;

e) specific examination and/or collection methods appropriate for the forensic process.

The minimum education, training and experience, and demonstrated competence shall be defined and documented.

Documented policies shall include maintenance of skills and expertise, such as continued education, ongoing training and reassessment of competence.

Competence of personnel shall be demonstrated and recorded.

5.6 Equipment and consumables

Equipment and consumables shall be suitable for intended use.

Forensic service providers shall identify equipment and consumables that can significantly impact the reliability of the result and have a documented procedure that should include:

a) calibration and/or performance checks;

b) cleaning;

c) contamination prevention;

d) maintenance;

e) operational usage;

f) traceability;

g) working environment and storage requirements.

Maintenance, calibration and performance checks of such identified equipment shall be recorded.

5.7 Detection, screening and enhancement techniques

Documented procedures shall be in place for the use of detection, screening and enhancement techniques including appropriate quality control measures.

Equipment and reagents used for detection, screening and enhancement purposes that can significantly impact the reliability of the result shall be checked for performance on a scheduled basis, with the exception of single use kits. Performance checks of single use reagents should be undertaken for each batch where possible. Results of performance checks shall be recorded and evaluated against defined performance criteria.

5.8 Facilities

Facilities shall be suitable for their intended use.

Forensic service providers shall have documented procedures to reduce the risk of contamination. This shall include maintaining a clean environment only accessible by authorized personnel.

NOTE Further information regarding contamination minimization is included in Annex B.

Forensic service providers shall have secure areas for the storage and handling of equipment and items.

6 Initial response at scenes

6.1 First response

The forensic service provider shall provide guidance to first responders to minimize loss, degradation, contamination or alteration to secure and preserve the integrity of the scene.

Guidance should be accessible to non-law enforcement professionals who can be called to attend a scene.

NOTE Further information in relation to actions of first responders is included in Annex C.

6.2 Forensic response

Relevant details of the incident should be obtained at the earliest opportunity to determine the nature of the forensic response required including the customer request(s), required personnel and equipment. This information should include the following:

a) the nature of the incident;

b) the location, time and date of the incident;

c) the location of any secondary scenes.

Upon attendance at the scene, the following shall be reviewed:

1) the need for cordons and whether any existing cordons are adequate;

2) any specific safety hazards associated with the scene or items and the level of the PPE to be used during the examinations (the protective equipment should prevent contamination of the scene as well as protect the examiner);

3) information regarding who has had contact or association with the scene and for what purpose including whether anything has been moved, altered or touched;

4) information from persons involved or witnesses potentially relevant to the incident.

A record of persons who have entered a scene should be maintained. This can be maintained by law enforcement or forensic service provider personnel.

7 Forensic examination

7.1 General

All forensic examinations shall be systematic, impartial, appropriately planned and documented to optimize recognition and collection of items of potential forensic value. Alternative hypotheses shall be considered.

A coordinated approach should be used for examinations that require a multidisciplinary and/or complex response.

The examination process should aim to establish the facts about the course of events regarding the incident. This process should aim to provide information including:

a) what happened;

b) where it happened;

c) when it happened;

d) how it happened;

e) who was/were involved.

7.2 Assessing a scene

The following factors should be considered when assessing a scene:

a) mechanisms for securing the scene including entry/exit routes;

b) areas within the scene that require examination;

c) environmental conditions that would require prioritizing the processing of certain areas or items;

d) examinations that need to be conducted before an item is handled and/or moved;

e) whether extra coordination and/or specialist advice, equipment or assistance is required.

7.3 Examination strategy

A strategy shall be developed to conduct the forensic examination. Such a strategy shall depend on the case circumstances, professional judgement and information at hand and shall include the following:

a) resources to be utilized;

b) health and safety risks and appropriate precautions including PPE (see Annex A for additional information);

c) protective measures required to prevent contamination including PPE (see Annex B for additional information);

d) appropriate search method(s);

e) items to be collected and requirements for collection;

f) sequence of examinations;

g) recording techniques to be utilized.

The examination strategy shall be reassessed as a result of new findings, insights, further information or change in circumstances.

7.4 Review and final closure of a scene

Prior to final closure of the scene, the examination strategy should be reviewed to determine if it has been completed and if the examination purpose has been fulfilled.

Consideration should be given to the potential for further examinations being required if circumstances change or further information comes to light. Security and integrity of the scene should be maintained if this is likely to occur.

The scene should be cleared to ensure that no collected items or equipment are left behind.

8 Recording

Items shall be recorded in their situational context prior to any disturbance. The recording should continue throughout the examination.

Records can include notes, diagrams, photographs or other electronic recordings. The records shall be of sufficient detail to allow the examiner or another appropriately trained examiner to report accurately:

a) scene location, description and environmental conditions when relevant;

b) location of items, findings and observations of forensic interest;

c) examinations that were undertaken, where and when they were undertaken and by whom;

d) results of the examinations, both positive and negative;

e) description of collected items, and unique identifiers associated with those items.

The forensic service provider shall have documented procedures to ensure all records that are subject to analysis or interpretation are suitable for the intended purpose.

EXAMPLE Procedures for photography of impressions.

9 Item handling and control

9.1 General

Documented policies shall be in place for the recognition, collection and subsequent management of items to ensure that:

a) the chain of custody is maintained and recorded;

b) the potential for analysis is optimized;

c) the risk of loss, degradation, contamination or alteration is minimized (see Annex B for additional information);

d) the security and integrity of the item is not compromised.

If a person within the forensic process suspects that an item might have been compromised, those circumstances shall be recorded.

If destructive handling or degradation of items is expected, then a detailed description of the item in its initial state shall be recorded.

9.2 Collecting

Documented procedures shall be in place for the collection of various types of items that are routinely collected.

Procedures should include:

a) how the item is to be collected, derived or sampled;

b) instructions for collection of reference samples, where necessary;

c) measures to minimize the risk of loss, degradation, contamination or alteration;

d) the quantity required to enable replicate testing where practical.

NOTE Further information regarding contamination minimization is included in Annex B.

9.3 Packaging

Documented procedures shall be in place for the packaging of routinely collected items to minimize risks of loss, degradation, contamination or alteration.

Procedures should include:

a) measures required to make items safe and secure, and to preserve them prior to packaging;

b) the need for separate packaging of items where the packaging of items together is likely to compromise them;

c) type of packaging to be used;

d) the manner in which the packaging is sealed and secured;

e) any measure that is required to preserve integrity, including during transport;

f) provisions for short and long term storage.

Hazardous items collected shall be placed in an appropriate container.

When no procedure exists for non-routinely collected items, the principles in a) to f) should be applied.

9.4 Labelling

Documented procedures shall be in place for labelling all items. The packaging and/or item shall be marked with a unique identifier that allows the chain of custody to be tracked. The unique identifier shall enable the following details to be traced:

a) a description of the item;

b) the location from which the item was collected;

c) the date the item was collected;

d) the name or identifier of the person who collected the item;

e) the case or investigation to which the item relates;

f) any other relevant information that can be of interest to downstream processes, such as time of collection.

Hazardous items collected shall be marked with an appropriate warning label.

Labelling may also include any specific storage or handling requirements.

9.5 Item transport and storage

Documented procedures shall be in place to describe how items collected should be registered, transported and stored to maintain item integrity and the chain of custody. The item shall be traceable throughout the entire forensic process.

Transport and storage conditions should minimize loss, degradation, contamination or alteration due to environmental conditions such as temperatures, radiation and moisture.

Storage conditions should be considered upon reception of any item with a view to possible long-term storage and potential for later examinations. If the item is prone to degradation, appropriate measures, for example sampling, should be undertaken prior to long-term storage.

EXAMPLE The item of interest can be sampled and the substrate discarded.

Documented policies shall include how to manage items that are received in compromised or inappropriate packaging.

10 Reporting

The report shall be accurate, clear, unambiguous, impartial and suitable for intended use. The report should be provided to the customer.

The report should be approved before delivery to the customer and peer reviewed when necessary.

Documented procedures shall be in place to ensure that the integrity of the written report is maintained, including updates, and that they are retained in a systematic, traceable and retrievable way.

Alterations to a report after delivery to the customer shall be recorded, and sent to the customer where applicable.

Annex A
(informative)

Health and safety considerations

Scenes can occur in any type of environment. As a result, the risks cannot be readily apparent and can be uncontrolled. Prior to entering a scene, first responding forensic personnel should undertake a scan of the work area and identify potential risks. While not exhaustive, the following hazards can be encountered at scenes:

a) biological;

b) chemical and drugs;

c) confined spaces;

d) electrical wiring (unsafe wiring practices, dangerously overloaded circuits);

e) exposure to UV light (Use of light sources);

f) extreme temperatures;

g) fire;

h) inhalable dusts;

i) living persons and animals associated with the scene (suspects, pets, livestock);

j) mantraps (live wiring, explosives, tripwires connected to loaded firearms);

k) physical (firearms, other weapons, sharps);

l) psychological (exposure to traumatic circumstances or images);

m) radiological;

n) structural (unsafe floors, walls, heights and overheads);

o) trip, slip or fall hazards;

p) unexploded devices.

Risks should be assessed and precautions should be appropriate to the risks involved. The guiding principle is the protection of oneself and others.

Unidentified materials should be handled in such a manner as to avoid ingestion, inhalation and dermal exposure.

The level of PPE and the circumstances requiring PPE to be changed should be determined to mitigate the following risks:

a) exposure of personnel to hazardous material and environments;

b) exposure of other persons to hazardous material the personnel might have been exposed to;

c) contamination of items.

PPE should be changed when necessary to minimize contamination.

Annex B
(informative)

Contamination minimization

Care should be taken to mitigate contamination between involved persons, items, facilities, equipment, forensic personnel and/or scenes. Where there is a risk for contamination:

a) items from victims, suspects, and scenes are collected and packaged separately;

b) when possible, items from victim and suspect should be collected by different individuals. If not possible, the individual collecting the items should change PPE between collection events;

c) collection equipment should be disposable and discarded after each use. If this is not possible, then the collection equipment is decontaminated after each use with an effective cleaning procedure;

d) collection equipment and packaging should be free of detectable contamination regarding the type of material to be collected and type of analysis to be conducted;

e) appropriate PPE is worn and changed when necessary to minimize contamination.