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**Standard for Scene Investigation and Reconstruction—**  
**Foundational Principles**



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## **Standard for Scene Investigation and Reconstruction— Foundational Principles**

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## Foreword

[This standard is not a substitute for more specific standards setting forth what is required to validate scene investigation and reconstruction methodologies and steps needed to mitigate contextual and other bias that impact scene investigation and reconstruction.](#)

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

This document was revised, prepared, and finalized as a standard by the Crime Scene Investigation (CSI) Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Crime Scene Investigation & Reconstruction Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science.

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

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

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**Keywords:** *crime scene, chain of custody, ethics, bias, safety, contamination, validity, scene investigation*

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# Standard for Scene Investigation [and Reconstruction—](#) [Foundational Principles](#)

## 1 Scope

This document provides general requirements for scene investigation [and reconstruction](#). This document establishes a framework for expected actions and decision-making based on foundational principles related to legal considerations, personnel safety, scientific reliability and validity, preserving context, maintaining evidence integrity, transparency, and managing bias.

## 2 Normative References

There are no normative reference documents. Annex A.

## 3 Terms and Definitions

For purposes of this document, the following definitions and acronyms apply.

NOTE In a situation that involves a potential criminal act definitions in section 3.1 through 3.35 would be preceded by “crime” (e.g., crime scene investigator).

### 3.1 scene

A place, an object, a person, or an animal that is subject to and/or requires forensic examination.

### 3.2 scene investigation

[Application of the scientific method to the](#) An examination of a scene to locate, document, [process](#), collect, and preserve items of potential evidentiary value.

### 3.3 scene investigator

An individual, however named, who is responsible for performing elements of scene investigation.

### 3.4 [scene reconstruction](#)

[The process to gain explicit knowledge of the series of events that surround a scene using deductive and inductive reasoning, physical evidence, scientific processes, and their interrelationships.](#)

### 3.5 [scene reconstructionist](#)

[An individual, however named, who is responsible for performing elements of a scene reconstruction.](#)

NOTE [For purposes of this document scene investigation and scene reconstruction are collectively called scene analysis; scene investigators and scene reconstructionists are called scene analysts.](#)

## 4 Requirements

### 4.1 General

Each scene is unique and requires scene [investigatorsanalysts](#) to continuously evaluate how to proceed with processing in a manner that is safe and best preserves the evidence and its context. All decisions made by a scene [investigatoranalyst](#) before, during, and after a scene is processed should consider the following:

- a) legal considerations;
- b) personnel safety;
- c) scientific reliability and validity;
- d) preserving context;
- e) maintaining evidence integrity;
- f) transparency;
- g) managing bias.

Though the requirements and recommendations listed in this document are important, some circumstances could require a scene [investigatoranalyst](#) to give greater weight to one over another. A deviation from the guidelines contained in this document shall be documented [and explained](#).

### 4.2 Legal Considerations

Scene [investigatorsanalysts](#) shall conduct themselves with the expectation that their work may be used in every step of the legal process, and therefore shall ensure that they comply with applicable legal standards including those of search and seizure.

### 4.3 Personnel Safety

Scenes can present a wide variety of physical, biological, chemical, and situational hazards with a level of personal risk of injury, illness, or exposure almost always present. Personal protective equipment (PPE) considerations should include, but are not limited to, protection of eyes and face, head, foot and leg, hand and arm, body (torso), respiratory system, and hearing; and protection against falls, and drowning.

In order to ensure that the scene [investigatorsanalysts](#) are not exposed to an unreasonable level of risk to personal safety they shall be provided with appropriate PPE and training or information (e.g., manuals, [SDSsafety data sheets](#), text books) necessary to assess the hazards and mitigate risks presented by the scene and by any processing tools, equipment, or reagents used.

#### 4.4 Scientific Reliability and Validity

Scene [investigatorsanalysts](#) shall use scientifically reliable and valid methods, practices, and analytical procedures based on best practices, peer-reviewed studies, and/or validated techniques prior to use on scenes.

#### 4.5 Preserving Context

Scene [investigatorsanalysts](#) shall document a scene to the extent possible in such a way that it preserves the context of the evidence to ensure others can later understand not just what was collected, but also where, how, and in what condition it was found.

#### 4.6 Maintaining Evidence Integrity

Scene [investigatorsanalysts](#) shall complete the following.

- a) Take appropriate steps to maintain evidence integrity by preventing contamination, tampering, alteration, or loss of evidence.
- b) Account for the integrity and possession of evidence by tracking its handling and storage from its point of collection to its next disposition.

#### 4.7 Transparency

The work of a scene [investigatoranalyst](#) generates the underlying basis for all subsequent analyses. The scene [investigatoranalyst](#) shall ensure the following.

- a) Document their specific and continual actions with the investigation including their actions on scene and their subsequent interactions with recovered evidence, data, and case information.
- b) Refrain from performing tasks for which they are not qualified, based on training, education, and experience.
- c) Document the circumstances and justification of any intentional deviations or acts of nonconformance from the requirements in this document.
- d) Upon discovery, document the circumstances of unintentional deviations, errors, omissions, or acts of nonconformance with the requirements in this document.

#### 4.8 Managing Bias

Scene [investigatorsanalysts](#) are uniquely positioned at the intersection of law enforcement and scientific investigations. ~~The scene investigator should ascertain facts in an objective manner, without regard~~[Information provided](#) ~~to internal and external influences and take steps to mitigate effects~~[the analyst during the course](#) of ~~biases in their work.~~

~~Incoming information an investigation~~ should be objectively evaluated continuously and applied in a contextual manner to guide the ~~applicationscene analysis. The analyst should remain open to all hypotheses and potential evidence regardless of the scientific method their working hypotheses; influences from internal and external sources may affect objectivity (e.g., time constraints, personal beliefs, contextual information about scene, suspect/victim).~~

## Annex A (informative)

### Bibliography

The following bibliography is not intended to be an all-inclusive list, review, or endorsement of literature on this topic. The goal of the bibliography is to provide examples of publications addressed in the standard.

- 1] Dror, Itiel E. Cognitive neuroscience in forensic science: understanding and utilizing the human element 370 *Philosophical Transactions of the Royal Society B*. August 2015.<sup>a</sup>
- 2] Forensic Science Regulator Guidance. Cognitive Bias Effects Relevant to Forensic Science Examinations. FSR-G-217 Issue 2 Crown Copyright 2020.<sup>b</sup>
- 3] ISO 21043-1:2018(E) Forensic sciences- Part 1: Terms and definitions.<sup>c</sup>
- 4] Lucas, D. The ethical responsibilities of the forensic scientist: Exploring the limits, *Journal of Forensic Sciences*, 34(3), 719–729, 1989.<sup>d</sup>
- 5] U.S. Department of Labor Occupational Safety and Health Administration. *Personal Protective Equipment* [OSHA Publication 3151-12R], 2004.<sup>e</sup>
- 6] United States Department of Labor, Occupational Health and Safety Administration. *Standard 1910 Subpart I Personal Protective Equipment* [Occupational Health and Safety Standards]<sup>f</sup>

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<sup>a</sup> Available from: <http://doi.org/10.1098/rstb.2014.0255>

<sup>b</sup> Available from: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/914259/217\\_FSR-G-217\\_Cognitive\\_bias\\_appendix\\_Issue\\_2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/914259/217_FSR-G-217_Cognitive_bias_appendix_Issue_2.pdf)

<sup>c</sup> Available from: <https://www.iso.org/obp/ui/#iso:std:iso:21043:-1:ed-1:v1:en>

<sup>d</sup> Available from: <https://www.astm.org/jfs12700j.html>

<sup>e</sup> Available from: <https://www.osha.gov/Publications/osha3151.pdf>.

<sup>f</sup> Available from: <https://www.osha.gov/laws-regs/regulations/standardnumber/1910>



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