

Terms Used in OSAC Friction Ridge Subcommittee¹ Documents

Administrative Information: Records -- such as evidence receipts, chain of custody, and submission forms (electronic or hard copy) -- that do not constitute data or information resulting from examination work.

Administrative Review: An evaluation of a report and/or supporting documentation for consistency with laboratory policies and for editorial correctness.

Amended Report: A report used to document any subsequent modifications, particularly those that affect or correct an original result or interpretation.

Analysis (phase of the Examination methodology): The interpretation of observed data in a friction ridge impression in order to categorize its utility.

Blind Verification: A type of verification in which the subsequent examiner(s) has no knowledge of the original examiner's decisions, conclusions or observed data used to support the conclusion.

Case Record: The file (electronic or hard copy) in which all documentation and case relevant information is kept and maintained.

Cognitive Bias: A set of influences that may affect the reliability and validity of one's observations and conclusions.

Comparison (phase of the Examination methodology): The search for and detection of similarities and differences in the observed data between two potentially corresponding friction ridge impressions.

Competency: Possessing and demonstrating the requisite knowledge, skills, and abilities to successfully perform a specific task.

Complexity (of a Comparison): A characteristic of a comparison in which the attributes of one or both impressions may require additional consideration and quality control measures as it relates to the evaluation of a source conclusion. Comparisons can be designated as high complexity, low complexity, or non-complex.

Complexity (of an Impression): A characteristic of an impression whose attributes may require additional consideration and quality control measures. Impressions can be designated as high complexity, low complexity, or non-complex.

¹ This is not an official OSAC Friction Ridge Subcommittee (FRS) document. This informal list was put in PDF format by FRS member Ed German leveraging the work of other FRS members. See documents of the Friction Ridge Subcommittee, Physics/Pattern Interpretation Scientific Area Committee of the Organization of Scientific Area Committees for Forensic Science at <https://www.nist.gov/organization-scientific-area-committees-forensic-science/friction-ridge-subcommittee>

Confirmation Bias: The tendency to search for data or interpret information in a manner that supports one's preconceptions, expectations, or desires.

Conflict: A condition in which two or more examiners disagree on a suitability decision or source conclusion.

Consensus opinion: A type of examination in which a reported decision or conclusion is determined that reflects the collective judgment (e.g., majority) of a group of examiners.

Consensus Review (Consensus Opinion): A type of examination in which a reported decision or conclusion is determined that reflects the collective judgement (e.g., majority) of a group of examiners.

Contextual Bias: A deviation in human judgment caused by exposure to information that is either irrelevant to the judgmental task or inappropriate for consideration.

Control: Material of established origin used to evaluate the performance of a test or comparison. Or A test performed to demonstrate that a test method works correctly and to ensure that data are valid.

Corrective Action: An action to eliminate the cause of a non-conformity and to prevent recurrence. NOTE: A corrective action is taken to prevent recurrence whereas a preventive action is taken to prevent occurrence.

Correspondence: an observation of friction ridge details and other information in agreement in terms of their type, orientation, and relative spatial relationship to each other; an accumulation of similarities between two impressions resulting in an overall conformity or agreement.

CSI Effect: Perception of the near infallibility of forensic science in response to popular media.

Customer: Client, authority, organization, or person(s) requesting the forensic services.

Discriminability: The degree to which information in an impression can be used to reliably distinguish between impressions made by different sources. The discriminability of an impression encompasses its features' quantity, spatial arrangement, clarity, and rarity.

Evaluation (phase of the Examination methodology): The weighting of the aggregate strength of the observed similarities and differences between the observed data in the two friction ridge impressions in order to formulate a source conclusion.

Examination: The act or process of observing, searching, detecting, recording, prioritizing, collecting, analyzing, measuring, comparing, and/or interpreting.

Examiner (Friction Ridge)/Competent Friction Ridge Examiner: An individual who has successfully completed their FSP's training program and has demonstrated to the FSP that they possess the knowledge, skills, and abilities to perform the tasks required of their current position. An individual authorized to conduct friction ridge examinations for the FSP by observing and interpreting data, making decisions, forming conclusions and opinions, issuing reports and/or providing testimony.

Exemplar Impression: An impression to which a questioned impression is compared; it can include impressions from an unknown source or a known source.

Forensic Science: The application of scientific principles and techniques to matters of criminal justice especially as relating to the collection, examination, and analysis of physical evidence.

Forensic Service Provider (FSP): A forensic science entity or forensic science practitioner providing forensic science services.

Forensic: Related to methods, techniques and processes used to establish conclusions and/or opinions, facts, and findings which can be used for legal proceedings.

Friction Ridge Detail/Features: The combination of ridge flow, ridge characteristics, and ridge structure of friction ridge skin, as observed and reproduced in an impression. A large subset of the observed data used to compare and interpret similarity or dissimilarity between two impressions.

High Quality Impression: An impression with observed data that are unambiguous and self-evident due to high clarity and quantity.

Interpretation: Explanations for the Observations, Data, and Calculations.

Minutia: The point where a friction ridge begins, terminates, or splits into two or more ridges. A subset of the friction ridge detail/features traditionally consisting of ridge endings, bifurcations, and dots/short ridges used to compare and interpret similarity and dissimilarity between two impressions.

Nonconforming work: Work that does not comply with FSP policies and procedures.

Observation: Recognizing and noting an occurrence.

Observed Data: Any demonstrable information observed within an impression that an examiner relies upon to reach a decision, conclusion, or opinion. This has historically been expressed as "features" or "minutiae," but the use of the broader term "observed data" is inclusive of other types of data that may be considered beyond minutiae, such as quality, scars, creases, edge shapes, pore structure, and other friction ridge features.

Open (non-blind) verification: A type of verification in which the subsequent examiner has access to the original examiner's decisions, conclusions or observed data used to support the conclusion.

Opinion: View, Judgement, Belief – Takes into consideration other information in addition to Observations, Data, Calculations, and Interpretations.

Pattern force area: A region of friction ridge skin in which minutiae of a particular type are forced to form due to the flow of the ridges. For example, in the outflow of a loop, many ridges are converging, which necessarily forces many ridge endings as space runs out. Because the pattern forces these minutiae to form predictably and their configurations are more common and less random, they are properly assigned less weight than more randomly distributed minutiae toward an association between two impressions.

Peer Review: An independent evaluation of a scientific publication or other work product by a qualified second party to evaluate the methods, claims, and conclusions, and interpretations therein before dissemination.

Positive controls confirm that the procedure will produce the expected result. Negative controls confirm that the procedure does not produce an unintended result.

Preventive Action: An action to eliminate the cause of a potential non-conformity or other potential undesirable situation. NOTE: A preventive action is taken to prevent occurrence whereas a corrective action is taken to prevent recurrence.

Quality assurance measures: Steps taken by an FSP to detect and correct nonconforming work. This may include, but is not limited to, root cause analysis, additional verification, non-conformity assessment, audits and corrective and/or preventative actions.

Questioned Impression: An impression used for comparison against an exemplar impression; it can include impressions from an unknown source or a known source.

Rarity (of a feature type): Rarity of a type of feature of friction ridge skin refers to how frequently that type of feature is encountered in a group of people (its prevalence), either in isolation or in conjunction with other information about its local context. For instance, the prevalence of a type of feature could be affected by its proximity to a pattern force area, the finger number or palmar region on which it is located, or the pattern type in which it is located.

Reliability, Evidentiary/Legal: Credibility and trustworthiness of proffered evidence.

Reliability, Statistical: Consistency of results as demonstrated by reproducibility or repeatability.

Result: The product of the forensic service provider. This term is broad and includes Observations, Data, Calculations, Interpretations, and Opinions.

Similarity: an observation that two impressions share a general likeness of details; not to be confused with correspondence.

Source Conclusions: Findings or statements expressed as opinion and made by an examiner after interpretation of observed data. They may offer support for one proposition over another. One of the five following conclusions: Source Exclusion (EXC), Support for Different Source (SDS), Inconclusive/Lacking Support (INC), Support for Same Source (SSS), or Source Identification (ID).

Source: an individual from which an item (e.g., crime scene impression) originates.

Stakeholder (interested party): A person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.

Strength of the evidence: A means of describing the weight of support the evidence lends to one source proposition over the other. The strength of the evidence is often represented as a Bayes Factor (also known as a likelihood ratio) and may be described verbally or numerically.

Suitability Decisions (Utility Decisions): A decision made by an examiner in accordance with FSP policy and/or procedure as to whether or not an impression will proceed to the next step in the examination process. Examples of these decisions may include "Suitability for ABIS/AFIS Searching Decisions", "Suitability for Comparison Decisions" or other utility decisions.

Suitability for ABIS searches: The utility decision that an impression contains sufficient observed data to be utilized for an ABIS database search. The designation is often referred to as "suitable for ABIS" or "suitable for automated searching".

Suitability for Comparison Decision (Suitability for Source Conclusions): A decision made by an examiner in accordance with FSP policy and/or procedure, that a friction ridge impression contains sufficient observed data to be utilized for comparison and a Source Conclusion can potentially be reached. This designation is often referred to as "suitable for comparison" or "of value for comparison".

Supplemental Report: A report used to document additional work performed with subsequent reporting of results.

Target Group: A specific set of friction ridge features selected as a starting point during comparison.

Technical review: 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.

Tolerance: A means of expressing the variation that is allowable in two impressions originating from the same source due to the elasticity of the skin and differences in deposition and lateral pressure, twist, substrate, matrix, development medium, environmental factors, or post deposition damage. Two impressions within the expected variability are said to be "within tolerance" while two impressions that are outside are said to be "out of tolerance".

Utility: The usefulness of an impression for a further step in the examination process, such as comparison or ABIS entry.

Validation Test: An evaluation to determine if a tool, technique, or procedure functions correctly and as intended.

Validation: A process of evaluating a system, method, or component, to determine that requirements for an intended use or application have been fulfilled.

Verification: Confirmation, through either re-examination or review of documented data by another examiner, that a conclusion or opinion conforms to specified requirements and is reproducible. NOTE: "Specified requirements" are the FSP's policies and procedures relating to Analysis, Comparison and Evaluation of friction ridge impressions.

See OSAC Friction Ridge Subcommittee Updates, Documents and more online at

<https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/physicspattern-interpretation>