

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
259		Ballot Comment	When this document is revised, we should consider making the two competing propositions consistent between 3.6 and the rest of the document. I think "person X source/person X not source" is preferable to "same source/different source."		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
260		Ballot Comment	I am not comfortable voting on this document until the public comments have been reviewed.		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
261		Ballot Comment	I feel the document needs some modifications.
 1) clarify vague statements
 2) remove overstatements
 3) remove statements that conflict with other statements within the document
 4) remove items that do not adhere to science (the ASB mission statement states that the mission is to provide accessible highest quality science based consensus forensic standards)
 5) remove areas that do not conform to the ASB Manual.
 -The ASB Manual says:
 A best practice is a method or technique that has been generally accepted as superior to any alternatives because it produces results that are superior to those achieved by other means or because it has become a commonly preferred way of doing things, e.g., a preferred way complying with legal or ethical requirements.
 -The techniques described in the document are not 'accepted as superior to alternatives because it produces results that are superior to those achieved by other means'. It has not been tested against other means to ensure it is superior.

		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
262		Ballot Comment	I would like to see public comments before approving our draft document.
 I've also reviewed Michele Triplett's comments and feel those also need to be discussed before approval since they are pretty specific.		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
263		Ballot Comment	I would like to see/review public comments prior to voting on this document.		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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264		Ballot Comment	I am not sure I understand the purpose of this ballot. The document has already been put forth for public review and comment. At this stage, the next reasonable timeframe for FRCB to offer a vote is after public comments have been received and the working group has adjudicated those comments and offer a "final" version of the document for approval.		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
101		E&T	In 2017, the American Association for the Advancement of Science (AAAS) issued a comprehensive report on the scientific status of latent fingerprint examination (AAAS, 2017). A key conclusion of that report was that latent print examiners should avoid saying or implying that they have the ability to narrow the source of a latent print to a single person: Examiners may well be able to exclude the preponderance of the human population as possible sources of a latent print, but there is no scientific basis for estimating the number of people who could not be excluded and there are no scientific criteria for determining when the pool of possible sources is limited to a single person (AAAS, 2017, p. 5, 9, 21). This important conclusion is consistent with conclusions reached by other authoritative scientific bodies, such as the NIST Expert Working Group on Human Factors in Latent Print Analysis (2012), and has remained unchallenged and uncontradicted in the scientific literature. The AAAS report also concluded that members of the public are likely to hold misconceptions about latent print examination that have been shaped by decades of overstatement, and particularly by unsupportable claims that latent print examination is 100% accurate and is capable of narrowing the source of a fingerprint to a single finger. In light of those misconceptions, the report urged latent print examiners to “acknowledge: (1) that the conclusion being reported are opinions rather than facts (as in all pattern-matching disciplines), (2) that it is not possible for a latent print examiner to determine that two friction ridge impressions originated from the same source to the exclusion of all others; and (3) that errors have occurred in studies of the accuracy of latent print examination.” AAAS has reviewed the ASB Best Practice Recommendations for Articulating a Source Identification in Friction Ridge Examination. While these recommendations are a step in the right direction (relative to the unsupportable reporting practices of the past), we think they should be improved by making a few changes, modifying some of the language, and		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
226	General		We commend the OSAC Friction Ridge Subcommittee and ASB's Friction Ridge Consensus Body for working to create an interim solution for reporting and presenting latent print evidence. Although the discussions concerning the presentation of latent print evidence are far from over, this document thoughtfully presents the changing views of latent print testimony and provides explanations concerning the state of the science and of the expectations we may have of practitioners that perform this task (see, for example, Sections 4.2.2.2, 4.2.2.3, 4.2.2.3.2).	No solution required.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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227	General		As stated in the foreword, the intention of this document is to serve as a temporary measure while conversations over reporting and presenting associative conclusions continue. However, the document as written introduces and integrates terminology and concepts that apply to a likelihood ratio (LR) framework, something that does not address the stated purpose of reporting the highest level of association for fingerprint analysis. If a weight of evidence method is in fact a likelihood ratio, these recommendations cannot have the intended widespread impact the authors hoped for since a limited number of laboratories are using this approach. The majority of laboratories would need to create new SOPs in order to use these recommendations, which does not achieve the goal of bridging where practice of fingerprint examination was and where it is headed. If the goal is for laboratories to adopt the same terminology for a categorical conclusion ("source identification") this must be achievable without having to use a LR form of analysis. Additionally, we hope that members of the OSAC and ASB would understand how difficult it is to offer comments and solutions for reporting and testimony well in advance of the development of standards, guidelines, or recommendations that describe the procedure or methods reporting and testimony standards are meant to summarize.	The use of the LR framework for fingerprint analysis needs to be addressed in a separate document. Again, the current document under review is only meant to be an interim document that addresses the communication of the highest level of association that can be achieved through fingerprint analysis. If "source identification" can only be achieved by using a LR form of analysis, there needs to be prescriptive documentation that explains the cited research and establishes a framework for how this is achieved. In doing so, recognize that this does not promote uniform terminology that can be used by the entire community, just those that have a LR framework in place. If the goal is for the community to adopt the same terminology or categorical conclusions, these recommendations should remove all mention of statistical analysis and focus on the definitions and descriptions needed for "source identification." If the document is going to remain in this current format, commentary on this document should stop until there is a document (standard, guideline, recommendation) that describes the use of the LR framework in friction ridge analysis. Both documents should be evaluated simultaneously to avoid the possibility of confusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
77	General	T	The OSAC Friction Ridge Skin Subcommittee is among the most progressive units of the organization. The same careful attention to wording and ways to express the results of comparative examinations of specimens would be of benefit to many other fields. However, I am concerned that redefining a "source identification" as a statement of "substantial support" (§ 3.8 et seq.) for the identification of an individual while insisting that this redefinition is not "a weight-of-evidence approach" (Foreword ¶4) will be confusing and might even be seen as disingenuous.	Use the thinking reflected in this document to devise a broader set of guidelines with better terminology.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
136	All	T	The intent is to reduce misleading/overstated statements but the recommendations create different overstatements ('Source ID' still implies an ID; 'substantially stronger' is selling the conclusion - it is not a criteria for a conclusion; and 'informed' opinion is putting a weight that is assumed). This is salesmanship, not science. The document promotes techniques that have not been validated (allowing speculation and promoting it as a probability, and the use of propositions), which does not encourage good science, it shows a lack of knowledge regarding scientific principles. Doing so does not improve scientific knowledge and/or practices, it promotes a lack of adherence to scientific protocols.	Ensure concepts being recommended adhere to scientific protocols. This can be done by giving SCIENTIFIC references to concepts, not references that support the concept trying to be sold. My recommendation is to remove new concepts that have not been tested (i.e., remove methodology and leave that for a methodology document) and only recommend those items that are outside the bounds of science (100%, zero error rate, limitations, etc.).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
153	All	T	a) The word 'source' is used throughout the document and seems to be being used differently in different places. b) It is unclear if 'source identification' is a term within itself or if it is the meaning is 'an identification to a source' (is source in 'source identification' intended to be the meaning of 'source')?	a) define the word source, and then go through the document to ensure the word is appropriately used in each instance. b) clarify if source identification does/doesn't mean 'an identification to a source'. c) I am recommending both a and b be performed. Clarifying the definition of source identification alone does not solve this problem.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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187	All	T	The ASB Draft Best Practices Recommendation for Articulating a Source Identification in Friction Ridge Examinations ("the document") fails to address the criticisms made by and the recommendations of the American Association for the Advancement of Science, the American Statistical Association and the President's Council of Advisors on Science and Technology, among others, with respect to statements of source attribution and affirmatively reporting limitations, estimated error rates and estimates of uncertainty. (See American Association for the Advancement of Science, Forensic Science Assessments: A Quality and Gap Analysis, Latent Finger Examination https://mcmprodaas.s3.amazonaws.com/s3fs-public/reports/Latent%20Fingerprint%20Report%20FINAL%209_14.pdf?i9xGS_EyMHnPLG6INIUYzB66L5cLdlb; American Statistical Association, Position on Statistical Statements for Forensic Evidence, Presented under the guidance of the ASA Forensic Science Advisory Committee, January 2, 2019. https://www.amstat.org/asa/files/pdfs/POL-ForensicScience.pdf; President's Council of Advisors on Science & Technology, Forensic Science in the Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods, (Sept. 20, 2016), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf; President's Council of Advisors on Science & Technology, An Addendum to the PCAST Report on Forensic Science in Criminal Courts, https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensics_addendum_finalv2.pdf; see also Kafadar, Karen, Statistical Issues in Assessing Forensic Evidence 2015. https://onlinelibrary.wiley.com/doi/abs/10.1111/insr.12069; Simon A. Cole, A Discouraging Omen: A Critical Evaluation of the Approved Uniform Language for Testimony and Reports for the Forensic Latent Print Discipline, Georgia State University Law Review, Vol. 34, No.4, pp. 1103-1128, 2018, UC Irvine School of Law Research Paper No. 2018-53 https://ssrn.com/abstract=3208931).	Eliminate the term "source identification"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
188	All	T	The document continues to promote and permit a conclusion, "Source Identification", that is not scientifically defensible and the document fails to create a clear affirmative duty to include, as part of any conclusion, a statement of the limitations, estimates of uncertainty, or a statement regarding the absence of any data from which to estimate uncertainty or error rates.	Eliminate the term "source identification"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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189	All 4.9	T	"Source Identification" (3.8) is not meaningfully different from the list of terms the document purports to prohibit in section 4.9.2.3. And the document cites to no evidence that audiences will accord this term any less weight than given to the previously used and now prohibited terms (e.g. "match", "identification to the exclusion of all others"). Instead there is evidence to the contrary that jurors do not distinguish between these terms. (Kadane, Joseph B. and Koehler, Jonathan J, Certainty & Uncertainty in Reporting Fingerprint Evidence https://www.amacad.org/publication/certainty-uncertainty-reporting-fingerprint-evidence; see also McQuiston-Surret, Dawn & Saks, Michael, Communicating Opinion Evidence in the Forensic Identification Sciences: Accuracy and Impact, 59 Hastings L.J. 1159, 1188-89 (2008)). While the document recognizes that there is a "debate over proper reporting and presentation of associative conclusion" and declares that it is a "temporary document" until the debate is "settled", the document ultimately chooses to ignore the debate and instead puts a linguistic spin on past practice. This choice will not advance latent print examination research and practice and will instead allow most to ignore the debate.	The document should not endorse "Source Identification". Instead, until there is sufficient data from which empirical estimates can be derived, the only permitted conclusion that the examiner should make is cannot exclude the known print as the source of the latent.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
27	Title	T: "...in Friction Ridge Examinations"	There is more to the Examination than just Friction Ridge Examinations. Friction Skin has ridges, furrows, creases, scars, warts, etc. Plus, we examine Impressions, not just ridges.	Change "Friction Ridge" to "Friction Skin" within the title. New title: "Best Practice Recommendations for Articulating a Source Identification in the Examination of Friction Skin Impressions"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
138	Title	T	In the ASB Manual for Standards it defines a Best Practice as: 3.9.1 Best Practice Recommendation BPR A best practice is a method or technique that has been generally accepted as superior to any alternatives <u>because it produces results that are superior to those achieved by other means</u> or because it has become a commonly preferred way of doing things, e.g., a preferred way complying with legal or ethical requirements. The techniques described in the document are not 'accepted as superior to alternatives because it produces results that are superior to those achieved by other means'. It has not been tested against other means to ensure it is <u>superior</u>.	Ensure all recommendations within this document comply with the requirement of BPR's in the ASB Manual for Standards.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
137	Title	T	The title does not reflect the scope because it only mentions articulating positive conclusions. The scope mentions reasoning and founding principles.	Change the title to reflect the content of the document. The document is regarding reasoning, foundational principles and the conclusion; not just how to articulate the conclusion. Or Change the scope and the document to only be about how to articulate the conclusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
28	Fwd	E	If this is only a temporary measure while debates are still occurring over the proper reporting and presentation of conclusions, I do not understand the reason for the entire document. This document will only produce chaos. What documents have been accepted by OSAC and ASB to support what has been presented in this document? I find it baffling that articulation of identifications is being presented prior to documents being accepted to what an acceptable exam process and exam conclusion is.	Do not go forward with this document. Scrap it. Wait for the foundation documents of the Examination Process, Ranges of Conclusions, etc., to be produced before trying to Articulate what has not yet been determined.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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78	Fwd	T	A scan of the 2009 NRC Committee report for the word "opinion" reveals no criticism of presenting observations or conclusions as "facts" rather than "opinions." Nor is there a clear distinction in the law of evidence between (1) testimony that something is a fact and (2) testimony that something is a fact in the opinion of the witness or author of a report. See, e.g., Beech Aircraft Corp. v. Rainey, 488 U.S. 153 (1988); Advisory Committee Note, Fed. R. Evid. 701.	Delete the part of the sentence that refers to "results as facts, rather than expert opinions,"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
79	Fwd	T	What is the basis for the assurance that "[v]ery shortly after the release of the NRC report, the discipline responded with strong recommendations that these terms [such as "individualization"] not be used in expressing friction ridge conclusions"? A February 2009 memo from the IAI president to its membership merely states "It is suggested that members not assert 100% infallibility (zero error rate) when addressing the reliability of fingerprint comparisons." A 2009 SWGFAST Position Statement Regarding the NAS Report — Strengthening Forensic Science in the United States: A Path Forward — Committee on Identifying the Needs of the Forensic Science Community, National Academy of Sciences uses and defends the term "individualization." The 2011 NIJ Fingerprint Sourcebook expresses no qualms about the term. The 2011 SWGFAST Standards for Examining Friction Ridge Impressions and Resulting Conclusions (Latent/Tenprint) endorses "individualization."	Either document the claim that "the discipline" responded "very shortly" with recommendations to abandon all the terms quoted in the paragraph or delete this paragraph.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
129	Fwd	E	Although this section contains important history about the development of this document, it should not be included as part of the actual final standard.	Delete the Forward section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
139	Fwd	T	The forward states: "the entire practice of stating or implying, regardless of the wording used, that the potential donor pool could be reduced to a single source was <u>strongly condemned</u> ." This is not true, the NAS states on page 121, "it seems plausible that a careful comparison of two impressions can accurately discern whether or not they had a common source."	a) Remove this statement because it is inaccurate. b) If this document is based on an inaccurate perception then perhaps this document is not needed as much as those who wrote it thought. Consider whether this document is really needed if the original premise was/is inaccurate.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
152	Fwd	T	The forward states this document "describes a way of articulating the reasoning and foundational principles behind an <u>identification</u> ," however, the definitions and the note in 4.9.2.2.1 indicate the term identification is not allowed. The document is contradicting itself.	Change the wording so that it is clear that the word identification is being used differently in the forward vs in 4.9.2.2.1.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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249	Fwd		The foreword to the proposed standard explains that the Best Practice Recommendation for Articulating a Source Identification is “a temporary measure” to provide “guidance on what should be communicated” “within a logically consistent framework” for “identifications” that a “majority of laboratories continue to report.” It distinguishes the traditional conclusion of a positive association between pairs of prints because they come from “a single source” from “a weight-of-evidence approach.” The latter presumably would limit examiners to reporting and testifying to how strongly the features observed in the prints support the “single source” conclusion. As statisticians who have studied the logic of forensic inference, we are concerned that the document does not fulfill its stated goal of describing “a way of articulating the reasoning and foundational principles behind an identification.” The document seems to invoke Bayesian decision theory to supply the desired “logically consistent framework,” but it does not cover critical elements of the theory and does not relate the theory to the decision process it describes. Specifically, it does not address the role of prior probabilities and utilities in coming to a decision. Its discussion of the remaining component — a Bayes factor — lacks clarity. Moreover, the document is not entirely consistent in its phraseology and recommendations, and some definitions diverge from more established and standard usage in the literature on forensic inference and statistics generally.	Proposed Resolution: Because these difficulties are pervasive, it is not feasible to supply a lineby-line set of edits to the existing document. Therefore, we have not commented on stylistic (editorial) issues. We will offer only our more substantive ideas—“technical” comments—linked to specific sections. Our basic conclusion, however, is that the ASB should table this particular document to allow the OSAC subcommittee, with any desired help from the STG, to submit a statistically sounder version.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
140	ToC	T	The table of contents says that 4.2-4.8 are recommendations however 4.2-4.8 are statements (there is not one should statement within 4.2-4.8). This indicates that all the items in 4.2-4.8 are normative statements not recommendations.	If 4.2-4.8 are recommendations then 'should' statements need to be in the statements. If these are normative statements then 4.2-4.8 should be moved to that section of the document. Change the table of contents to indicate which of the above options is taken. If these statements are considered to be recommendations due to the title of the document (the document is labeled a BPR), then I request a review of this decision by the ASB Board of Directors because I don't think it is appropriate to list statements that do not have 'should' within them as recommendations. I also do not think this is an issue that should be voted on at the CB level, I believe the issue needs to be addressed at the ASB BOD level.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
80	1	E	In what way does the “document take[] into consideration the current status of professional practices, legal decisions, and scientific research”? Are there trade-offs between them? Which legal decisions inform the articulation and how? Are the practices, decisions, and research that have been considered limited to the latent print community or are they are broader?	Delete the sentence (or elaborate).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
29	1	T	No, it does not. In the Foreward, the document states everything is being debated. I agree, everything is actively being debated. So, this document is trying to predict the future when the present has not been finalized. Please do not predict the future when the present has not been determined.	"This temporary document takes into consideration the predicted future status of professional practices, legal decisions, and scientific research."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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141	1	T	The scope indicates this document considers the current status of the discipline and scientific research however, using propositions has not been established as the current method or researched sufficiently to be considered a best practice. Most examiners have no understanding of what a proposition is and therefore propositions cannot be the current status.	Remove any reference to propositions and leave that topic for the methodology document. Or change the scope to remove 'current status' and 'research'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
142	1	T	a) The scope indicates this document is not for inconclusive or exclusion decisions. However, the majority of the document is discussing reasoning and foundational principles and therefore it is regarding how all conclusions are arrived at. (only the 4.8 and part of 4.9 are about positive identifications; 4.0-4.7 is regarding all conclusions. Do the recommendations in 4.9.2.3 b, c and d not apply to all conclusions as well?	Since the majority of this document is regarding reasoning and foundations, either change the scope and title to indicate the true content or if the intent is to be about articulating ID's then remove the reasoning and foundational aspects.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
110	1	E	First sentence is confusing and unclear	Reword to something such as "This document offers guidance on how to articulate the reasoning and foundational principles behind a friction ridge examination arriving at a conclusion of 'source identification'."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
57	2	E	Incorrect use of the comma separating the words 'Annex B' and 'Bibliography'	remove commas and insert parentheses () "Annex B (Bibliography) contains..."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
228	3	E/T	Clarity is mentioned several times throughout the document, but it is not defined.	Add a definition for clarity to section 3.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
30	3	T	If OSAC and ASB produces individual documents in which common terms are defined according to a particular document, we are all in trouble. Why cannot OSAC and ASB produce a glossary that defines words that are used throughout OSAC and ASB? How are these words used in other OSAC and ASB documents? If you cannot answer, chaos will result.	Refer to the one OSAC or ASB Glossary for definitions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
58	3	E	Colon needed after the word 'apply'	insert necessary colon, remove period	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
130	3	E, T	This section has too many words that are defined elsewhere by more authoritative sources. Further, the OSAC-FSSB has been grappling with creation of a lexicon. This section makes it difficult to obtain FSSB approval as it forces adoption of these definitions.	Delete the entire section or only include words that are unique to this discipline, like "pattern force area."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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144	3.1	T	Since there is no methodology document, it has not been established that there is an evaluation stage. In hypothesis testing, this is called the decision making phase.	Remove 'after completing the Evaluation phase of the friction ridge comparison process.' It is unnecessary to the definition of conclusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
146	3.1	T	The statement below is outside the bounds of science. Science does not put weight in personal knowledge or beliefs, it puts weight in what can be demonstrated. Promoting personal knowledge and/or beliefs is the same as relying on the practitioners confidence (which is also outside the bounds of science). "Conclusions describe an examiner's knowledge, information, or belief about whether propositions are true or false."	Remove the sentence regarding personal knowledge, information or belief' since it is outside the bounds of science. Leave the definition to be, 'Findings or statements made by an examiner.'	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
145	3.1	T	Since there is no methodology document (and there is no research indicating that propositions are used), it has not been established that propositions are used or that they are a best practice.	Remove, 'They may offer support for one proposition over the other. Conclusions describe an examiner's knowledge, information, or belief about whether propositions are true or false.' since this is not necessary for this definition.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
143	3.1	T	The definition of a conclusion states, 'Findings or statements expressed as opinion and made by an examiner after...' There is no research or evidence on how findings are expressed. 'Legally' conclusions are considered to be opinions but that is not the same as saying they are expressed as opinions.	Remove 'expressed as opinions and' from this sentence. It is unnecessary for the sentence.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
229	3.1	E/T	Discussion of propositions should be removed from this definition.	Remove the second sentence. Edit the third sentence to read, "Conclusions describe an examiner's opinion of the correspondence of friction ridge detail and the discriminability that exists between friction ridge impressions." If the likelihood ratio is going to remain as the determining factor for giving a conclusion, it should be stated that different propositions would result in different conclusions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
50	3.1	T	Use of the term "belief" in the last sentence defining "conclusions" is inconsistent in explanation sections; 'belief' often confused with 'subjective' but explanation uses term 'objective' (4.9.2.3.d)	Other portions of document use verbiage of "informed opinion"; this wording would allow for consistency	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
81	3.1	T	A conclusion is not a statement of support for a conclusion. In logic, a conclusion is the final statement in a list of propositions. The list is called an argument. The propositions preceding the conclusion are called the premises. In deductive logic, the argument is valid if the conclusion is true whenever the premises are true. In inductive logic, the argument is sound if the probability of the conclusion is large given that the premises are true. The premises relate to the evidence for or against the conclusion.	A possible definition: In general, a conclusion is the end product of a reasoning process. It is a statement accepting (or rejecting) a hypothesis. (See proposition.) In this context, a conclusion is a statement, based on an assessment of the features in a pair of specimens the examiner observes, that the same individual is (or is not) the source of the specimens. The strength of the examiner's belief in the hypothesis must depend on the strength of the evidence as assessed by the examiner and the examiner's prior probability that the hypothesis is true.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
111	3.1	E	Second sentence, first word "They" - confusing what from the first sentence "they" is referring to. Findings? Examiners? Comparison processes?	Replace "They" with "Conclusions"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
250	3.1		What are "conclusions"? Section 3.1 defines "conclusions" extremely broadly. It states that a conclusion "may offer support for one proposition over the other." (The word "support" is not defined. Propositions are defined in section 3.6. We will come to that shortly.) We think forensic science would benefit from distinguishing between conclusions and the evidence that supports the possible conclusions. A conclusion (about a state of nature such as the source of a latent fingerprint) does not describe an examiner's information about the truth of a proposition. Instead, the conclusion follows from such information. The information at the examiner's disposal may support one proposition more than another, but that is an evaluation of	Proposed Resolution: Define "conclusions" as statements of belief about the truth of different propositions made about the source a latent print. For the source "majority of laboratories," a conclusion is a statement that the posterior probability of a proposition is so large that the examiner believes the proposition is true.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
51	3.1, 3.3, 3.5, 3.6, 4.3.1, 4.3.2, 4.5.2; annex 4.2.1	E	Use of "can" throughout document indicates 'ability'; ie 4.3.2 "contact with a surface can result in an impression" incorrectly suggests that contact with a surface <i>will</i> result in an impression	Suggest change "can" to "may" throughout document due to the high level of variability to each latent deposition and examination; "may" is consistent with verbiage in ANAB laboratory accreditation	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
52	3.2	T	"with associated intervening ridge count"	Suggest adding ", and/or" before "with associated intervening ridge count" based on the fact that intervening ridge count may not always be present in every occurrence of correspondence, thus should not be locked in as a requirement of correspondence	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
82	3.2	E	An examiner might say, "I have observed a bifurcation in the latent print that corresponds to a bifurcation in the suspect's scanned thumb print." One can observe such corresponding details, but the observation is not the correspondence. "Correspondence" is the presence of the same characteristics (features) in the same relative locations in two specimens.	Redefine in terms of the event — namely, the occurrence of the same specific set of features in two prints.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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112	3.2	E	Long, run-on sentence, and confusing	Break into two sentences. Such as "Observation of the same or similar pattern type, ridge flow, and friction ridge features. Observation of friction ridge features furthermore includes same or similar type, in a similar position to each other, with the same associated intervening ridge counts."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
113	3.2	E	"...same relative position" - the word "same" is hard fast, and does not leave much room for explaining how distortion can change/alter the relative positions	Replace "same" with "similar"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
114	3.2	E	"...associated intervening ridge counts" - this phrase is vague	Replace "associated" with "same," or add "same" in front of "associated"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
31	3.2	T	What if I am examining areas of Friction Skin Impressions that are not the PATTERN TYPE areas of distal phalanges? What if I am examining palm prints, proximal or medial phalange impressions, finger tip impressions? For correspondence, you state I need to observe pattern TYPE? Why are you limiting correspondence to whorls, loops, and arches (pattern types)? A detail in impression A can be observed as a ridge ending. The same detail in impression B can be observed as a bifurcation. Can I judge them to be the corresponding details? There is so much more to determining correspondence than simply Observing. Judgment is part of analyzing and comparing. Why do you not even consider the judgments that need to be made in comparative measurements of imperfect images? Every comparative measurement between details within imperfect image pairs requires judgment beyond observation.	>The judgment or determination of similarity or agreement after comparative measurements between details in two impressions is made.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
53	3.3	T	definition addresses discriminability of impressions made by different sources, but fails to address discriminability of impressions that may have been made by the same source.	Definition of "discriminability" should address its use in both identifications and exclusions; suggest "The degree to which information in an impression may be used to distinguish between impressions. made by different sources "	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
83	3.3	E	"Encompass" means "surrounds" or "includes."	Rewrite the last sentence as "The discriminability of an impression is a function of the quantity, spatial arrangement, clarity, and rarity of features found on the friction ridge skin."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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32	3.3	T	Tell me how many 'degrees' exist or which degrees can be used as sufficient degrees. What 'information' are you speaking of? Details of the Features (ridges, creases, scars, warts, blisters, etc.?) of the Friction Skin? Tell me what Rarity entails. How rare is rare enough to discriminate? Has anybody estimated rarity elsewhere in pattern area of distal phalange of friction skin? Has anybody estimated rarity of scars and creases? IF Rarity is the future word of choice, tell me what is Rare and How Rare are Features beyond ridge points. Later you mention Rarity within section 4.2+ as referring to SKIN. Should 3.3 be talking discriminability within skin or discriminability within impressions? Please pick skin or impressions or both depending on your intentions. Why bring up discriminability between impressions from different sources when "1 Scope" stated this document is limited to source identification conclusion and does not consider... I figured you would only bring up judgments of similarity, correspondence, agreement, etc., after comparative measurements.	This is somebody else's new word. I do not know how to recommend better term except to use a dictionary definition.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
201	3.3 4.2.1 4.2.2.2 4.2.2.3 4.4.2 4.6.2.1 4.6.2.2 4.7.2.2	T	One issue within this document is the inclusion of the word "discriminability." Research shows that there are certain key words within the English language that have a negative impact on the cognitive thought processes of an individual, thus affecting his/her emotional response to the word, the phrase, or even the individual stating such words. The word "discriminability," as a derivative of "discriminate" – a word with a long-standing history of injustice – is just such a key word (also referred to as a "target word"). It then stands to reason that there is a high risk that a juror hearing a word such as this would have a negative emotional response to the expert witness using such language. Such an emotional response could range from mild discomfort to a complete shut-out of the entire testimony.	Use a different word - perhaps some variation of "differentiate" or "distinguish"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
210	3.3, 4.2, 4.2.1, 4.2.2.2, 4.2.2.3, 4.4, 4.4.2, 4.6.2.1 & 4.6.2.2	T	The word discriminability can have negative connotations to people whether or not it is intended. I would not feel comfortable using it in a court environment.	Currently the word unique is being used in friction ridge identification, a word that like most others has multiple meanings. The current meaning in friction ridge identification leans more towards: remarkable, unusual, special etc. I would keep the current terminology. If another option is necessary we could use the word discernible. Both the word unique and the word discernible could be defined for their specific meaning in the document and both do not have the negative connotation associated with them.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
131	3.4	T	The definition seems be defining quality not discriminability. And I don't think many examiners actually use this word.	Delete this section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
147	3.4	T	This states that weight is assigned to features. At this time, it is not possible to assign weight to features therefore this should be removed.	Remove that weigh is assigned to features.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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33	3.4	T	ALL regions of FR Skin have minutiae that form because of flow and paths of nearby ridges. It is due to Developmental Noise, influences from many things. Neighboring ridges are parts of the Developmental Noise. Tell me where the Pattern Force Area STOPS since this definition tries to define where the Pattern Force Area starts. If clear enough, all minutiae and ridges can be comparatively measured to discriminate impressions from different sources. It all depends on the quality of the impressions and how closely the examiner can comparatively measure and how closely the examiner chooses to comparatively measure. Are these ridge Minutiae Points within this definition actually comparatively measured for impressions from different sources when considering Randomness? Or are just the appearance of a number of points in a general area considered and deemed less rare without actually comparatively measuring them? We need something to tell us how Randomness was actually and legitimately determined. This section starts with skin. SHOW me actual COMMON ridge minutiae point configurations on different FR Skin. I do not care what areas of FR Skin you consider. This section ends with impressions. The lack of ability to comparatively measure between impressions is because of what the examiner can measure and what the examiner chooses to measure. Since this section brings up Randomness, I look forward to a detailed description of how to declare ranges of Randomness for details from all sorts of features from all sorts of different areas FR Skin. Randomness is not defined in this paper on articulation. Also, tell me how the PROPERLY assigned weight of different configurations of points was determined. What weights are improper within many assignments? There are many configurations within areas that have many points. What were the examiner's JUDGMENTS on the individual comparative measurements and the JUDGMENTS of the aggregate of comparative measurements of these point configurations in which you state the configurations are less randomly distributed. The Distribution of Points throughout FR Skin is equally random, or UNIQUE.	The Key word to be defined for Pattern Force Area is Area, so tell me where this area starts, where the boundaries of this area are, and where it ends since you choose to use it. I do not know how to define Pattern Force Area since I do not understand where this area starts and stops since all regions of FR Skin have different configurations of minutiae. So, I recommend Delete this term until the boundaries of Pattern Force Area are debated and accepted, as generalized in the Foreward.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
115	3.5	E	Second sentence punctuation addition	Add a comma between "model" and "or"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
116	3.5	T	May we word this in such a way so that research regarding probability of appearance of features/patterns can be included in the examiner's assessment? Current phrasing gives nod only to the observations and personal experience	Reword second half of second sentence to "...model, or assigned by the examiner using a subjective assessment that is based on observations, experience, and published research." alternate phrasing of "peer reviewed research"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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84	3.5	T	As in this definition, some statisticians define probability as "chance." Others object that "chance" connotes an objective quantity that is not necessarily part of what it means to say that "the probability of X is p." A good deal of writing distinguishes between "aleatory" and "epistemic" uncertainty and discusses how the mathematical theory of probability pertains to each of them. The first sentence therefore may be too confining. The second sentence awkwardly proposes a quasi-subjective interpretation in which an individual estimates an objective probability by assigning a personal assessment of the expression of the chance.	"There is much to be said for leaving probability as an undefined concept, particularly as all attempts at definition can be criticized in one way or another" M. S. Bartlett, <i>Probability and Chance in the Theory of Statistics</i> , 121 <i>Proceedings Roy. Stat. Soc. A</i> (1933), https://doi.org/10.1098/rspa.1933.0136 . But if a definition is to be included, it might say something like the following: In modern mathematics, probability is a function that assigns numbers to events (represented by sets) or propositions (statements about the world) in accordance with a few axioms and definitions. The proper meaning or interpretation of the numbers is a philosophical issue that has prompted different schools of thought. Three important theories are known as frequentist, logical, and subjective.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
191	3.5	T	In addition to failing to grapple with the criticisms of source attribution and identifying and presenting limitations or the absence of models and empirical evidence, the document contains other problematic statements. The discussion of probability states that one can estimate probabilities by using "an appropriate model" or "assigned by considering a subjective assessment that based upon observations interpreted using the examiner's experience". This sentence suggests that these two approaches are equally worthy and scientific. To the contrary, one is scientific and the other is not, absent multiple, independent, rigorous, large sample, case-work-like studies designed to accurately test human performance.	The document should not equate these two approaches and should identify the limitations of the subjective approach (e.g. no reliable estimates of uncertainty or error rates).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
202	3.5	T	The term "probability" is properly defined here in part - while probability estimates <i>can</i> be calculated, there is no currently validated method of calculating such statistics in the friction ridge discipline. There are a few current attempts at such calculations being tested, but research in the arena has been attempted for over 100 years, dating back to Galton in 1892, with no success to date.	"Probability" should be removed from the friction ridge discipline altogether until there is an accurate, validated method for determining such statistics. (If/when such a method is developed and validated, the document can easily be revised.)	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
230	3.5	E/T	The accuracy of subjective assessment of probability based upon an examiner's experience cannot be assumed, it must be empirically demonstrated. Until examiners can demonstrate an ability to accurately estimate the frequency of specific observed features in the human population, subjective probabilities based on examiner experience should not be used.	Change the second sentence in this section to "Probability estimates can be calculated using an appropriate (validated) model. If such a model is not used, quantitative estimates of probability cannot be used.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
247	3.5	T	Naturally, the greatest discussion around the STG consensus comments was centered on the definition of probability, since its definition is fundamental and has both practical and philosophical ramifications. As a result of the STG discussion while voting on our comment language, I would like to express my support for a relatively minor modification of the definition for probability based on a comment by STG member Hal Stern. His comment narrows the text of the consensus definition in response to the recognition that there are many different potential uses for probabilities of subtly different types in forensic analysis. This view is shared by at least a few other members of STG, but we did not have time to assess how many would agree with this point of view.	Use a definition for probability that reads something like, "A probability is a measure of the uncertainty associated with the occurrence of an event (past, present, or future) whose outcome is unknown. In the context of an examiner making a source identification, a probability is a measure of the examiner's belief that a given proposition concerning the source of a trace object is true."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
251	3.5		What is probability? Section 3.5 defines “probability” as “an expression of the chance that a particular event occurs. Probability estimates can be calculated using an appropriate model or assigned by considering a subjective assessment that is based upon observations interpreted using the examiner's experience.” Technically, probabilities can be defined over events (set theory) or over statements (propositions in symbolic logic). They can be “objective” or “subjective.” We doubt that examiners “consider a subjective assessment” to “calculate” a subjective probability. But perhaps they do calculations with subjective estimates of the frequencies of subsets of the features they believe are relevant to discrimination between competing propositions. The latter seems more appropriate here. More significantly, estimates of (objective?) probabilities are not merely subjective, personal assessments. Furthermore, “probability”, “likelihood” and “chance” have specific technical meanings in the fields of statistics and probability. They cannot be used interchangeably as seems to be the case in the current document. Thus, it is not appropriate to define a probability as a	Proposed Resolution: A probability is a measure of the uncertainty associated with the occurrence of an event (past, present, or future) whose outcome is unknown. In the forensic context, a probability is a measure of a scientist’s belief that a given proposition, often concerning the source of a trace object, is true.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
148	3.5	T	The definition is for 'probability estimates' not for 'probabilities'. Recommending using terms that imply a calculation when none has been performed is highly misleading since examiners have no mathematical means of determining the 'chance that a particular event occurs', they can only speculate which goes against science (the scope implies this document reflects science). Examiners should not use mathematical terms if they are not deriving mathematical calculations. A document making recommendations should also not recommend speculating since it is outside the bounds of science.	Change the heading of this definition from 'probabilities' to 'probability estimations' to clearly indicate the chances of occurrence are speculation by the examiner, not a mathematically derived calculation.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
132	3.5	T	Aside from my previous comment that this word is already defined by more authoritative sources, I don't think many main-stream scientists would agree that probabilities can be "subjectively" assigned.	Delete this section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
34	3.5	T	Chance indicates a possibility for repetition. Roll of a die: 1/6. Flipping a coin Heads or Tails: 1/2. I need somebody to show me repetition of FR SKIN features on different areas of skin or FR Skin from different people. 'This' Ending Ridge is different than 'That' Ending Ridge. 'This' Ending Ridge is different than 'An' Ending Ridge. Tell me which models are appropriate and accepted after all the debates are done and the foundational documents are accepted. Remember, Models leave stuff out. Experience is an unacceptable word from the critics. "Based on my experience, I am of the opinion...". Why are Interpretations and Experiences acceptable here for Probability Assessments but not for Source Assessments?	> 'The ratio of an option for occurrence as related to all possible occurrences for the selected event.' (Rolling of a die: 1/6, Flipping of a coin 1/2.)	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
54	3.6	T	last sentence of "proposition"; "it WILL never be known which proposition is in fact true or false."	Because every scenario cannot be accounted for and there are no absolutes in science, suggest wording of "will" be changed to "may" to account for all possible propositions	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
8	3.6	T	"Propositions are statements about the actual state of nature. They are either true or false and can be thought of as the ground truth." A proposition is a hypothesis. Whether it is true or false is unknown. It is not ground truth.	delete: "and can be thought of as the ground truth"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
9	3.6	T	""Competing' means that one of the propositions must be true and the other must be false, but together they include all possibilities." Whether the proposition must be exhaustive is a matter on which there is disagreement. The quoted text states that propositions must be exhaustive in two different ways. What is agreed upon by experts in forensic inference and statistics is that the propositions must be mutually exclusive. The proposed text conveys the concept of mutual exclusivity and does not address exhaustivity.	replace with: ""Competing' means that the two propositions must be mutually exclusive, i.e., if one is true the other must be false."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
85	3.6	T	Propositions cannot be thought of as the "ground" truth itself. In general, propositions are statements of fact that must be either true or false. An assertion put forward as a proposed truth is a hypothesis. An assertion that a hypothesis is true (or false) is a conclusion. Hypotheses about the causes or explanations of observed phenomena in the natural world are one category of propositions.	Replace the definition with the following: In the context of forensic identification, the word "proposition" is often used for hypotheses about the source of a trace such as a latent print. Although it may be very probable that a particular source hypothesis is true, the forensic scientist or analyst can never know the truth of the hypothesis to a certainty. The forensic analyst studies trace and control specimens that may be useful to others (such as judges or juries) in drawing a source conclusion. To facilitate this process, the analyst may consider how strongly the data on these specimens support one source hypothesis compared to other source hypotheses. For example, the analyst may assess the degree of support (see also "weight of evidence") for the hypothesis that "Mr. X is the source of the recovered print" as opposed to hypotheses that "Ms. Y is the source" or "An unknown individual in some large population of possible sources is the source." However, in making source attributions, fingerprint examiners go beyond statements of support. They draw the conclusion that a source hypothesis is true. (See conclusion and source identification).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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211	3.6	T	This section states that ground truth will "never" be known. An absolute can't be used here when stating absolutes are not permitted.	Change the wording to "not likely".	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
231	3.6	E/T	This definition should be removed from the document. The use of the likelihood ratio should not influence if "source identification" can be used to describe the level of association that may exist between friction ridge impressions.	Eliminate all discussion of statistical analysis. If the definition is not removed, consider the following edits: The first sentence should be changed to "Propositions are questions or opinions an examiner has about the state of nature. They are either true or false and can be thought of as approximations of the ground truth based on information known to the examiner." The fourth paragraph should include information of how propositions are determined and documented. It should also be stated that different propositions would lead to different conclusions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
248	3.6	T	One thing I like about section 3.6, as written, is that it emphasizes the use of propositions that are mutually exclusive and exhaustive. While I agree with the text of the STG consensus comment 4, which indicates that propositions do not have to be exhaustive, but only mutually exclusive, I believe that if one provides a likelihood ratio as a report of evidence then that LR must ultimately allow each decision maker to determine a posterior probability for an identification. Therefore I support the use of propositions that are mutually exclusive and exhaustive when reporting on the examination of evidence to decision makers.	Add additional text to the proposed resolution provided in the STG consensus comments so the definition will read, "Propositions (hypotheses) are statements about the state of nature. Propositions are often framed in pairs with the goal of choosing between them. For that purpose, propositions have to be mutually exclusive, meaning that one can be true, the other can be true, or neither can be true and that the evidence logically only should be able to support one of the propositions (unless exactly equivocal). In addition, it is a best practice to use exhaustive propositions, meaning that one of the propositions must be true. For example, two mutually exclusive and exhaustive propositions are that person X is the source of the latent print (H1) and that person X is not the source (H2)."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
252	3.6		What are the propositions that are of interest? Section 3.6 states that "pairs of 'competing propositions' ... include all possibilities." This is necessary only if one wants to arrive at the posterior probability of a proposition. A likelihood ratio (i.e., Bayes factor) can be defined for any two mutually exclusive propositions (whether or not collectively exhaustive). Bayesian inference only requires the two propositions to be mutually exclusive. There is no requirement for them to be exhaustive with respect to the set of all possible sources of the trace material. For example, in forensic DNA, it is common to consider the following pair of propositions: H1 (Mr. X left the blood at the crime scene vs. H2 (Someone unrelated to Mr. X left the blood). These two propositions are exclusive but not exhaustive since they do not account for relatives of Mr. X. When the pair of propositions is not exhaustive, the Bayes factor cannot be used to assign a posterior probability to the proposition that a specific individual is the source of a trace object. This has been recognized as an issue in DNA testing. After defining the idea of hypotheses (a more common and more specific term than "propositions" in statistics), the section concludes that "In forensic science, evidence is examined for purposes of accumulating data or information which may provide support for one proposition over the other. Despite the ability to accumulate data or information in support	Proposed Resolution: Propositions (hypotheses) are statements about the state of nature. Propositions are often framed in pairs with the goal of choosing between them. For that purpose, propositions have to be mutually exclusive, meaning that one can be true, the other can be true, or neither can be true and that the evidence logically only should be able to support one of the propositions (unless exactly equivocal). For example, two mutually exclusive propositions are that person X is the source of the latent print (H1) and that person X is not the source H2).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
149	3.6	T	Since it has not been established that propositions are currently used, and since examiners have no concept of what propositions are or how to use them, using propositions has not been established as a best practice. I have no idea how to determine 'the probability of observing the same correspondence in two impressions made by different sources'. If an examiner is trained to find 10 points, then they are accumulating data to a threshold, they are not considering the probability that the impressions were made by a different source (or they are assuming the probability is zero, and a division problem with zero as the denominator is unachievable in science). If this is what examiners are currently doing, perhaps this is the reason for the high erroneous exclusion rate; examiners are not good at determining the probability of observing the same correspondence in two impressions made by different sources. If so, then this method may be the cause of errors and should not be recommended. There is not enough research to establish this as a recommended practice. If proposition is being used to indicate 'belief' then that should be stated. The way this is being described, propositions is being used as a method, not a foundational principle (which is outside of the scope of this document).	Remove any reference to propositions throughout the document and leave that topic for the methodology document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
133	3.6	T	Propositions are not ground truth; they are hypothesis/guesses about what the ground truth is. 4.9.2.4.2 handles this concept well.	Delete this sentence and edit the section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
219	3.7	T	re: rarity - We do not have a "rarity listing" establishing how often a specific feature will occur in a specific area. Rather, it is a perponderance of features in sufficient quantity and clarity and relationship to one another that allows us to reach a conclusion.	Do not use "rarity" unless we can specify whether a feature is rare and how rare it is in the whole. Simply because something is uncommon in the experience of an Examiner does not equate to rarity. For example, if someone were to study bears in the Arctic, they would perceive a koala as "rare". An Examiner in Australia would say that polar bears are rare and koalas are commonplace. As there are a great many koalas all over the world and there are conveyances traveling all over the planet every day, it is not inconceivable that an indefinite number may choose to tour the Arctic during their lives.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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232	3.7	E/T	The definition of rarity needs to be reconsidered. Barring injury or disease, it is assumed that everyone has the same general minutiae (loops, whirls, arches, ridge ending, bifurcation, dots, etc.), which allows for a universal classification system. The spatial arrangement of these features is where rarity may come into play. The use of words like "proximity" and "location" in the example given for rarity stress the importance of positioning in determining rarity, yet this point is not clearly stated in the definition. Using phrases like "frequency of appearance or prevalence within a group of people" suggests that this information is kept in a database of sorts. If this is the case then will the "group of people" which can be called the sampling/population of people be defined in another standard?	A definition for rarity needs to have greater emphasis on the role spatial arrangement plays in determining a whether a feature is rare. Discussions of frequency or groups of people should not be raised in the definition if there is no explanation of what the groups are and how frequency is determined.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
117	3.7	E	First sentence - both times the word "its" is used, it is unclear what "its" is referring to. The features? The skin?	Replace with "...refers to the feature's frequency of appearance..." and "...other information about the feature's local context."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
35	3.7	T	FR Skin is the ground truth of the feature. Rarity of features observed is different than rarity of feature TYPE observed. 'Type is a label' attached to a specific feature. Each ending ridge on skin is different than all other ending ridges on FR Skin. How does a feature on FR Skin occur in isolation from other information about its local context? I need other information to find the specific feature under consideration for comparative measurements. If rarity of a feature TYPE is influenced by pattern force area, the finger number, palmar region on which it is located, or the pattern type, why is ONLY Pattern Force Area important enough to define? Tell me the influences of the finger number, palmar regions, pattern types, finger tips, medial and proximal phalanges, feet, etc. Since you tell me the Feature TYPE COULD Be Affected by all sorts of things, you tell me nothing, except reading into it that the overall Developmental Noise influences all features of FR Skin. Please tell me the randomness values for features on all the volar areas of FR Skin. Or, do I rely on experience? Rarity of a Feature TYPE averages out the variations among the labelled Ending Ridges, labelled Bifurcations, and labelled Dots on FR Skin. Why do we want to Average Out Variations in the FR Skin?	> Frequency of occurrence	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
118	3.8	T	Concerned with the fact that we are issuing a document that includes the definition of "source identification" prior to the publication for comment of the document whose purpose is to define all conclusions. When the latter document is published, comments and changes made to the definition of source identification will change what should be written here in this document. Furthermore - if one phrase is defined in multiple documents, someone would need to track that the definition is always identical across all documents. I see this being cumbersome and difficult to do.	Rather than writing out the definition of source identification here, simply insert the note of "Please refer to document number X for the definition of source identification." This will ensure that no conflicting definitions exist across multiple documents, and it will prevent the necessity to rewrite one document as the other one changes.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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86	3.8	T	A “source identification” always has been a type of conclusion — referred to as a “single source attribution” in Joseph Polski, Ron Smith, Robert Garrett, et al., The Report of the International Association for Identification, Standardization II Committee, March 2011 , NIJ 2006-DN-BX-K249. It has not been just a statement of support or evidentiary weight with regard to the hypothesis, but an examiner's acceptance of the hypothesis as true.	Acknowledge the established definition, either by replacing the one here with something like “An examiner who associates a latent print with a print from a known individual makes a source identification,” or provide the new definition but change the foreword to explain that this document does not simply give the foundation for existing practice but prescribes a change in it.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
10	3.8	T	see comment 9 on §4.8	see proposed resolution 9	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
233	3.8	E/T	As defined in this document, the term source identification does not clearly explain what a source identification is and how it differs from the older terminology of individualization. Given the historical perception of fingerprint identification, it is very easy to conflate these two concepts of source identification (attribution) and individualization. The term “source identification” is problematic as it shares with “individualization” the implication of an ability to attribute a sample to a single source (see Cole, Simon A., A Discouraging Omen: A Critical Evaluation of the Approved Uniform Language for Testimony and Reports for the Forensic Latent Print Discipline (July 5, 2018). Georgia State University Law Review, Vol. 34, No.4, pp. 1103-1128, 2018; UC Irvine School of Law Research Paper No. 2018-53. Available at SSRN: https://ssrn.com/abstract=3208931). “Inclusion” or “Association” are preferred terms.	Remove the term “source identification” from this document. The document can be referred to as “Best Practice Recommendation for Articulating Conclusions of Association in Friction Ridge Examinations” or “Best Practice Recommendation for Articulating Conclusions of Inclusion in Friction Ridge Examinations”]	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
234	3.8	E/T	Without full explanation of how the LR framework works within fingerprint analysis, phrases like “substantially stronger support” do not provide proper context on what the examiner is conveying. In 4.9.2.4.2 it is stated that all source identifications should not be presented in equal strength, which implies there are factors involved in determining the strength of a source identification.	The definition of “inclusion” or “association” should state that this is the determination that a friction ridge print may have originated from a particular source based on the similarities in the features observed, identified, and documented between the latent and the identified source. The factors that determine the strength of a conclusion should be explained in the definition.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
150	3.8	T	a) It appears the term 'source identification' is being substituted for identification and perhaps redefined. Interested parties (stakeholders) will not see or understand the subtle nuance and therefore using this term and definition is not clarifying the conclusion. Implying absolute was misleading, but stating it is highly supported (no matter how it is described) is still highly misleading, which goes against 4.9.2.3 which says misleading statements should not be given. All this is doing is swapping one term which has thought to be misleading (some say that the word identification implies absolute even though research from jurors does not indicate this is true) for another term that is even more misleading. b) What if an examiner is asked 'did you identify the print?' Is the examiner to say they did not.	a) To be transparent, the most appropriate term to use is 'association', or use the term identification but define it as "Identification - a level of association indicating there is enough correspondence to infer/deduce the originating source." In science, inferences may be strong or weak and the weight or strength of the inference should be stated by articulating the quantity AND QUALITY of the data used (to prevent examiners from simply saying there were 13 points). b) clearly indicate that the term is being re-defined to be different than the historic use of the term 'identification'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
151	3.8	T	What is 'substantially stronger'? It seems to be a metric without any means to determine that metric. Recommending this definition is encouraging overstatements.	Clarify what is meant by 'substantially stronger' otherwise no examiner can ever give a 'source identification' (i.e., substantially stronger) needs to be defined.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
203	3.8 4.7.1 4.8.2 4.9.2.2 4.9.2.2.1 4.9.2.2.2 4.9.2.2.3 4.9.2.3.1 4.9.2.3.2 4.9.2.3.3 4.9.2.3.4	T	To define something as "substantially stronger" than something else implies that there is some manner of quantifying the value of it. In the friction ridge discipline, there is no method or ability to quantify the strength of corresponding ridge detail, which means we are basically trading one subjective statement for another, slightly more confusing (to a lay person) subjective statement. This lends nothing of benefit to the science. As a practitioner in this field for several years, I can say that when I come to the conclusion of "identification" it is because I am confident in that conclusion - it is not because I <i>think</i> or it <i>could be</i> and identification. By implementing such conclusions involving "support for a proposition" we are relaying to a lay person that we are not entirely confident in our conclusion, in which case the question becomes "why are even bothering?"	Remove the terms "substantially strong support for" - the definition of "source identification" should remain a conclusion by the examiner, based on the observed friction ridge details, that the two impressions originated from the same source.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
235	3.9	E/T	This definition is not helpful for the deliberation of categorical conclusions. For the purposes of this document it should be stated that currently the strength of evidence can only be described verbally. Any descriptors should be included within this document to support the claims made in the definition. It would be better to identify the strength of evidence as the Likelihood Ratio in the definition rather than 4.7.2.3.	A possible edit would be "A verbal expression of the discriminability that exists between two impressions. The weight of support of the evidence can be expressed through the analysis of competing propositions using a Likelihood Ratio Analysis. This type of analysis is not discussed in this document. Currently the strength of evidence can only be described verbally."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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87	3.9	E & T	Strength of evidence is not “a means of describing the weight of support the evidence lends.” It is a synonym for probative value, support, or weight.	Pick one term and use it throughout the document. Define it here, noting the synonyms. “Support” might be the best choice. The American Statistical Association has recommended that forensic examiners confine their evaluations to statements of support. For a technical definition of support, see Edwards, A.W.F. 1972. Likelihood. Cambridge University Press, Cambridge (expanded edition, 1992, Johns Hopkins University Press, Baltimore).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
155	3.9	T	Strength of evidence can be given without propositions and therefore this definition is too limiting to be usable by most examiners.	Remove the reference to propositions and define strength as 'A means of describing the weight of support for the conclusion'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
154	3.9	T	The given definition of 'strength of evidence' is different than it is defined later in the document (e.g., 4.7.2.3).	Search the document for this phrase and make the definitions consistent.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
36	3.9	T	T- What model has been accepted so I can describe this numerically?	>Description of support for a specific propostion over another propostion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
212	4.1	T	"Supporting references are provided in each section and practicing examiners should be aware of this material." It is stated in the first sentence of the above paragraph that examiners should be aware of this material.	Change the sentence to read, "Supporting references are provided in each section."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
135	4.1	E	"...series of statements taken together provide a..."	"provide" should be "provides"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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119	4.2	T	I appreciate and agree with how this section makes it clear that pattern "uniqueness" has not been proven. This is a very important and valuable point for people to understand. Equally valuable is pointing out why friction ridge comparison evidence is still valuable, and why identifications are still reliable. This section is written in such a way that expresses caution about not over stating what we can prove, without giving reason to still place value or belief in our field. I don't believe in giving one without the other. I have concerns about a defense attorney latching onto this document and proclaiming in court that we ourselves state our science has not been proven, and has no reason to be belived. Furthermore, we are not offering to any new examiners any sort of defense against such claims. This section is lacking discussion on how examiners can defend the reliability of their identifications when confronted with lack of "proof of uniqueness." What are the principals and foundations for why our industry should still exist? An articulation document should be just as detailed in conveying what we CAN say as it is in	Take out the verbage that states uniqueness is merely a "claim." Acknowledge it as a well documented scientific theory, which it is. One that follows other, well accepted scientific theories regarding uniqueness in nature. Add verbage to acknowledge that while uniqueness cannot be proven, it has still been well researched and well tested. Give recognition to the length of time that this theory has been tested for. Furthermore state that it continues to be tested, on a daily basis and across the world, as examiners conduct comparisons and continue to not find two prints from two sources that are identical. Essentially what I am suggesting for this section is the addition of language that adds weight and foundation to what we do, and to why our field should still exist and is of value. The way it is currently written undercuts much of this.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
120	4.2	T	(see comment 119)	(see comment 119)	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
37	4.2	T	You chose to abandon 'Unique' here. Critics of Uniqueness state it cannot be absolutely proven. So be it. Show me repetition in any of Nature's Patterns, Note: Any of Nature's Patterns. I can Generalize Uniqueness to Nature's Patterns with much more confidence than trying to detemine Discriminating levels throughout all of the Volar Skin. Since you pick 'Discriminating,' tell us how discriminating each feature is throughout all of the volar skin, so I can articulate discrimination throughout all areas of the volar skin, for ridge paths, ridge events, ridge textures. Also, tell me the discriminating power of Natural scars, creases, warts, blisters, etc., since these features are also parts of Friction Ridge Skin.	>Unique and Persistent Nature of Friction Ridge Skin	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
20	4.2.1	T	The use of the word "discriminating" or "discriminability" has bad conations in the general public. They are red flag words and could cause bias in the jury against any information that followed a statement using those words.	Stick with the word "Unique". There has not been any data to support that friction ridge skin is not unique to each individual, but every study that I am aware of, has found that friction ridge skin is unique to the individual.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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38	4.2.1	T	Since you state FR Skin structures CAN BE highly discriminating, tell us when the FR Skin is not highly discriminating. Tell us when the FR Skin is not discriminating at all. Note: You are talking about the Skin. The FR Skin is unique, and if measured closely enough, is highly discriminating. Show me repetition of any of Nature's FR Skin. I am asking you to show me the features on those two different FR Skin pieces that you show me have features that are actually repeated. I do acknowledge, the impressions of the FR Skin can have ranges of discrimination. Those ranges of discrimination depend upon how closely the examiner can measure and how closely the examiner chooses to measure.	>Friction ridge skin contains persistent morphological structures that are unique. Impressions of those structures can be highly discriminating.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
213	4.2.1, 4.2.2.1, 4.2.2.2 & 4.2.2.3	T	The word highly used to describe the variance of friction ridge features between different individuals is improperly quantified. Although we can't say that an arrangement of friction ridge features came from a single individual implicitly, I do not expect to see two people with the same friction ridge features. None of the errors that have been discovered thus far have resulted in two people with the same arrangement.	Change the word "highly" to vastly, immensely, exceedingly, exceptionally or remarkably.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
253	4.2.1, 4.2.2.1, 4.2.2.2, 4.2.2.3		What is the reasoning that latent print examiners (LPEs) should or do use to arrive at source conclusions of identity? The document maintains that latent print examiners (LPEs) should articulate their reasoning as follows: 1. Some permanent features of friction ridge skin ("persistent morphological structures" § 4.2.1) vary greatly from one individual to another—they are "highly variable" § 4.2.2.1). This variability makes them "highly discriminating" (§ 4.2.1), at least in toto (§ 4.2.2.2), but they are not necessarily unique to an individual (§ 4.2.2.3). Variability in features is a necessary prerequisite to using them to discriminate between the sources of the traces in which they give rise to measurements (binary or otherwise). A statement about variability is therefore an appropriate starting point. But it would be a logical error to equate variability with "discriminability" as defined in § 3.3. Even if the feature set is a variable that changes from every individual to the next (so that the features are unique), the appearance of the feature set in traces from any given area of friction ridge skin (AFRS) also varies. Distinguishing between same-source prints and different-source prints requires reasonable separation between the distributions of measurements on the two kinds of prints. Although this fact is recognized or implicit in later parts of document, equating large interpersonal variability in the underlying feature set to discriminability as defined in § 3.3 is a confusing start.	Proposed Resolution: Rework the definition of discriminability to indicate that feature variability is necessary, but not sufficient, to distinguish between sources and include a description of how the variability must manifest itself to make distinguishability possible.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
236	4.2.2.1	E/T	The combination of features may be highly variable between sources but are not always highly variable. In addition, the list of situations in which skin can be damaged should be expanded.	Change to "... The combination of features present in friction ridge skin may be highly variable..."; and change to "...barring injury, disease, or other conditions damaging the skin...."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
1	4.2.2.3	E	Completely disagree with the first sentence. Undermines the very notion of a source determination through comparison. Second part of sentence two for the same reason.	Rewrite correctly citing the huge volume of "empirical" evidence, which is readily available and well known, as well as the research cited in 4.2.3.1. Uniqueness is a bedrock principle.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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11	4.2.2.3	T	"it has been suggested that the concept of uniqueness is neither a guarantee of an examiner's ability to make an accurate source identification, nor a necessary precondition to reaching a reliable forensic conclusion." The terms "accurate" and "reliable" are both used in this sentence suggesting that "reliable" is a synonym for "precision" and that both concepts are being addressed, but I suspect that this is not the intention. "source identification" and "forensic conclusion" appear to be contrasted, but in context they actually appear to be synonyms.	delete: ", nor a necessary precondition to reaching a reliable forensic conclusion"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
39	4.2.2.3	E	The reason the nature of FR Skin is highly discriminating is because nature's patterns are unique. Uniqueness will never be proven because there is too much uniqueness in nature's patterns. Why are we relying on a suggestion by a commentator? What does an examiner's ability have to do with uniqueness. I need somebody to explain this relationship between skin and an examiner's ability. The FR Skin and impressions can be measured. That measurement depends on how closely the examiner can measure and how closely the examiner chooses to measure. The highly discriminating nature is a result of the FR Skin BEING Unique.	Delete or significantly edit: > Friction skin structure patterns are unique. This can never be absolutely proven, but is accepted within the community.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
108	4.2.2.3	E&T	In Section 4.2.2.3, eliminate the phrase "it has been suggested that."	Surely the idea that "uniqueness" does not guarantee accuracy is now an established tenet of the pattern-matching disciplines in forensic science, rather than a mere "suggestion."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
75	4.2.2.3	T	Uniqueness not a necessary precondition to reaching a reliable forensic conclusion	It is common for examiners to know and be able to explain that the theory of biological uniqueness cannot be proven, but it may be valuable to provide more explanation or guidance as to why it's not necessary for a reliable conclusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
192	4.2.2.3	T	The second sentence should be split in two as it addresses two different issues.	The second sentence should be: "The concept of uniqueness is not, however, a guarantee of an examiner's ability." The phrase "it has been suggested" should be deleted as it seems solely designed to weaken this straightforward point. And the third sentence should be: "Nor is empirically proving uniqueness a necessary precondition to reaching scientifically defensible conclusions provided that the appropriate research has been conducted to develop models and empirical evidence." Reliability may not require proof of uniqueness, but reliability does require empirical evidence and the development of appropriate models and the current draft fails to acknowledge this fact.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
220	4.2.2.3	T	re: "not empirically proven" - One can not prove or disprove what features will occur in friction ridge structures that do not yet exist for people who have not yet been born. However, one can empirically prove that the randomness of the biological process that is the source of all friction ridge skin, creates uniqueness and while some areas have similarity, larger areas of friction ridge skin with sufficient clarity and quantity of data will be unique.	Acknowledge that the biological process that creates friction ridge skin has been studied and understood, and that the random generation of features can result in a unique arrangement.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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204	4.2.2.3 4.7.2.3	T	As one of the two necessary premises of the friction ridge discipline, the "uniqueness" of friction ridge skin is the very foundation of why we are even able to conduct such an analysis. To even suggest that uniqueness has not been empirically proven is to disregard the last 100+ years of research conducted by a multitude of pioneers, as well as all of the practical examinations conducted regularly throughout the world, <i>and</i> the countless AFIS searches conducted at various levels on a constant basis - all of which only support the validity of uniqueness in friction ridge skin. Stating that uniqueness has not been empirically proven is not only an incorrect statement, it is one that will only lead to the destruction of the friction ridge discipline - a discipline that has solved countless crimes over the years and has saved countless lives based on this very premise.	Remove this suggestion altogether that uniqueness has not been empirically proven. The real issue is the statement of the examiner's ability - this topic should be the primary focus of the OSAC. We should be focusing on standardizing and/or mandating the training to competency of examiners, rather than watering down the science that we all know to be sound (or at least those of us who actually conduct friction ridge comparisons).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
205	4.2.3 4.7.3	T	Just because someone writes an article that sounds academic in nature, does not imply that the data within the article is accurate or sound. The articles listed here are obviously one-sided, and are not altogether accepted as sound by the friction ridge community. Furthermore, there is some debate, especially in academics, as to the ethical nature of referencing articles previously written by the author(s) themselves - the argument is that this alone can certainly introduce an agenda-driven bias.	Use more widely accepted articles (not written by the writers of this document) as references in place of these listed in this section. (You may find that much of this document would be quite different if it relied on any of the multitude of references that are actually widely accepted by people in the friction ridge community.)	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
2	4.2.3.1	E	Incorrectly states "Studies of discriminability . . ."	All of the sources cited describe their research as supporting the theory of "uniqueness", this section should accurately reflect that.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
88	4.2.3.5	E	Supplying references for specific claims rather than an undifferentiated laundry list at the end of a standard is excellent. It is not necessary to discuss legal doctrine, but some references to it would be appropriate if the document maintains that it is informed by legal as well as scientific considerations (as the current description of its scope does).	For a discussion in the legal literature of the need for uniqueness, see David H. Kaye et al., <i>The New Wigmore: A Treatise on Evidence</i> (2d ed. 2011). There are plenty of other legal references.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
40	4.3.2	T	Impressions are not a reproduction of skin. Impressions are RECORDINGS of skin.	"Each impression from the same area of friction ridge skin will be a recording of a subset of that skin's features that will vary in appearance from other impressions of the same source skin.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
121	4.4.1	T	The inclusion of the phrase "generally a known exemplar" implies source identifications are between a latent (or evidence print) and a known exemplar. The definition of source identification is simply that two impressions were from the same source, without defining whether the impressions are from unknown or known sources. We often make identifications between two latent/evidence impressions. Whether within one case, or between numerous cases. Inserting the phrase "generally a known exemplar" seems unnecessary and does not add value to the statement, while it does add a possible hindrance to the statement.	Strike the phrase "generally a known exemplar." Leave the sentence to simply state "...that would be expected to be present in another impression from the same area of friction ridge skin." This would include both exemplars and other latents	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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206	4.4.1	T	During the analysis of an area of friction ridge detail, an examiner should not only look for features that are expected to be present, but should actively look for features that are NOT similar. Consistently only looking for feature in common is a conduit straight to confirmation bias, thus causing errors. Looking for detail in common as well as detail <i>not</i> in common should be highly stressed in any scientific field.	Include in the statement that an examiner detects features that both would or would not be expected to be present in another impression, as is similarly stated in section 4.5.1.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
237	4.4.1	E	This statement could be interpreted in a way that would lead to confirmation bias. The statement does not explain the order of analysis and it could be inferred that a known exemplar should be examined before the unknown evidence impression.	The sentence can be edited to "During analysis of a friction ridge skin impression, an examiner detects features in an unknown impression that may be present in another impression, generally a known exemplar, from the same area of friction ridge skin."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
12	4.4.2	T	"Examiners have demonstrated an ability to accurately detect discriminating features ... Examiner confidence in the reliability of observed features ..." The terms "accurate" and "reliable" are both used in this paragraph suggesting that "reliable" is a synonym for "precision" and that both concepts are being addressed, but I suspect that this is not the intention.	change to: "Examiners have demonstrated an ability to accurately detect discriminating features ... Examiner confidence in the accuracy of observed features ..."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
64	4.4.2	E	their' needs to be 'the'	"Examiner confidence in the reliability of observed features increases with the clarity in an impression."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
193	4.4.2	T	The first and second sentences imply a level of accuracy and performance for all examiners under all circumstances that has not been demonstrated empirically. To the contrary, the existing evidence suggests examiners are not uniform in their performance. (See for example Miami-Dade Research Study for the Reliability of the ACE-V Process: Accuracy & Precision in Latent Fingerprint Examinations https://www.ncjrs.gov/pdffiles1/nij/grants/248534.pdf ; Ulery, Hicklin, Roberts, and Buscaglia, Measuring What Latent Fingerprint Examiners Consider Sufficient Information for Individualization Determinations https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0110179). And far too few studies have been conducted across a large numbers of variably trained and experienced examiners using a variety of test kits with ranges of difficulty to support such a sweeping claim.	These two sentences should be deleted.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
238	4.4.2	E	Grammatical ambiguity should also be clarified.	Change the third sentence to "Examiner confidence in the reliability of observed features increases with the clarity of the features in an impression."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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254	4.4.2		From the “observed features” (§ 4.4.2), LPEs detect the permanent and highly variable underlying features in the AFRS (§ 4.4.1) “even in highly distorted impressions” (§ 4.4.2). The text in Section 4.4 does not indicate, even at a high level, how LPE’s recognize permanent, highly variable features from other observed features in a distorted impression or how one would assess the ability of a particular LPE to do this more effectively than an untrained individual. Similarly, no discussion of how distorted an image can be before it can no longer be reliably used are described. Some justification and acknowledgment of limitations on these statements seems necessary as a part of the reasoning used by LPE’s and in the explanation of this reasoning to others.	Proposed Resolution: Include a summary of the high-level reasons or empirical evidence from the cited literature that support the claims made in this section and the necessary limitations on these claims directly in the document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
158	4.4.2	T	This section supports the use of using confidence, yet section 4.9.2.3 implies that relying on certainty is not scientific. Or is 4.9.2.3 saying that it is unscientific to imply 'absolute certainty'? Is it ok to say 'I'm very certain' since it does not imply absolute? As humans, we are often certain yet wrong. Science accounts for this by not <u>relying on confidence or certainty</u>.	Remove the sentence promoting using confidence and leave this concept for a methodology document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
157	4.4.2	T	States 'Examiners are capable of accurately detecting discriminating features in highly distorted prints'. This is only in research studies. All errors were due to examiners not accurately detecting features, so this statement is bolstering.	Remove the statement and the supporting references.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
156	4.4.2	T	This paragraph uses the term 'decides' which conflicts with other areas of deduction in this document. For a Source Identification it says they conclude. Is the examiner doing different things at different times (concluding or deciding)? Note: decisions are choices that are judged as good or bad, they are not judged to be an error. For example, it is my <u>opinion</u> that it will not rain so I <u>decide</u> not to bring an umbrella. It rained so I made a bad decision. Note 2: A person adds 4+7 and concludes it is X (they did not decide it was X).	Change 'decides' to 'concludes'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
159	4.4.2	T	It states, 'increases with their clarity in an impression'. Is 'their' referring to the features or the examiner?	Change the word 'their' to be 'the'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
59	4.4.3	T	Section 4.4.2 discusses examiner ability is much greater than an untrained individual (novice). Recommending to add an additional reference to support	4.4.3.3 to include study done by Tangen, Thompson, and McCarthy (2011) showing expertise/novice ability	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
239	4.5.1	E	It should be stated that an examiner preselects features for comparison before comparison takes place.	The second sentence can be edited to “An examiner considers correspondences and differences between these preselected features.” If this cannot be included in this sentence, the preselection of features should be added to 4.5.2.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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134	4.5.2	T	Ground-truth cannot be determined on unknown samples with any amount of examination.	Edit this section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
221	4.5.2	T	"... the ground truth of whether a particular feature actually exists and its true appearance can only be known by examining the source skin."	Exemplars taken either over time from reasonably capable personnel, and/or a set of exemplars taken by a skilled and experienced person will give a usable rendition of the friction ridge information present. The repeatability of the features verifies its existence to a suitable degree. The amount of variance caused by normal conditions such as pressure in a clear area does not prevent a qualified observer from noting the presence of a feature. If there is ambiguity, that should be appropriately factored into the conclusion. Slight variances within tolerances does not void the usability of a print.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
255	4.5.2		LPEs compare and contrast the "observed features" for "correspondences and differences" in the impressions (§ 4.5.1) or "recordings" (§ 4.5.2). The LPE cannot be certain of the underlying features without studying "the source skin" (§ 4.5.2). The text in this section could be read as suggesting that the forensic examination should include direct study of the source skin, if possible. However, this does not seem to be the likely intent and it is unclear how a comparison between skin and an impression left behind by contact of the skin with a receptive surface should be made. This text also suggests that direct examination of the skin would provide "certainty" about a source conclusion. That cannot be true since there will always be some uncertainty in the results of any forensic examination. The idea behind this text is probably to drive home the point that impressions or recording of friction ridge skin are imperfect and vary from impression to impression.	Proposed Resolution: Clarify how direct examination of the friction ridge skin relates to typical forensic examination. The new text should indicate whether or not this is viewed as a possible alternative to comparison of friction ridge impressions. Alternatively, the text about direct examination of the friction ridge skin may not be necessary and could be deleted.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
13	4.6.1	T	"As an examiner finds more corresponding features between two impressions, it becomes less likely that the corresponding set of features would also be present in an impression from a different source." This statement is not logically correct – finding features does not affect their likelihood. Also there is a logical step missing.	change to: "In general, the variability in features observed is greater for multiple impressions that come from different sources than for multiple impressions that come from the same source. Therefore, the larger the set of corresponding features observed between two impressions the greater the likelihood of those observations if the impressions came from the same source versus if they came from different sources."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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256	4.6.1, 4.6.2.3		The probability of finding more corresponding features in another impression from "a different source" decreases with the number of "corresponding [observed] features" (§ 4.6.1). The probability that "the impressions were made by different sources" grows with the number of "[observed] differences" (§ 4.6.2.3). Notice that § 4.6.1 is a statement about the conditional probability of observations given a proposition about their origin, whereas § 4.6.2.3 is a statement about the conditional probability of a proposition given the observations.	Proposed Resolution: A future document should distinguish between the first kind of statements (often called likelihoods) and the second (posterior probabilities).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
41	4.6.2.1	T	Each ending ridge in my finger is different than every other ending ridge in my finger. Tell me how RARE each ending ridge is. How closely an examiner can measure, and how closely an examiner chooses to measure is the key to accurate judging of sufficiency. Not labeling rarity to details of unique features.	Delete discussions of RARITY until levels of RARITY are actually determined and measured in previous stages of the examination process.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
207	4.6.2.1	T	To date, there is currently no method available to measure the rarity of a feature.	Replace the concept of "rarity" with the concept that the lower the <i>quality</i> of friction ridge detail, the higher the <i>quantity</i> of detail may be needed, and vice versa. Likewise, the lower the overall quality of the impression, the more quality control may be increased.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
222	4.6.2.1 and 4.6.2.2	T	This discusses giving more weight to rare features. Which specific features are rare and which are common? Does spatial relationship factor into this determination? How uncommon must a feature be to qualify as "rare"? Applied science allows for a different type of measuring than an applied science. Without quantifiable numbers of how common a feature has been, is, and will be, terms like "rarity" are partially opinion and experience.	Do not use terms like "rare" unless you can answer questions such as "how rare is it?" Measurement words should only be used when the subject can be measured.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
42	4.6.2.2	T	Show me two impressions from different sources that have details of its features repeated in impressions made by different sources. Low quality/clarity of details in impressions does not impart commonality simply because of the poor measurements the examiner chooses to make. You abandoned UNIQUE. Show me actual REPETITION since you brought it up.	Delete Rarity and REPEATED FEATURE from Different sources of FR SKIN.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
89	4.6.3.1	E	Do not use the phrase "weight of evidence" for the fact that not all features are equally important. "Evidence" has a slightly different legal meaning, and "weight of evidence" has a slightly different legal and statistical meaning.	Use a phrase such as "relative importance of features."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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90	4.7	E	Theorists of forensic inference have adopted the broad word “proposition” rather than the more specific term “hypothesis.” Understandably, this document does the same.	For greater precision throughout this section, use “hypothesis” for source propositions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
109	4.7	E&T	In 4.7: In order to acknowledge that the probabilities at issue are personal probabilities (rather than estimates based on empirical research).	Replace "the" probability in two places with "his or her probability" or "their probability."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
160	4.7	T	Earlier in the document it says that examiners should be able to put these concepts in their own words. 'Propositions' is not a concept that has been researched or trained in and therefore examiners cannot put this in their own words.	Remove reference to propositions and replace with 'assessment of observations'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
21	4.7, 4.8, 4.9	T	The whole idea using the "probability" that the latent print and exemplar came from the same source or not, is watering down the result to the point that there is no point. If the answer is a best guess why would the court want to take that guess into account. "Bayes Factor" uses numbers that are taken from a relatively small sample size and are estimated. If the estimate is wrong or the sampling has errors, then all the following answers will be wrong. There is a greater chance of error if the standard is lowered from "Identification" to "Probability". In Volume 122, Article No. 27 (2017) https://doi.org/10.6028/jres.122.027 Journal of Research of National Institute of Standards and Technology "Likelihood Ratio as Weight of Forensic Evidence: A Closer Look" Lund et al.'s summary acknowledges that Likelihood Ratio's are often in conflict with each other and data is missing to create the ratio.	Look at the past history for latent prints used for identification. There are millions and millions of exemplar fingerprints compared and have not had any from different sources match. So in trying to move away from the word "Identification" we are trying to solve a problem that has never existed and looking at the "what if" that is not supported by any of the data. Friction ridge impression can be identified to a same source. Every friction ridge study that uses a "ground truth", is supporting this as a fact.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
22	4.7.1	T	".....they must then consider the probability..."	Need a specific measurement to have an accurate "probability". None exists at this time.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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91	4.7.1	T	The idea of "correspondence" is ambiguous. Does it mean that at least one feature (ridge count, minutiae, etc.) in a given region of a print is the same and that the examiner should consider the probability that there would be (1) any correspondence ("sameness") at that location, or (2) the same specific feature(s) at that location?	Rewrite to convey the latter meaning.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
105	4.7.1	E&T	One of the strengths of these Best Practice Recommendations is the discussion of the logic of forensic inference. We agree with the statement in Section 4.7.1, that an examiner must "consider the probability of observing the corresponding features in two impressions made by the same source against the probability of observing the same correspondence in two impression made by different sources."		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
240	4.7.1	E/T	How does and examiner determine the probability of observing the same correspondence in two impressions made by two different sources?	The use of statistical analysis should be covered in a separate document. If the document is going to remain as is, more information of the use of the likelihood ratio in friction ridge analysis is needed in this document to explain how probability is determined.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
43	4.7.1	T	Show me actual correspondence from different sources. I am not talking about not being able to measure closely enough or choosing not to measure closely enough. Show me Actual Correspondence from Different Sources since your proposition states it corresponds.	>: I do not understand how to fix what you expect us to say like this. Delete.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
161	4.7.1 Evaluation	T	Many, worldwide, do not use the method described in this paper. The general method should be inclusive of different methods and standards, not promoting a view that has been presumed but not appropriately vetted. What is described is speculation disguised as science. It is not science if the probabilities are speculation that are not tested. In science, analysts speculate and then perform testing to support or refute their speculations. Those performing science do not simply rely on their own speculation.	change: "Once an examiner observes correspondence they must then consider the probability of observing the corresponding features in two impressions made by the same source against the probability of observing the same correspondence in two impressions made by different sources. " to: Once an examiner observes correspondence they must then consider the amount of correspondence'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
72	4.7.2	T	Consideration of source proposition	Clarify that this process can be entirely mental in nature and does not need to be written down in the case record or formalized as two written competing propositions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
162	4.7.2	T	As seen from the limited references, these are new concepts, not fully vetted. They are not inclusive of what most examiner do.	Remove this section and leave further description for the methodology document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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106	4.7.2.1	E&T	We also think it is useful to frame these possibilities as competing propositions, as suggested in Section 4.7.2.1—specifically the proposition that the unknown impression came from the same source as the known impression, and the alternative proposition that the unknown impression came from a different source. We think the description of the underlying logic becomes unclear, however, in Section 4.7.2.2, which says: The same source proposition considers the degree of correspondence (including both agreement and possible disagreement) of the observed features. The different source proposition considers the discriminability of the observed features.		Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
122	4.7.2.1	T	Similar to my comment regarding section 4.4.1. This section defines the two propositions as both involving "the known impression." This implies source identifications are made only between a latent/evidence impression and a known impression.	Reword, removing all references to "unknown" and "known." Example - "One proposition is: the first impression came from the same source as the second impression; the other proposition is: the first impression came from a different source than the second impression."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
214	4.7.2.1	T	There should be some sort of caveat regarding the possibility of not having enough information to determine either proposition. This section implies there are only two competing propositions. The reality of our work is that there are three.	Add the third proposition of inconclusive.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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257	4.7.2.1		Upon observing “correspondence” (§ 4.7.1), the LPE determines two likelihoods — namely, the probabilities of the observations of correspondence conditional on two propositions (hypotheses): “same source” and “different sources” (§ 4.7.2.1). But now “correspondence” means “both agreement and possible disagreement of the observed features” (§ 4.7.2.2). The citation to Lindley (§ 4.7.3.3) indicates that these likelihoods are “subjective” or “personal” probabilities. It is not entirely clear whether LPEs are being asked to assess the likelihoods individually or only to arrive at a personal estimate of their ratio. More importantly, the changing definition of “correspondence” is problematic. The interpretation framework proposed in this document relies almost exclusively on the “level of correspondence” between trace and control impressions. This strategy creates biases with respect to the Bayesian inference paradigm claimed throughout the document. Bayesian inference involves updating prior beliefs regarding a pair of mutually exclusive propositions using a multiplier, sometimes referred to as the Bayes factor, the likelihood ratio, or the weight of the evidence. (Some authors define the “weight of evidence” to be the logarithm of the Bayes factor; some use “support” for log-LR.) Conceptually, the Bayes factor, as used in forensic science, is the ratio between two probabilities: The first probability is a function of the similarity between the features observed on the trace and control objects. The second probability is a function of the rarity of the features observed on the trace object alone. However, the proposed document seems to rely on two different probabilities: The first is a function of the similarity between the features observed on the trace and control objects assuming that both objects originate from the same random source. The second is a function of the similarity between the features observed on the trace and control objects assuming that the objects originate from different random sources. In other words, the proposed document does not formally account for the rarity of the features observed on the trace object, but only accounts for the rarity of	Proposed Resolution: In a new document, rewrite section 4.7.1 along the following lines: Examiners observing correspondences between the trace and control impressions must consider the probability of the corresponding features in two impressions made by Person X against the probability of observing the features present on the trace impression in the population of potential sources defined by the alternative proposition. In addition, the language in sections 3.8, 4.6.1, 4.6.2.3, 4.7.1, 4.7.2.1, 4.7.2.3, 4.8.2, 4.9.2.2.2 and 4.9.2.2.3 needs to be modified to be consistent with the above.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
23	4.7.2.2	T	“....considers the degree of correspondence...”	Need a specific measurement to have an accurate “degree”. None exists at this time.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
14	4.7.2.2	T	“The same source proposition considers the degree of correspondence (including both agreement and possible disagreement) of the observed features. The different source proposition considers the discriminability of the observed features.” This has confused the propositions with assessment of likelihood given the propositions. It is also incorrect as to what is to be assessed with respect to each proposition. Note that “discriminability” as defined in §3.3 appears to be some thing that arises from interpretation rather than something that interpretation is based on.	change to: “The practitioner assesses the likelihood of the degree of correspondence (including both agreement and possible disagreement) of the observed features if the same-source proposition were true. The practitioner also assesses the likelihood of the degree of correspondence (including both agreement and possible disagreement) of the observed features if the different-source proposition were true.”	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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44	4.7.2.2	T	Since you bring up degrees, how many degrees do we consider? How can degrees of correspondence occur within measurements of degrees of disagreement? Reasonable degrees of scientific certainty is a phrase others have used and have been criticized. I understand why. Will we be criticized for using degrees of correspondence when we do not know how to measure degrees of correspondence? If correspondence has degrees, why not <u>discriminability</u> ?	> This language is foreign to many of us and I do not know how to make it acceptable.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
107	4.7.2.2	E&T		It is not clear what it means for a “proposition” to “consider” degree of correspondence. We suggest re-wording Section 4.7.2.2 to read: The examiner must consider how probable it would be to observe the patterns seen in the two impressions (including both similarities and discrepancies) if the impressions were made by the same finger. This would involve consideration of the likelihood that slipping or torsion of the finger, or some other process, could have distorted one or both of the impressions enough to produce any discrepancies. The examiner must also consider how probable it would be to observe those particular patterns (including both similarities and discrepancies) if the impressions were made by different fingers. This would involve consideration of the rarity of the shared features, hence how likely or unlikely it would be to observe so much similarity in impressions made by different fingers. Finally, it would be helpful to specify the reference class that the examiner should consider when evaluating the probability of the observed correspondence under the proposition that the unknown impression came from a different source. The probability of observing a particular set of features might be quite different if the reference class is “all fingerprints in the world” than if the reference class is, say, “fingerprints selected via an AFIS search based on their similarity to the questioned impression.” We believe these recommendations should specify the relevant reference class. Alternatively, if the reference class is not supposed to matter to the examiner’s evaluation, then we suggest changing the language used to discuss the alternative proposition by replacing the phrase “different source” with “any other source”.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
92	4.7.2.2	E & T	The propositions (hypotheses) do not consider anything other than the possible states of nature. “Degree of correspondence” is ambiguous. Why does “possible” qualify disagreement but not agreement?	Rephrase: For the same-source hypothesis, the examiner considers the similarities and dissimilarities of the observed features in light of those expected in different impressions from the same friction ridge skin. For the different-source hypothesis, the examiner considers the similarities and dissimilarities of the observed features in light of those expected in different impressions from the friction ridge skin of different individuals. The latter depends on the rarity of the observed features in a relevant population of <u>possible sources</u> .	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
15	4.7.2.3	T	"The degree to which support for a proposition of same source outweighs support for a proposition of different source is the strength of the evidence (also referred to as a likelihood ratio or Bayes’ Factor)." The wording is misleading and invites the prosecutor's fallacy.	change to: "The degree to which the likelihood of the observations if the same-source proposition were true outweighs the likelihood of the observations if the different-source proposition were true is the strength of the evidence (also referred to as a likelihood ratio or Bayes’ factor)."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
45	4.7.2.3	T	Are five degrees support for a proposition enough to outweigh four degrees support for the other proposition when the total number of degrees are not provided? What are the maximum number of degrees available? 100? Are you saying Degrees of Support, Likelihood Ratios, and Bayes' Factors are the same? If the same, why so many labels?	I await the decision for whatever conclusions are accepted occurs before too long so I do not have to articulate what is being proposed.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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93	4.7.2.3	T	A likelihood ratio or Bayes factor can be understood as quantifying the support for a hypothesis. But neither is "[t]he degree to which support for a proposition of same source outweighs support for a proposition of different source."	Rephrase in terms of likelihoods (as the term is used in statistics).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
223	4.7.2.3	T	The term "likelihood ratios" is used	A likelihood ratio is only feasible if the Examiner is able to quantify the likelihood of a specific feature appearing in a specific location. Without numbers, a "likelihood" cannot be quantified. Inconclusive conclusions must remain inconclusive. "Maybe" or "more likely than not" does not aid the court in determining the facts, and can lead to an incorrect conclusion. If the data is insufficient, it should not be presented as indicative of an indefensible conclusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
167	4.7.2.3	T	The description of strength of evidence is not consistent with 'strength of evidence' in the definition section.	Remove 'also referred to as a likelihood ratio or Bayes' Factor'. Then remove reference #18 given for Bayes Factors.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
163	4.7.3	T	The references are extremely limited considering how controversial this concept is. It appears the authors looked for references that supported their view and did not consider alternatives (ignored what didn't fit their preconceived notions). This goes against science.	Remove these references and leave them for a document on methodology.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
94	4.7.3.1	T	Finkelstein and Fairley (1970) is not the best source for the claim that latent print examiners consider two competing propositions. They designate the hypotheses as guilt and innocence. (They modified that in a 1971 response to a critique of their article.)	Instead, cite Robertson et al.'s book on interpreting evidence?	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
165	4.7.3.1	T	There is no reference in Annex B for this entry and therefore it is not a supportable reference.	Remove the reference of Aitken et al (2010)	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
164	4.7.3.1	T	This reference is a suggestion by the authors, Finkelstein and Fairley (which is clearly stated in the abstract of the paper). This is not testing that the suggestion works. It is also recommending use for when there is an accumulation of evidence, or for when conclusions are inconclusive (consistent but not sufficient). This reference is not an appropriate reference for the statement being recommended.	Remove the reference of Finkelstein and Fairley (1970).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
166	4.7.3.1	T	This reference indicates that more work is needed. It states, "This is only an early attempt at introducing the contribution of the quality of the mark to the model: refinement of the treatment is left for future work." Since more work is needed, this cannot be recommended as a best practice.	Remove the reference of Neumann 2012 since it is a proposal not fully developed or tested (the reference itself indicate more work is needed).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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95	4.7.3.2	T	Section 4.7 discussed using likelihoods to express strength of evidence. References such as Champod (2015) urge examiners not to reach conclusions about the hypotheses. They favor attending only to the support (the likelihood). In the article cited, Champod wrote that “my position remains unchanged: the expert should only devote his or her testimony to the strength to be attached to the forensic findings and that value is best expressed using a likelihood ratio. The questions of the relevant population—which impacts on prior probabilities—and decision thresholds are outside the expert’s province but rightly belong to the fact finder.” The title of this subsection, “Using Strength of Evidence to Support Conclusions,” suggests having the examiner give a conclusion and use likelihood to support it. Champod cannot be cited for that idea.	Change “Using Strength of Evidence to Support Conclusions” to either “Using Likelihoods to Indicate Strength of Evidence” or “Using Likelihoods to Indicate Support for Hypotheses.”	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
168	4.7.3.2	T	This reference is regarding a shift in thinking, not scientific research that the shift is fully developed or able to be currently used within the discipline. In this paper, Swofford does not state how to articulate conclusions and has changed his own agencies articulation twice since this paper was published.	Remove the reference of Swofford (2015) since it is not currently able to be used within the discipline.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
16	4.8	T	4.8.2: "Source identification is the conclusion that the observed corresponding friction ridge details offer substantially stronger support that the two impressions were made by the same source than by different sources." The meaning of the phrase "substantially stronger" is not defined. If "substantially stronger" is not defined, then "source identification" is not defined. The document appears to be generally progressive, but seems to have gotten stuck here at an intermediate state between wanting practitioners to state probabilistic conclusions and appeasing the traditionalists that wants to continue giving categorical or apparently categorical conclusions. There is no solution that will satisfy both the progressives and the traditionalists. This is a paradigm shift in thinking, one has to come down on one side or the other.	Abandon use of the concept and term "source identification". Delete all reference to this term from the document, including deleting §3.8 and §4.8 in their entirety.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
194	4.8.1	T	As discussed above, "source identification" should not be used.	Eliminate the term "source identification"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
3	4.8.2	E	Starts with "Source identification" then waters it down to a level that jurors will struggle to reconcile.	Reword this so that jurors will be left to weigh the evidence and testimony given, not forced to try to interpret our conclusions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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46	4.8.2	T	When does support become SUBSTANTIALLY stronger support? WE are criticised for SUFFICIENCY. I do not see levels of descriptors like SUBSTANTIALLY solving the problem.	I wish us well.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
96	4.8.2	T	This redefinition of "source identification" as a statement that there is "substantial support" for a hypothesis is a zinger. Rather than explain what a current source identification is, it substitutes a statement of evidentiary value. If all that an examiner means by "source identification" is that a likelihood ratio is "substantial," then the examiner is not reaching a conclusion as to the identity of the source. This change in the current practice may be desirable (many people, including me, have advocated it), but it departs from the initial promise of a stopgap explanation of what the established type of source attribution is.	Either (1) candidly present the document as a new way to use the words "source identification" that precludes the examiner from testifying to the conclusion that two prints are in fact associated with one another via a common source, or (2) allow an "identification" of a particular individual as the source to mean that the examiner has concluded, to a high degree of personal probability (to use the phrase preferred by Lindley (2014, pp. 29-30)), that a particular individual is in fact the source. Explain that it is a conclusion that this individual is the source (as opposed to any alternatives that were considered) because, for any plausible prior probability for the hypothesis, the likelihood ratio or Bayes factor is so large that the posterior probability is nearly one.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
123	4.8.2	T	Same concern as section 3.8, stated above. Duplicating areas and documents where source identification is defined creates potential for future conflicting definitions of the same term	I understand and agree with the necessity to state here what a source identification is. Perhaps there could be a notation or footnote at the end of the sentence that states "Or as defined and outlined by document X."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
169	4.8.3	T	a) the term 'source identification' is misleading since it is not obvious it is intended to be different than the historic term of identification.	Using the term identification to be an association (as suggested above) is clearer, more accurate, and more transparent. Then state that the definition is being modified from the historic use of the word.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
170	4.8.4	T	a) 'Substantially stronger' indicates a strength that is above 'stronger'. How are both 'stronger' and 'substantially stronger' measured? b) How does a person measure the amount of support for a different source? Just because you can't find support does not mean support does not exist (i.e., just because you can't find your car keys in your house does not mean they are not there). An examiner cannot do this since there is no mean of measuring 'support for a different source'. The best that someone can do with this is guess and research has shown that the false exclusion rate is high (i.e., examiner are not good at determining 'support for a different source'). It goes against science to indicate a high level of support with no means of determining that it is a high level of support.	a) Remove wording that indicates a measurement that is not achievable. This concept should be left for the methodology document to tackle. The wording and definition given previously would rectify this problem (restated below). change: 'Source identification is the conclusion that the observed corresponding friction ridge details offer substantially stronger support that the two impressions were made by the same source than by different sources.' to be: "Identification - a level of association indicating there is enough correspondence to infer/deduce the originating source." or b) Clarify (or define) what is 'stronger' and what is 'substantially stronger' otherwise no examiner can ever give a 'source identification'.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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224	4.9	T	The Examiner is testifying to an opinion.	The Federal Rules of Evidence allow opinion testimony from someone that has been accepted as an expert. An Examiner needs to be truthful about what they believe and if their expertise convinces them to a practical certainty that the source material and the questioned print share a common origin, then that's what they need to be allowed to state to the court.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
190	4.9	T	[See #189]	Should this recommendation be rejected, any other permitted conclusion should still avoid the phrase "Source Identification" and must include limiting language making clear that "at present, there is no empirical basis for estimating how many other people might have a finger (palm) with an indistinguishable corresponding set of features". In addition, the audience should be told that the method employed, "ACE-V, is a subjective method and neither the method nor the practitioner has been tested in a manner sufficient to estimate the discipline's or the practitioner's error rate". Any conclusion without an affirmative statement of the limitations overstates the evidence.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
171	4.9.1 (shall) 4.9.2.1 4.9.2.2.1 note 4.9.2.3 4.9.2.4.4 Annex A 4.9.1	T	At the time of this writing (6/4/2019), the ASB is unclear if BPRs can include 'shall' statements. Teresa said the ASB is meeting on this next week. If shall statements are not allowed in BPR then the 'shall' statements in these sections need to be changed.	Change 6 shall statements to should statements.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
124	4.9.2.1	E	What does "informed opinion" mean? What was the examiner informed of, to assist with his or her conclusion?	Replace the word "informed" with "expert."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
97	4.9.2.1	T	It is not clear what it will mean in practice to express reported conclusions as "informed opinion." of the examiner. Must the examiner's testimony and report include the statement "The conclusions reached in this report are my opinion" or "The identification is my opinion"? It is not obvious that this accomplishes anything useful. It is already obvious that an examiner who reports or testifies that an individual is the source of a latent print (or that there is "substantial support" for that conclusion) means that "it is my opinion" or "it is my belief" or "it is my conclusion" that the individual is the source (or that there is substantial support for the conclusion that the individual is the source).	Delete this subsection.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
174	4.9.2.1	T	If this document is about positive associations then 'conclusions' in this sections is incorrect. 'Conclusions' indicates this section is about all conclusions.	Change 'conclusions' to be about positive results.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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173	4.9.2.1	T	'informed opinion' is adding weight that may not be warranted (encouraging overstatements, i.e., bolstering).	Remove 'informed' and leave that for the courts to decide.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
172	4.9.2.1	T	The document uses the term 'opinion' and 'informed opinion'. For consistency, one term should be used. Note: science does not rely on the person (i.e., opinions), science relies on a systematic approach (i.e., validated methods).	If the term opinion is being used differently than the standard definition then define it. If 'informed opinion' is to be used, then define it in the definitions section. Scan the entire document and use terms consistently. My preferred resolution would be to remove references to opinions and leave that for the courts. Any reference to methods should be in a methods document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
125	4.9.2.2	T	There needs to be a conclusion for when two latent impressions are identified as both coming from the same source, when the source is still unknown	In 4.9.2.2, change "three" to "four." Then add a section 4.9.2.2.4 that offers a conclusion for latent-to-latent identifications	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
17	4.9.2.2	T	"Reported conclusions may be expressed in one of the three following ways to ensure proper interpretation." No manner of reporting will "ensure proper interpretation" on the part of the recipient.	delete: "to ensure proper interpretation"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
18	4.9.2.2	T	None of the proposed manners of expressing the conclusions report the strength of evidence that was derived in §4.7.	Delete the entire content of 4.9.2.2 including subsections and replace with: "Reported conclusions should be expressed as follows: The latent impression on Exhibit 1 and the standards bearing the name XXXX have corresponding friction ridge detail. My assessment is that the observed degree of correspondence is N times more likely if the two impressions came from the same source than if they came from different sources."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
47	4.9.2.2	T	Whose opinion is it that these statements will ensure the receiver will reach proper interpretation? It is sad that the receiver of the information is expected to interpret what was said instead of understand what was said. Can the three statements be combined to cover all the bases of thought?	>"Reported conclusion may be expressed in the following manner as expressed in 4.9.2.2.1, or .2 or .3."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
26	4.9.2.2	T	Suggested conclusion formats are potentially confusing to detectives/attorneys reading the report	Remove 4.9.2.2.2, 4.9.2.2.3; leave out adding the definition of "source identification" in 4.9.2.2.1	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
60	4.9.2.2	E	Colon needed after the word 'interpretation'	insert necessary colon, remove period	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
175	4.9.2.2	T	If this document is about positive associations then 'conclusions' in this sections is incorrect. 'Conclusions' indicates this document is about all conclusions.	Change 'conclusions' to be about positive results.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
4	4.9.2.2.1	E	Best way of presenting this conclusion, except for the poorly worded 4.8.2 reference.	Either rewrite this section to include it's limited to the examiner's opinion and delete this, or reword 4.8.2	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
69	4.9.2.2.1	T	4.9.2.2.1 Uses the term "latent impression", which is narrow in scope and does not include the entirety of friction ridge items (including tenprint impressions, other intentionally captured friction ridge impressions, patent impressions, etc.). The term "latent impression" is defined in the OSAC Lexicon as "An impression not readily visible to the naked eye." The title of the document is Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examinations	Replace the term "latent impression" with "impression", which is defined in the OSAC Lexicon as "A friction ridge image containing friction ridge detail produced on a surface by pressure."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
102	4.9.2.2.1	E&T	First, we urge reconsideration of Section 4.9.2.2.1, which allows examiners to state that a latent impression was "identified to" a specific source. The AAAS report offered an extensive discussion of why "identification" is a problematic term. It clearly implies that the potential donor pool can be, and has been, narrowed to a single source.	If the term "identification" is allowed, it should always be accompanied by an explanation that "identification" does not mean the donor pool has been narrowed to a single source and also that there is no scientific basis for making such a claim. If examiners cannot say explicitly that they have narrowed the pool of possible sources to a single finger, they should not imply it.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
195	4.9.2.2.1	T	As discussed above "identified" and "source identification" should not be used.	Eliminate the terms "identified" and "source identification"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
241	4.9.2.2.1	E/T	The term "was identified" has the same deficiencies as the term "individualized" and should not be used.	Delete this option.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
176	4.9.2.2.1	T	I see that 'identification' can be used as long as 'source identification' is mentioned. Examiners may not be able to testify to source identification. In some states (Illinois) they are only to answer yes or no. So this document is requiring something practitioners do not have control over.	Remove 'source identification' throughout the document and replace it with identification or association for clarity and consistency.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
258	4.9.2.2.1		Finally, the LPE reaches a “conclusion” about the hypothesis that the prints are from the same source (§§ 4.7.2.1, 4.8 & 4.8.1), but the conclusion is not that the same-source proposition is true (or that the examiner believes that it is true). The “source identification conclusion” (§ 4.8) is only that “the observed corresponding friction ridge details offer substantially stronger support that the two impressions were made by the same source than by different sources” (§ 4.8.2). 4.8.2 should be reworded as: the observed friction ridge details offer substantially stronger support that the trace impression was made by Person X than by a different individual from the population defined by the alternative population. The introduction insisted that this document was not recommending “a weight-of-evidence approach to friction ridge reporting,” but at the end of the day, the LPE is instructed to do exactly that. He or she may report that “[t]he latent impression ... was identified ... to [a specific individual],” but “[i]f using this format, the definition of ‘source identification’ in section 4.8.2 shall be included in the report and testimony” (§ 4.9.2.2.1). So the LPE must say, when I told you that “I identified the latent print to Mr. X, I did not mean that I identified it as having “[o]riginated from [Mr. X] the same source”” (§ 4.9.2.2.4, emphasis deleted). What I really meant was only that the features I observed are substantially more probable if it is Mr. X’s than if it is anybody else’s.” This redefinition of “identification” conflicts not only with the usual understanding of the word “identification,” but also with the idea that the LPE is “expressing their [sic] opinion of the source of the unknown impression, along with a description of the strength of the evidence supporting that opinion” (§ 4.9.2.4.1, emphasis added). How can there be a “strength of the support for the examiner’s opinion” (§ 4.9.2.4.2) when “strength of evidence” refers to a likelihood ratio or a Bayes factor and the examiner’s opinion is only a qualitative judgment of the magnitude of the ratio? Redefining a conclusion as a subjective statement that there is a lot of “support” for the hypothesis undermines clear thinking about the difference between statements of conclusions and statements of evidentiary value. If all that an examiner means	Proposed Resolution: It would be possible to rewrite the document to allow for an “identification” of X as the source to mean that the examiner has concluded (to a high degree of subjective probability) that X is in fact the source. But to give a rationale for this conclusion, it would be necessary to explain that a source identification conclusion is a conclusion that X is the source (as opposed to any alternatives that were considered) because, for any plausible prior probability for the hypothesis that X is the source (which is the “conclusion” in an “identification”), (a) the likelihood ratio or Bayes factor is so large that the posterior probability approaches one, and that (b) after balancing the risks and consequences of an erroneous conclusion, the examiner has decided that the remaining uncertainty could be dismissed.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
48	4.9.2.2.1 Note	E	If we have to articulate what is in the NOTE, why is the NOTE not part of 4.9.2.2.1?	Combine the NOTE into the explanation.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
103	4.9.2.2.2	E&T	Second, we urge explicit acknowledgement that the examiner's consideration of probabilities is a personal assessment that does not rest on formal empirical studies or analysis of databases.	To this end, we suggest adding the following sentence at the end of Section 4.9.2.2.2: "This conclusion is based on the examiner's personal opinion of the likelihood of observing this degree of correspondence in impressions made by the same source, relative to the likelihood of this observation if the impressions were made by any other source." We suggest adding a similar sentence at the end of Section 4.9.2.2.3 saying: "This conclusion is based on the examiner's personal opinion of the likelihood of this observation if the impression were made by any other source." The AAAS report suggested several alternatives to saying the examiner had "identified" the print to a specific source. One suggested alternative is quite similar to recommendation 4.9.2.2.3: The latent print on Exhibit ## and the record fingerprint bearing the name XXXX have a great deal of corresponding ridge detail with no differences that would indicate they were made by different fingers. There is no way to determine how many other people might have a finger with a corresponding set of ridge features, but it is my opinion that this set of features would be unusual (AAAS, 2017, p. 67). We believe this language improves on the language of Section 4.9.2.2.3 by better acknowledging the personal nature of the judgment of rarity and the uncertainty about the number of alternative sources. We urge that this language be considered as an alternative.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
70	4.9.2.2.2	T	4.9.2.2.2 Uses the term "latent impression", which is narrow in scope and does not include the entirety of friction ridge items (including tenprint impressions, other intentionally captured friction ridge impressions, patent impressions, etc.). The term "latent impression" is defined in the OSAC Lexicon as "An impression not readily visible to the naked eye." The title of the document is Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examinations	Replace the term "latent impression" with "impression", which is defined in the OSAC Lexicon as "A friction ridge image containing friction ridge detail produced on a surface by pressure."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
196	4.9.2.2.2	T	This proposal begs the question; by what objective standard does an examiner determine that the observed correspondence offers "substantially stronger support" as opposed to some lesser level of support or some higher level of support?	Provide objective standards for making such determinations or refrain from such statements.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
242	4.9.2.2.2	E/T	This conclusion statement relies on a likelihood ratio framework that is not adequately described in this document. Given the lack of standards and guidelines for this type of analysis, conclusions of this type should not be included in this document. In addition, phrases describing "Corresponding friction ridge detail" and "substantially stronger support" lack clarity.	Delete this option. If a recommendation of this form is included, details regarding the quantity of corresponding friction ridge detail and what is meant by "substantially stronger support" must be clarified.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
177	4.9.2.2.2	T	'substantially stronger' is highly misleading. If you want to clearly articulate conclusions, why support overstating conclusions?	Remove this as a recommendation or replace 'substantially stronger' with 'is believed to be stronger...'	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
5	4.9.2.2.2 / 4.9.2.2.3	E	Both of these statements could be easily objected to as speculative. "Substantially", "believed", and "rare" are the epitome of subject opinion.	Remove both sections, as they insert way more subjective opinion that cannot be demonstrated by any research or data.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
24	4.9.2.2.3	T	"...is believed to be rare...."	Adding additional subjectivity to the conclusion. If goal is to move toward an objective model, this does not meet that goal.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
49	4.9.2.2.3	T	How RARE? 1/50 could be considered rare. If I articulate this statement, I am confident neither the audience nor I will be ensured of proper interpretation.	Delete this option.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
71	4.9.2.2.3	T	4.9.2.2.3 Uses the term "latent impression", which is narrow in scope and does not include the entirety of friction ridge items (including tenprint impressions, other intentionally captured friction ridge impressions, patent impressions, etc.). The term "latent impression" is defined in the OSAC Lexicon as "An impression not readily visible to the naked eye." The title of the document is Best Practice Recommendation for Articulating a Source Identification in Friction Ridge Examinations	Replace the term "latent impression" with "impression", which is defined in the OSAC Lexicon as "A friction ridge image containing friction ridge detail produced on a surface by pressure."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
197	4.9.2.2.3	T	This proposal begs the question; by what objective standards does the examiner determine that he or she "believes" the observed correspondence is "rare"?	Provide objective standards for forming such beliefs about rarity or refrain from such statements	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
243	4.9.2.2.3	E	The basis for determining rarity of a set of features should be established. In addition, the phrase "is believed" should be changed to convey the beliefs are those of the individual examiner.	This option offers the best solution for reporting and presenting a conclusion without overstatement. This option does not include the use of likelihood statements and is an interim solution that could be used by a majority of laboratories without having to change what is currently being done. The inclusion of language from the AAAS 2017 latent print report would only enhance what is already here, e.g. "The latent print on Exhibit ## and the record fingerprint bearing the name XXXX have a great deal of corresponding ridge detail with no differences that would indicate they were made by different fingers. There is no way to determine how many other people might have a finger with a corresponding set of ridge features, but it is my opinion that this set of features would be unusual." What definitely must occur is that the examiner's statement of correspondence must be given as an opinion. As the statement is currently written change to "The observed correspondence is believed to be rare ..." to "... I believe the observed correspondence to be rare ..." or "... It is my option that the observed correspondence to be rare ...".	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
98	4.9.2.2.4(a)	T	It does not seem possible for an examiner to testify to a traditional "source identification" without implying "originated from the same source", "made by", or "matched to." Moreover, "matched to" does not imply "originated from a common source." It just means that the features match — the corresponding discernible features are within the range for "closeness" that would be expected when generating replicate prints from the same area of skin.	If there is no way to justify same-source conclusions, then abandon this document and prohibit the use of "identified to" in a broader standard on allowable statements based on perceived "closeness" in features. Following the views of this document, that approach would substitute evidence-centric statements (statements about likelihoods) for all conclusion-centric ones (statements about the truth, falsity, or probability of source hypotheses). See David H. Kaye, The Nikumaroro Bones: How Can Forensic Scientists Assist Factfinders?, 6 Va. J. Crim. L. (2018), https://papers.ssrn.com/abstract_id=3177752	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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126	4.9.2.3	T	Part "a)" includes the phrase "originated from the same source" as terminology that should be avoided. This is misleading considering the definition of source identification includes the phrase "made by the same source," as does the conclusion offered in section 4.9.2.2.2.	I understand the purpose here is to state that examiners should not offer with certainty that the two impressions definitely, positively originated from the same source. Reword the phrase to make its intent more clear, or strike this phrase from this section.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
127	4.9.2.3	T	Part "d)" needs to clarify that opinions may be given when there DOES exist objective and observable data, and that this section is only referring to when the conclusion is not backed up by objective data	Add phrasing that clarifies this. Furthermore define what it means for a conclusion to be "unsubstantiated."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
61	4.9.2.3	E	Colon needed after the word 'following'	insert necessary colon, remove period	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
76	4.9.2.3	T	Somewhat confusing to include "it's my opinion" as a prohibited statement, after clearly defining the conclusion as the informed opinion of the examiner. Also, why stress that others have to agree with it if there's the later statement that verification is not an indication of accuracy?	d) Qualifying any inappropriate or misleading statement, or an unsubstantiated conclusion, with "it's my opinion" in order to offer the statement or conclusion. See note 1 about verification and accuracy.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
198	4.9.2.3	T	As stated above, prohibiting the phrases listed in this section is appropriate and commendable given past practices. However, there is no meaningful difference between that which is being prohibited and that which is being permitted.	Add source identification to the list of prohibitions.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
199	4.9.2.3	T	Section c) should be changed in one respect. The statement "there is no way to separate a method error rate from a practitioner error" is not entirely accurate and suggests that it is not possible to provide an estimate of the method's error rate. It is not possible to know the method's error rate or the practitioner's error rate but it is possible to estimate both with sufficient and appropriate testing. The current absence of an estimate of the method's and the practitioner's error rate should, however, be disclosed.	This sentence should be deleted and the section should end with the following "Currently there is no established practice of testing examiner performance to estimate each examiner's error rate and only limited research has been conducted testing the method's error rate." In addition, in the absence of an empirical assessment of the error rate, claims that the error rate is "low" or "very low" should be prohibited.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
244	4.9.2.3	E	The subsections included in 4.9.2.3 describing inappropriate or misleading words and phrases are useful and important. This recommendation needs to be a free-standing statement with the subsequent information being a further explanation.	Re-label 4.9.2.3 as 4.9.3 Statement	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
178	4.9.2.3	T	Research has shown that these terms are not problematic, it is only problematic to imply absolute accuracy (accuracy is different from certainty). All of these phrases do not imply absolute accuracy or absolute certainty. For instance, it does not imply absolute accuracy or certainty if a person says their opinion is that the latent was made by....'	Change this to indicate that a practitioner should state the type or strength of conclusions, along with the conclusion (i.e., opinion, belief, determination, inference, deduction, etc.) However, legally, it is not up to examiners to state the type or strength of a conclusion; attorneys are responsible for asking the right questions, e.g., 'what is the possibility your conclusion is wrong?'. The OSACs or the ASB cannot and should not try to shift attorney responsibilities to forensic practitioners. Practitioners should only be responsible for not overstating results. Saying 'I identified this print to XXX' is not an overstatement .	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
66	4.9.2.3 (a)	E	Reporting or testifying to " <i>source identification</i> " but being prohibited from saying "It is my opinion that Latent A <i>originated from the same source</i> as Exemplar X" is little more than a pedantic game of semantics. To try and explain the artificial difference in a report or in court would only confuse a lay person and would create uncertainty as to the witness' meaning.	Mandate through a "shall" statement the inclusion of the word "opinion" in all reports and testimony referring to a conclusion, to include the definition of opinion as being "belief stronger than impression and less strong than positive knowledge." That is a wide gray zone, as it should be.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
179	4.9.2.3 (a)	T	Science has a method to exclude those not viewed, it is called deduction. Deduction is an accepted scientific method.	Clarify that 'exclusion of all others' can be deduced or theoretical, but comparisons to all others should not be implied.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
6	4.9.2.3 (a)	E	The phrase "same source" should not be on the list of banned phrases.	It is used in this very document, specifically in 4.8.2, so leave it available.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
25	4.9.2.3 (b)	T	"Numerical certainties of any degree should not be reported without an empirical basis"	This is the most vexing of the proposed language in that this is in direct contrast to the aforementioned "probability", "degree", "believed to be rare" statements.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
62	4.9.2.3 (b)	E	The words 'should not' implies that it is optional	change 'should not' to 'shall not'	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
63	4.9.2.3 (d)	E	The word 'should' appears twice in the explanation and implies that it is optional	change 'should' to 'shall'	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
65	4.9.2.3 (d)	T	It is appropriate for the ASB to provide clarification and instruction on Rule 702 of the Federal Rules of Evidence and Rule 16 of the Federal Rules of Criminal Procedure, but the ASB should avoid modifying or restricting these Rules. The Merriam Webster Dictionary I checked gives three definitions of "Opinion" -- 1. a view, judgment, or appraisal formed in the mind about a particular matter; 2. belief stronger than impression and less strong than positive knowledge; 3. a formal expression of judgment or advice by an expert. The distinction between a substantiated opinion, an unsubstantiated opinion, or an informed opinion is artificial and is largely meaningless or, worse, confusing. Attempting to differentiate between types or levels of opinions begs the question, "Where on that scale does your opinion in this case fall exactly? How strong is your opinion?" Do not put us in the position of having to wrestle with that impossible question in reports and testimony, which is outside the scope of Rule 702 and Rule 16.	Add a definition of "Opinion" to <i>Section 3: Terms and Definition</i> and get rid of the expressed idea that some types of opinions are stronger than others. I would suggest including all three definitions from Merriam Webster and putting them in context of Rule 702. The zone between a little "stronger than impression" and a little "less strong than positive knowledge" is a wide zone that inherently recognizes some opinions may be stronger than others without calling for the unanswerable question "What sort of opinion is that and how strong is it?"	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
180	4.9.2.3 b	T	The concept of not relying on certainty conflicts with 4.4.2 since 4.4.2 says that examiners use their confidence (certainty is a measure of confidence, certainty is not a measure of accuracy). Not relying on certainty also conflicts with the idea that examiners rely on their beliefs.	Decide what examiners are allowed to rely on and make it consistent throughout the document. Science relies on what can be successfully demonstrated to others to the point of general consensus (and general consensus in science is not the same as 'consensus', i.e., general consensus in science is not a vote, general consensus means that all reasonable doubt has been eliminated).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
181	4.9.2.3 b	T	This statement implies that someone can say they are very certain or very confident (or extremely certain) in their conclusion.	Clarify if 'very certain' (or other non-numerical statements) are or are not being recommended (allowed) by this document.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
19	4.9.2.3b	T	"100% Certainty ... Numerical certainties of any degree should not be reported without an empirical basis." I am a proponent of the use of empirical procedures to assess strength of evidence. In contrast, authors of some of the works cited in the draft document support the idea that probability values can be assigned subjectively. This debate, however, is not related to the questions of whether practitioners should be allowed to make statements of 100% certainty – we agree that they should not.	delete: "Numerical certainties of any degree should not be reported without an empirical basis."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
183	4.9.2.3 c	T	The following sentence is unnecessary adds nothing to the sentence: "as with 100% certainty"	Remove 'as with 100% certainty'	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
182	4.9.2.3 c	T	The following statement is not true or needed. "Because the friction ridge comparison process takes place within the mind of the examiner, <u>there is no way</u> to separate a method error rate from a practitioner error rate." It is not impossible to separate the two. Just because it has not been done does <u>not mean it is impossible</u> .	Remove this statement because it is untrue and unnecessary in the sentence.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

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7	4.9.2.3 d)	E	Our expert opinions are not "unsubstantiated conclusions" and clearly meet the very definition included in this same section.	Our expert opinions are based on objective and observable data, and result in conclusions that can be substantiated by others. Even Simon Cole concedes this. Remove this.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
216	4.9.2.3(d)	T	Listed under problematic phrases is "It's my opinion". Under the Federal Rules of Evidence we as experts are authorized to give our informed opinion. "It's my opinion..." should not be listed under problematic phrases even though you have the parenthesis after to clarify.	Remove (d) from 4.9.2.3.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
215	4.9.2.3(a)	T	Listed under problematic phrases is "made by". The wording above in 4.9.2.2.2 "made by" and in 4.9.2.2.3 "came from" is in direct conflict with 4.9.2.3.	Remove "made by" from 4.9.2.3	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
55	4.9.2.3.a)	T	"made by" is stated as an inappropriate term for identification statements, however statement 4.9.2.2.2 specifically states "made by" as an allowed conclusion; it appears that it is allowed with the disclaimer in 4.9.2.2.2 but then 4.9.2.3.a) contradicts this by stating it is not allowed	clarify that "made by" is allowed in conclusion statement as long as it is paired with the disclaimer statement outlining the strong support (if this is what is meant by the use of "made by" in that statement); since "made" is a synonym of "originated", can "originated from the same source" still be used if paired with the same disclaimer statement?	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
200	4.9.2.4	T	Stating the limitations should not be an option but should instead be a part of the conclusion to avoid overstatements and misunderstandings.	The first half of this sentence needs to be addressed as described above eliminating the use of "Source Identification". The second half of the sentence should be "examiners should be aware of and articulate as part of their conclusion the limitations of the testimony they offer".	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
99	4.9.2.4	T	It is not enough for examiners to "be aware of and prepared to articulate the limitations of the testimony they offer." Although the law does not demand it, examiners should testify to these limitations when they give their opinion that a source hypothesis is true. It would be better to testify to the strength of the evidence without drawing a source conclusion, but that is a reform rather than an articulation or rational reconstruction of the current practice.	State that examiners, to provide scientifically suitable testimony, should note the limitations in their conclusions along with the conclusions themselves.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
56	4.9.2.4.2	T	"All Source Identifications should not be presented as equal in strength..." but no outline is provided explaining how to verbally differentiate one source identification from another when we are limited to three conclusions as outlined in 4.9.2.2 - alludes to a scale of conclusions	Delete statement. This is repetitive information as to what is already provided in the same section. There is no standardized scale of conclusions available for those agencies who do not use likelihood ratios in reports.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
67	4.9.2.4.2	E	I'm not sure what "All Source Identifications should not be presented as equal in strength" means. I testify to one identification and one case at a time. Is it stronger if I have two identifications in a case? Is it stronger if I have 16 points in this trial as opposed to only 12 points at the last trial? Will next week's case be stronger if I have 20 points? While I might make an identification on a clear 20 point latent more quickly than I would on a smudged 8 point ident, I would not be comfortable trying to defend one identification as being stronger than the other. I can't quantify the strength of my opinion -- this is a weak opinion, but in this other case I had a strong opinion. Without being able to do that, it is simply my opinion, "belief stronger than impression and less strong than positive knowledge."	Strike the last sentence from the explanation in this section, and instead make a comment about reporting and testifying to the strengths and weaknesses of the specific evidence at hand, not the opinion itself.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
208	4.9.2.4.2	T	Once an examiner has reached the conclusion of "identification" that examiner should by all rights be completely confident in that call. It matters not if in one case I have 10 features in agreement with no disagreement, but then in another case I have 15 in agreement with no disagreement. The second identification is not necessarily stronger than the first. In either case, the identification was an identification. If I identify one latent print on an item, or if I identify fifty latent prints on the same item, that does not mean that the second scenario is "stronger." In either case, that person touched that item, which is all an identification can really tell you anyway. If we follow our scientific method, and reach a conclusion to which we are confident in making, there is nothing that makes an identification in one case any stronger or better than an identification in another case.	Omit this concept completely, and fall back on the concept that the lower the quality of friction ridge detail, the higher the quantity of detail may be needed, and vice versa. Likewise, the lower the overall quality of the impression, the more quality control may be increased.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
217	4.9.2.4.2	T	Different levels of "strength" cannot be defined numerically for a latent print. A threshold for suitability based on quality and quantity of features is subjective and, as such, is dependent on the individual latent print examiner doing a comparison. If there is a sufficient amount of corresponding friction ridge skin detail in two prints, then the examiner can state that the prints were identified as having come from the same individual. A threshold not reached should be expressed as "Inconclusive," never identification or exclusion or possibly him or probably not him. Likewise, a threshold crossed should allow an examiner to report and testify to an opinion of "identified," not possibly him or probably him or "strong support" for being him.	Remove the concept of "strength" and implore a concept of threshold.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
245	4.9.2.4.2	E/T	The strength of support is not a term defined in this document. A form of this phrase is included in the definition of strength of evidence, but that is a term used for expressing the likelihood ratio. This terminology should not be used.	Change to "The examiner's opinion is dependent upon the quality and quantity of the data available, and the complexity of the comparison, which is variable." Also, as noted in previous comment, delete "Source Identification" from the sentence, so the first sentence becomes "The examiner should be transparent about the quality and quantity of the data that were used to reach their conclusion."	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
246	4.9.2.4.2	E	How is making sure all "source identifications" are not presented in equal strength accomplished?	This idea needs to further discussion and elaboration. An appendix offering examples of how the strength of an inclusion or association conclusion can vary would be most useful.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
68	4.9.2.4.3	E	If "repeatability by others is not an indication of accuracy," why do we bother with verification? While it is true that some percentage of erroneous identifications have been erroneously verified, it is also true that the verification process has detected other erroneous identifications, as well as erroneous conclusions other than identification. Preventing such errors from being reported does add a degree of accuracy to the overall process. "Clearly demonstrating" the supporting data for an identification implies presenting a chart, graph, or spreadsheet of some kind and allowing the investigator, judge, or jury to conclude for themselves what the conclusion should be. In some cases, the evidence is clear and easy to see and interpret, but in other situations, there may be no way to "clearly demonstrate" the supporting data for a specific fingerprint identification to a jury. Repeatability demonstrated through verification is specific, unambiguous, and easy to express. Presenting a verification should not be the witness' responsibility, but that of a calling attorney.	Clearly, no witness should bolster their own testimony by presenting an identification and then adding that the identification was verified. However, the verification process should be discussed earlier in testimony when explaining the bases behind fingerprint identification, the examination process, and applicable department policies and procedures. Then, later in testimony, after presenting the identification, it is entirely permissible for a calling attorney to ask simply whether all applicable policies and procedures were followed in the latent print examination for the case on trial. In keeping with Rule 702, the expert should be allowed discretion in determining the best way to present the specific evidence in a case, discuss its strengths and weaknesses, and minimize the possibility of confusion on a case by case basis.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
73	4.9.2.4.3	T	While verification does not eliminate all possibility of error, it demonstrates the reproducibility of the decision, which is a component of accuracy. Data from Black Box and other studies showed that not all errors are made by multiple examiners. If it doesn't increase accuracy, there is no reason for verification to be part of the ACE-V method.	Reword to state that verification should not be used to bolster a conclusion, indicate that it eliminates all chance of error, or that it's a substitute for knowing ground truth. "Reproducibility by others does not mean all chance for error has been eliminated" could be the opening line.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
74	4.9.2.4.3	T/E	Section header uses "repeatability" when the correct term is "reproducibility"	Change to "Reproducibility by others does not mean all chance for error has been eliminated". Change "repeated" to "reproduced" when it is under in the section under this header.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
128	4.9.2.4.3	T	The way this section is written conveys the idea that repeatability has no value or meaning at all. That it should hold no weight or bearing on a person's belief that the first examination reached a well-founded conclusion. If there is no value whatsoever in repeatability - then why do we require verifications? Obviously there is SOME value in a process and a conclusion being able to be repeated. First, repeatability is a key component to any sound scientific theory. Second, common sense states that the more frequently a theory is tested and the same conclusion is arrived at, the more weight that conclusion has. While it is true that it may never be known that the conclusion is the absolute truth - repeatability does give valid reason to believe one particular conclusion is the best and "most" accurate conclusion that can be made.	Change the language here. Remove the implication that repeatability has NO value, or that it gives no indication of the solidness/weight of the conclusion. Alternatively, acknowledge that repeatability does hold value, while stressing it is not an absolute guarantee that the conclusion is correct. If the purpose of this section was simply to convey that repeatability does not convey 100% accuracy, then verbiage needs to be added to clarify that repeatability does still have value.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
209	4.9.2.4.3	T	Verification is a very necessary quality control measure. To imply that it is not a method of ensuring accuracy is to imply that it is useless. However, without the verification process, we would not know that errors even exist.	Clarify that while verification does not imply "ground truth," it does ensure a sound measure of quality control.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
218	4.9.2.4.3	T	Repeatability by others is not an indication of accuracy, but it is a part of the scientific method. We should also acknowledge that errors have occurred and that trying to quantify our decisions does not make the errors end.	Add a comment stating that there will still be errors when we clearly demonstrate the support that the data provides for the conclusion.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
225	4.9.2.4.3	T	"Repeatability is not an indication of accuracy."	Yes it is. It is an indication that the Examiners have reached a correct conclusion. Of course it isn't proof of accuracy, but it is one of a series of quality control measures. If a lack of repeatability by a competently trained and qualified person is an indication of lack of accuracy, an unbiased independent agreement certainly indicates that the correct conclusion could have been reached.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
104	4.9.3	E&T	Another issue needing further discussion is the examiner's obligation to explain, if asked, the factual basis for the conclusion. The examiner must be prepared to offer more than an ipse dixit. The examiner should document the specific features that were considered when comparing the prints and assessing the degree of correspondence and be able to explain why the observed features justify the conclusion that was reached.	To this end, we suggest adding a new section (possibly at 4.9.3) that says: "Examiners should contemporaneously record the similarities and differences that they find between the impression and the alleged source. Their reasoning should be transparent, and should be made available to both sides in a legal case." The President's Council of Advisors on Science and Technology (PCAST) recommended that examiners include in their reports discussion of the error rates that have occurred in studies designed to assess the accuracy of conclusions that forensic scientists reach based, in part, on subjective interpretation of data (PCAST, 2016). The AAAS report on latent print examination concurred in this recommendation. Consequently, we urge ASB to consider including a discussion of error rate data in its recommendations for the articulation and explanation of the meaning and value of latent print evidence.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
184	4.9.3.1	T	These references are not support that items are unscientific, these are merely opinions of different people. This is inappropriate.	Remove these references. They should be replaced with scientific references.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
185	Annex A	T	The information in Annex A is not additional information, it is repetitive and unnecessary.	Remove annex A	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
186	Annex B	T	Many of these references are merely showing someone else has the same thoughts and published them (an appeal to authority which is frowned upon in science). Science shows support with research. Examples include: Maceo, Ashbaugh, Wertheim, Barnes, etc. This view has been supported by the courts. In STATE OF ALASKA, v. JYZYK J. SHARPE (Jan 4 2019 decision) the court stated, "the mere fact of publication in a peer-reviewed journal is not itself probative of a technique's validity."	Replace all references that appeal to authority and notoriety to references showing research that shows these concepts produce better results than alternative methods. Or stick to the foundational principles of permanence and uniqueness and leave methodology out of this document (to be in a document on methodology).	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.
100	Annex B [29]	T	The citation to the 2012 NIST Expert Working Group misidentifies the authors and editor. The institutional author is not NIST. It is an expert panel assembled by NIST whose views "do not necessarily reflect the official position or policies of ... the U.S. Department of Commerce." The named authors or editors (M. Taylor and S. Ballou) neither wrote nor edited the report. See p. x of the report (identifying the editor-in-chief).	Cite the report as Expert Working Group on Human Factors in Latent Print Analysis. Latent print examination and human factors: Improving the practice through a systems approach. D. Kaye ed. National Institute of Standards and Technology, Gaithersburg, MD. 2012.	Based on feedback received from commenters and consensus body members, this document was discontinued as a Best Practice Recommendation and reformulated as a Technical Report. Based on the substantial changes in scope and content, it will be reissued for public comment in its entirety.

Deadline of Submission of Comments: 26-Aug-24
Document Number: ASB TR 012
Document Title: Technical Report on the Articulation of the Reasoning and Foundational Principles Behind Friction Ridge Examinations

Comment #	Text Line # (s)	Document Section	New Section	Type of Comment E-Editorial T- Technical	Current Document Wording	Proposed Revision	Revision Justification	Final Resolution
1		Totality		T	The document currently uses the words "likelihood" and "probability" in multiple locations.	Suggest consideration of rewording both terms to something else in all instances of use.	Just hesitant as we currently have no likelihood or probability ratios. I wouldn't want someone to read this document, see recommendations, and then ask examiners on the stand for likelihood & probability numbers. For example, in section 10. It states the strength of the evidence depends on the probability of one proposition outweighing the other. This further infers that it depends on the probability of the set of similarities occurring in an impression from a different source. But we don't have a definition for that sort of probability, nor numbers for it yet. Perhaps a similar word that would not invoke a request for specific research & numbers would be better? I admittedly have not read some of the references for this section, so perhaps they address this and my concern is moot. Thanks for the time!	REJECT - The terms "likelihood" and "probability" do not require the expression or calculation of a specific number. Both terms can refer equally to formal statistical calculations as well as informal (non-mathematical) assessments. These values are currently assessed qualitatively and subjectively during friction ridge examination (unless you are using a probabilistic model) and an examiner should be able to articulate how these assessments are made if requested to do so.
2		1		T	This document provides reference information to aid in articulating the reasoning and foundational principles behind the examination of friction ridge evidence. It provides additional explanations and references in support of fundamental statements made within the friction ridge discipline. The statements in the document include basic premises of friction ridge examination, the execution of the examination process, and the communication of the results of examinations. This document does not address the specific friction ridge examination conclusions or wording of those conclusions which are the subject of a separate document.	This document has taken on some things you can't say but fails to address what can you say about performance metrics, and we are not aware of any place where SC has addressed what are appropriate performance metrics and what you can say about those despite the FSSB guidance documents providing guidance on these subjects. There is FSSB guidance on testimony and reporting, which includes performance metrics, and the document should include some way of articulating the accuracy and error rate of the method. There are models for doing that see: PCAST, AAAS, Swafford etc - but you need to do more than you do here.	While this document does reference some prohibited language, this document does not address what the appropriate performance metric(s) is for this discipline or what the available research reveals about those performance metrics. The scope neither lists what performance metrics should be or what performance metrics are known nor explicitly states the document does not address these. Odd to tell you what not to say, without telling you what you can say. If the intention of the doc is to not reach that far, why say what you can't do but not what you can.	ACCEPT - See addition of section on Articulation of Performance Studies
3		3.1		T	identification	do not use the term identification	Given what ASB says about a technical report, should not use categorical definitions	REJECT - Per the ASB Manual ... "A Technical Report provides scientific, technical, terminology, or operational information relevant to a standard, a field of activity, or a profession." The ASB Manual also states... "Technical reports do not set requirements or recommendations and are not suitable for conformity assessment. Content is expressed in the most appropriate manner for the subject." The current document meets these guidelines. The provided justification does not support the proposed revision. Furthermore, the current document specifically states with its Scope that ... "This document does not address the specific friction ridge examination conclusions or wording of those conclusions which are the subject of a separate document." As such, the request to revisit the use of the term identification is not within the scope of this document.
4		3.1		E	Source identification is defined as an accumulation of similarities "that supports a conclusion of source identification." By itself similarities do not support such a conclusion; they do so only in the context of the entire print. If because of other print characteristics mean an identification is excluded, the similarities present do not support a source identification conclusion.	Insert the word "can" or "may" before "supports." i.e., "that can/may support a conclusion of source identification"		REJECT - The definition referenced is for "agreement" and not "source identification". The definition is written in the affirmative requiring "the accumulation of similarities" and "overall conformity" "that supports a conclusion of source identification". There is no suggestion within this definition that agreement (as defined here) is associated with less than sufficient support for source identification. The definition is appropriately stated.
5		3.5		E	The last line beginning with "usually" is not a sentence.	Either put in parentheses or add a subject, maybe simply the term being defined or the word "This". This can also be fixed by replacing the period at the end of the prior sentence with a comma, or by placing the line in parentheses.		REJECT - Per sections 13.2.1-13.2.2 of the ASB Manual terms are "described in sentence-like structure" and definitions are "written as single phrases not as sentences". There is no requirement for either to fit the conventional requirements of sentence structure.
6		3.6		E	The last line in each beginning with "usually" is not a sentence.	Either put in parentheses or add a subject, maybe simply the term being defined or the word "This is...". This can also be fixed by replacing the period at the end of the prior sentence with a comma, or by placing the line in parentheses.		REJECT - Per sections 13.2.1-13.2.2 of the ASB Manual terms are "described in sentence-like structure" and definitions are "written as single phrases not as sentences". There is no requirement for either to fit the conventional requirements of sentence structure.
7		3.7		T	conclusion (synonym of source conclusion) Opinion stated by an examiner after interpretation of observed data. The opinion is the professional judgment that the observed data can offer support for one proposition over another. A conclusion is distinct from a "proposition."	should not be defined as the use of propositions/ explanation that is support for one over another	while we understand that in practice with FP examinations a proposition is one over another, that is not a statistically correct definition of propositions and not how they generally used in forensic disciplines. Propositions are mutually exclusive but not exhaustive	REJECT - It is wholly appropriate to provide a definition which is accurate for the usage within the context of this document/discipline. There is no need to provide alternate definitions that are not relevant to the content of the document or the discipline. The definition is appropriately stated.
8		3.8		T	disagreement A dissimilarity, or an accumulation of dissimilarities, that is deemed to be outside of expected variations in the appearance of impressions from the same source, resulting in overall nonconformity.	use a different word than non-conformity	use of the term non-conformity is confusing bc suggests lab error or method non-conformance or procedure based and not sure that is what they mean here	REJECT - Within the context of this definition there is no suggestion that nonconformity is being used to indicate the a formal quality assurance action. The definition is appropriately stated.
9		3.9		T	discriminability The degree to which information in an impression can be used to distinguish it from impressions made by different sources. The discriminability of an impression	Any use of these term rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	REJECT - The proposed revisions are not appropriate for a basic definition.
10		3.10		E	The last line in each beginning with "Not to be..." is not a sentence.	Either put in parentheses or add a subject, maybe simply the term being defined or the word "This is..."		REJECT - Per sections 13.2.1-13.2.2 of the ASB Manual terms are "described in sentence-like structure" and definitions are "written as single phrases not as sentences". There is no requirement for either to fit the conventional requirements of sentence structure.

Comment #	Text Line # (s)	Document Section	New Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	Final Resolution
				E-Editorial T- Technical				
11		3.11		E	Evaluation is defined as "The weighting of the aggregate strength of the evidence (observed similarities and dissimilarities when considering two competing propositions) between the observed data in the friction ridge impressions being compared...". As written it sounds as if the presence of more similarities than dissimilarities might mean that a source conclusion should be reached. But a friction ridge examiner is not engaged in a counting process. Rather the entire print is being evaluated as a totality. Special attention is given to similarities and dissimilarities, but they are not being weighed in some numerical fashion against each other. There may be far more similarities than dissimilarities but if there are only a few clear and meaningful dissimilarities which cannot be explained away as an artifact or deviant for some other reason, no source identification should be drawn.	Something like, "A comparison of two impressions paying special attention to similarities and dissimilarities to determine the likelihood that the two impressions come from the same source." would work, or something similar that makes it clear that merely counting the number of similarities and dissimilarities is not what is required here - some of those similarities and dissimilarities will have differing levels of significance or will carry different weight.		REJECT - The current definition clearly states that there is a "weighting of the aggregate strength of the evidence" and does not suggest that this weighting is accomplished by merely counting the number of similarities/dissimilarities. The proposed revision is stated with bias toward the same source proposition as opposed to being neutral to the two competing propositions. Furthermore a basic definition should not include language directing examiners on how to perform said action (i.e., "paying special attention"). The proposed revision does not improve on the current definition. The current definition is appropriately stated.
12		3.12		T	exemplar impression (synonym of exemplar or known and exemplar prints) exemplar or known (synonym of exemplar impression and exemplar prints) exemplar prints (synonym of exemplar impression and exemplar or known) The deliberately recorded images or impressions from the friction ridge skin of an individual.	either remove may rely on or specify what info cannot be relied upon and what can	is there any info they cannot rely on? The "may rely upon" clause is confusing or cause unnecessary confusion if any information seen would suffice	REJECT - The quoted "may rely upon" language is not present in the referenced definition. <i>[If the commenter intended to reference the definition in Section 3.12 which includes said language, see the resolution of comment 13]</i>
13		3.13		E	The words "examiner that a "examiner may rely on to reach" are problematic. While the kinds of factors that are listed may all figure in an evaluation, most, if not all cannot be relied upon in reacting a decision.	A better way to phrase this would be that an "examiner might appropriately consider in reaching..."		REJECT - The language "may rely upon" is appropriate. It does not suggest that any of the listed factors would be the sole bases for a conclusion, nor what weight would be assigned to the observation, but that their observation may contribute to the aggregate support for a conclusion. The use of "may" was intentional to indicate an Examiner's choice to include said observation in the support for the conclusion or not.
14		3.14		E	The first sentence is a bit confusing. "In theory" implies that the concept being defined may not, in fact, exist. Also, the definition goes on to talk about friction ridges existing during friction ridge formation. We think we understand what is meant by this - namely that as some friction ridges have formed the patterns those yet unformed ridges will take become constrained, but the language is nonetheless confusing.	If pattern force areas only exist in theory, then the sentence should begin something like "A region of friction ridge skin that according to some theories was forced to form..." but essentially our suggestion is that more thought should go into how best to communicate the point the SAC wishes to make.		REJECT - As the formation of the friction ridge skin cannot be directly observed, the inference that this contributes to minutiae density is in the realm of theory. The proposed revision does not improve upon the current definition.
15		3.15		E	Probability is defined as "An expression of chance that a particular event occurs." This isn't very helpful because it just raises the issue of how to define "chance." Moreover, "occurs" seems to be the wrong word. Probability is usually attached to the chances that something exists or, with respect to events, that the event will occur or has occurred rather than an event "occurs."	Maybe a better definition would be the "The likelihood, usually expressed numerically, that a proposition or hypothesis is true." One might also have to define likelihood, however, but it is a better term than "chance" in this context, particularly given its use in Bayesian statistics.		REJECT - The usage of probability within this document is not in reference to formal statistical calculations, but rather the subjective, professional judgement of the examiner. As such, the definition is appropriate for the context of this document.
16		3.15		T	probability An expression of the chance that a particular event occurs.	Any use of these terms rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR's are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	REJECT - The proposed revisions are not appropriate for a basic definition.
17		3.16		E	Propositions are defined as "Statements about the actual state of nature or an event which is unknown or unknowable." But "state of nature" is an odd term as it is unclear whether this refers to the weather or some other natural phenomenon. Also, when referring to "statements about events unknown or unknowable", it doesn't seem to follow that these must be "propositions". By that logic, "I don't know if God exists" could be a proposition.	As used here, something like "assertions of claimed truths" would be better. Also note that propositions are proclamations or assertions; they are not just "statements about".		REJECT - The substitution of "assertions" for "statements" and "claimed truths" for "state of nature" is a matter of wording preference and does not substantively alter the meaning of the definition. Furthermore the use of "assertions of claimed truths" may introduce language that overstates the nature of a proposition (i.e., a proposition is The proposed revisions do not substantively improve upon the definition as stated.
18		3.16		T	propositions Statements about the actual state of nature or an event, which is unknown or unknowable. Not to be confused with "conclusions," nor "source conclusions" (refer to those definitions for further clarification)	ask the stats resource group what the correct definition of propositions is	not clear if this is a correct definition	REJECT - The definitions included are for terms as used within the context of this document. The term proposition is not being used to refer to formal statistical calculations, and as such, a definition for propositions as used for statistical calculations would not be appropriate. The current definition is appropriate for the usage within this document.
19		3.18		T	rarity (of a feature type) The frequency or prevalence of a friction ridge feature, either in isolation or in conjunction with other information about its local context.	Any use of these terms rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR's are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	REJECT - The proposed revisions are not appropriate for a basic definition.
20		3.19		E	"Not to be confused with "agreement."" is not a complete sentence.	Either put in parentheses or add a subject, maybe simply the term being defined or the word "This is..."		REJECT - Per sections 13.2.1-13.2.2 of the ASB Manual terms are "described in sentence-like structure" and definitions are "written as single phrases not as sentences". There is no requirement for either to fit the conventional requirements of sentence structure.
21		3.20		E	Source is defined as "An area of friction ridge skin of an individual from which an impression originated." This cites a source for the definition so it appears that the authors of this document are not responsible for the grammatical issues, but they are there and the definition is unclear as a result.	A better definition would be "The portion of an individual's friction ridge skin that gave rise to the impression being examined." or "The portion of an individual's friction ridge skin associated with the impression." Technically, the words "friction ridge" are also not needed.		REJECT - The proposed revisions do not improve upon the provided definition. The definition is grammatically correct.
22		3.21		E	Strength of the evidence is defined as "the relative support the evidence lends one proposition over another. ". This definition is wrong, Strength of the evidence is not a relative concept. One would never say "The strength of the evidence is 50/50" or "is indeterminate."	A better definition would be something like, "The degree to which evidence supports a proposition that it is offered to prove. It may be expressed verbally or numerically as a probability."		REJECT - As it appears within this document (see Section 10.2.3) the strength of evidence is indeed an expression of the relative levels of support for one proposition over another.
23		3.21		T	strength of the evidence The relative support the evidence lends to one proposition over another. It may be described verbally or numerically.	"It may be described verbally or numerically." change to "It may be described verbally, numerically, or demonstratively through the use of marked images." (or similar)	support is often demonstrated using visual documentation (marking features on images); these images are discoverable in court and may be used to demonstrate/describe the strength of a conclusion past "verbally" or "numerically"	REJECT - The proposed revision is too granular for a basic definition. Furthermore, the provision of marked images could be proffered as a demonstration of "the evidence" and not "the strength" thereof.
24		5		E	5 Discriminating and Persistent Nature of Friction Ridge Skin	no change except to increase the font size: font size is inconsistent with "6", "7", "8" and so on	consistency with headers and ease of skimming document when used as a quick reference/resource	ACCEPT

Comment #	Text Line # (s)	Document Section	New Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	Final Resolution
				E-Editorial T- Technical				
25		7.2		T	"Examiner confidence in the existence and type of observed data increases with the clarity of the data observed in an impression." observed in an impression."	"Examiner confidence in the existence and type of observed data increases with the clarity of the data observed in an impression. Examiner confidence in the existence and type of observed data may also be impacted by training and experience."	I was thinking of how training and experience definitely do impact a person's ability to "see" data/features. Not just make decisions, but even actually see them. We know of instances where more experience/trained people see far more data than people with little or no experience/training. I don't think someone should claim that experience & training make them more "correct." But to have a document that says implies the ability to observe data is impacted ONLY by clarity also seems lacking. Was wondering if a comment about training & experience should be included, especially since references provided do include studies of novices vs. experts? Thanks for the consideration!	REJECT WITH MODIFICATION - While training and experience are fundamental components of building expertise, an examiner's confidence in what they see is not technically the same as their ability to see this information (though it is related). Within the context of this section, the specific inclusion of an "Examiner's confidence" was determined not to be needed and so the existing "Examiner's confidence..." was slightly reworded to simply state "Confidence...". Note: There is no wording in this section that states or implies that the ability to observe information is only based on clarity. The first two sentences of this section clearly support that expertise (e.g., training and experience) is needed.
26		7.2		T	Examiners have demonstrated an ability to observe data such as ridge events, creases, and scars in friction ridge impressions that surpasses that of untrained individuals. Examiners are capable of observing data even in highly distorted impressions. Examiner confidence in the existence and type of observed data increases with the clarity of the data observed in an impression.	cite specifically for this statement or else tone down to be commensurate with what the research actually shows	is this accurate or supported by research that examiners are capable of observing data even in highly distorted impressions or is that an overstatement?	REJECT - Across the totality of this document, sufficient citations are provided to support the statements. The commenter does not refute the statement in the justification but rather questions it without providing any support to the contrary.
27		9.1		E	"The larger the set of similarities observed between two impressions the greater the likelihood of those observations if the impressions originated from the same source versus if they originated from different sources."	"There is a greater likelihood two impressions originated from the same source than from a different source when a larger set of observed similarities exists between the two impressions."	The current sentence feels clunky and hard to understand. Especially the part of "...the greater the likelihood of those observations if the impressions..." So I'm just throwing out an alternate option for clarity :-)	REJECT - The current statement is worded purposefully to emphasize the observation first and the conclusion second to avoid statements that commit the prosecutor's fallacy of transposing the conditional.
28		9.1		T	The larger the set of similarities observed between two impressions the greater the likelihood of those observations if the impressions originated from the same source versus if they originated from different sources. Furthermore, the greater the clarity and/or rarity of those similarities, the greater the likelihood of those observations if the impressions originated from the same source the greater the likelihood of those observations if the impressions originated from the same source	Any use of these terms rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR's are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	ACCEPT - Added Section 9.2.5 as "Likelihoods, probabilities, and rarity may be empirically derived (e.g., from validated statistical models) and/or subjectively assigned by the examiner based on their professional judgment."
29		9.2.2		T	Not all observed data carry the same weight. Observed data with higher clarity generally indicate more accurate representations of the source friction ridge skin. Observed data that are rarer allow the examiner to better discriminate between two sources. Not all observed data carry the same weight. Observed data with higher clarity generally indicate more accurate representations of the source friction ridge skin. Observed data that are	Any use of these terms rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR's are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	ACCEPT - Added Section 9.2.5 as "Likelihoods, probabilities, and rarity may be empirically derived (e.g., from validated statistical models) and/or subjectively assigned by the examiner based on their professional judgment."
30		9.2.4		E	Here, and in general with respect to the discussion of the implications of numbers of similarities and dissimilarities, it should be clearer that not all dissimilarities are weighed equally. It might take only one clear dissimilarity to justify an exclusion if it cannot be explained away (e.g. a scar on the finger of a suspect that is not present in the impression left and would have had to have been left if the person's finger was the source.)	Perhaps something like "Conversely, the larger the set of dissimilarities or the more significant/salient the dissimilarities observed between two impressions the greater the likelihood of those observations if the impressions originated from different sources versus if they originated from the same source."		ACCEPT WITH MODIFICATION - Modified current wording to ... "Conversely, the stronger the dissimilarity or larger the set of dissimilarities observed between two impressions the greater the likelihood of those observations if the impressions originated from different sources versus if they originated from the same source."
31		10.2.3		T	To determine the strength of the evidence, the examiner weighs the probability of observing the similarities and dissimilarities in two impressions assuming they were made by the same source against the probability of observing the similarities and dissimilarities assuming they were made by different sources. The strength of the evidence is the degree to which the probability of one proposition outweighs the probability of the other proposition.	Any use of these terms rarity or probability must acknowledge the lack of known statistics or empirical basis. There also needs to be an acknowledgement that LR's are personal and not empirically based	rarity or probabilistic statements should not be used unless the empirical basis for such is acknowledged, or where there is none, then that needs to be explicitly stated bc both rarity and probability statements imply such.	REJECT WITH MODIFICATION - As appears in the definitions, the term probability is not being used to refer to a formal statistical calculation, nor does rarity appear in the cited section; However, see new Section 9.2.5 for greater clarity of these terms and their applicability across the document.
32		11	12	E	No comments, really, we just wanted to say that this section is great and goes to great lengths to incorporate important human factors considerations into this document	Nothing, just more like this from you and others! Hurrah!		ACCEPT - see addition of Bias in Limitations
33				Ballot Comment	I did notice something in section 11 that I find to be a bit contradictory. Section 11.2.1 a) Individualization, Made by, Originated from the same source, Exclusion of all others. Use of the term "individualization" or phrases such as "œoriginated from the same source" (outside of the presentation of propositions)....			REJECT - The statements made in Section 4.6 of STD013 are the presentation of propositions. As such, the current wording (with the parenthetical caveat) is considered appropriate and within the context of the document as a whole should not lead to additional confusion.
34		11.2	12.2	T	identification	do not use the term identification	Given what ASB says about a technical report, should not use categorical definitions	REJECT - Per the ASB Manual ... "A Technical Report provides scientific, technical, terminology, or operational information relevant to a standard, a field of activity, or a profession." The ASB Manual also states... "Technical reports do not set requirements or recommendations and are not suitable for conformity assessment. Content is expressed in the most appropriate manner for the subject." The current document meets these guidelines. The provided justification does not support the proposed revision. The current document (as well as the Conclusions document) have substantially changed to both the definition of Source Identification as well as the guidance on how to communicate this conclusion effectively removing said conclusion from a categorical statement.

Comment #	Text Line # (s)	Document Section	New Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	Final Resolution
				E-Editorial T- Technical				
35		11.2.1	12.2.1	T	(Nothing to reference, language not in current draft)	Add a lettered subsection that addresses how an examiner should not imply that a conclusion is a fact (or known fact, or scientific fact, etc.). But add additional language expressing how an examiner should make clear the conclusion is their opinion, and that expressing it as an opinion is okay to do (with the limitations already described in the doc).	The industry appears to be confused on what the ASB docs are and are not allowing regarding opinion-based testimony. For example, the conclusions doc states an examiner shall not "assert that two impressions were made by the same source or imply an individualization to the exclusion of all other sources." Half of the industry seems to think this means we cannot ever say we believe impressions originated from the same source (in any context at all). They consequently have become upset, making claims of "What are we here for if we can't say two things are from the same source?" The other half of the industry seems to believe the document means yes you can still say it, but with limitations (don't imply it's a fact, give context, make it clear it is an opinion). The point is - people are reading the docs in very different ways and are becoming confused as to what the docs are allowing us to say and not. I think clarification on the issue that expressing conclusions as opinions is okay would be helpful to people. Especially to those who are upset, believing the docs tell them they can never say it at all. I understand the definitions of conclusions in the terms section states that conclusions are opinions. And also section 12 covers the idea that it is inappropriate to give a conclusion as a known fact. I just don't think people will piece all of these things together on their own to get the full picture. And therefore something in this particular section would be helpful for overall understanding. Something that ensures them they can express it as an opinion, so long as the suggested limitations are also given. And that that is okay. That the docs aren't saying "No, under no circumstances can you ever say you think they are from the same source...never ever!" (I know this got wordy, thank you!)	ACCEPT - This document is intended to provide greater clarity to the Conclusion document and the articulation of conclusions. To further that clarification, following addition was made. "(including using such language under the caveat that it is an examiner's "opinion")".
36	2nd paragraph, 1st sentence	11.2.1 d)	12.2.1 d)	E	certainly	certainly	spelling	ACCEPT
37		11.2.1 d)	12.2.1 d)	E	In practice, the concept of <u>certainly</u> is often inappropriately conflated with confidence.	certainly' should be 'certainty'	spelling typo	ACCEPT
38		12	13	E	Again, we just wanted to say that this section is great and goes to great lengths to incorporate important human factors considerations into this document.	Please, sir/madam/esteemed colleague, may we have some more?		ACCEPT - see addition of Bias in Limitations
39		12.2.1	13.2.1	T	While performance studies have demonstrated that friction ridge examiners in the aggregate can reach accurate conclusions (under specific test conditions), friction ridge examination is fundamentally an exercise in personal (professional) judgment. Decisions are made based on human observations. Examiners also apply personally-derived thresholds to effect examination decisions. While these personal observations and thresholds are not arbitrarily derived or applied they can vary from examiner to examiner. Studies have demonstrated that individuals can develop expertise in friction ridge examination by acquisition of relevant knowledge, experience, and training. Furthermore, studies have shown that examiners often reach consensus and that variability amongst examiners was most strongly associated with high complexity impressions and with decisions at or near sufficiency thresholds. The subjective nature of friction ridge examination means that examiners will not always agree with each other, necessitating the application of strong and transparent quality verification or other means) It is therefore accurate. In both practice and performance studies, errors have occurred that have been reproduced by other examiners. The only way to be certain of accuracy is to know ground truth. In the absence of ground truth, the most appropriate way to support the accuracy of a conclusion is by clearly demonstrating the support the data provide for the conclusion.	Soften the claims about validation	The document attempts to cabin claims of validation but needs to be softened/tamped down even more to match what the empirical data shows and what it does not	REJECT - There is no discussion of validation within the cited section. If by validation you are referring to the statements regarding examiner accuracy and consensus, all statements made are supported by the cited research.
40		12.2.7	13.2.7	T	It is inappropriate to assert that because a conclusion has been reproduced by others (through verification or other means) it is therefore accurate. In both practice and performance studies, errors have occurred that have been reproduced by other examiners. The only way to be certain of accuracy is to know ground truth. In the absence of ground truth, the most appropriate way to support the accuracy of a conclusion is by clearly demonstrating the support the data provide for the conclusion.	include more on bias	section 12 on limitations in general needs to include more about bias, specifically wrt reproducibility and verification	ACCEPT WITH MODIFICATION - Added section on bias (in general). Limitations on reproducibility (with verification implied) already covered in cited section.

Deadline of Submission of Comments: 27-Jan-25
Document Number: ASB TR 012
Document Title: Technical Report on the Articulation of the Reasoning and Foundational Principles Behind Friction Ridge Examinations

Comment #	Text Line # (s)	Document Section	Type of Comment E-Editorial T-Technical	Current Document Wording	Proposed Revision	Revision Justification	For Working Group and Consensus Body use only, not to be completed by commenter.
							Final Resolution
1		11	E	Entire section	Delete	While this section is not an impediment to publication, it does not improve the document; it has the opposite effect. While the statements in it are not false, they are so vague that they will be of little use to customers and some them echo statements that have been cynically used to mislead and distract customers.	REJECT WITH MODIFICATION - Section 11.2.2 removed. Other sections slightly modified. Overall section was retained as the discussion of examiner performance studies now plays a foundational role in supporting the reliability of friction ridge examinations. Its inclusion in a document providing the reasoning and foundational principles behind friction ridge examination is justified
2		11.2.1	E	These studies have reported relatively low instances of false negative errors and even lower (albeit non-zero) instances of false positive errors by study participants.	Delete	These verbal characterization ("low" and "lower") are vague and subjective and don't add value to the document. What range of error rate would the authors of the document include in the category of "low"? What error rate is "low" enough and for what purpose?	REJECT WITH MODIFICATION - " (see references included in section 11.3a) for reported error rates)." was added after statement to clarify the generalization of "low" and "relatively low"
3		11.2.2	E	The error rates from performance studies do not represent the probability of error in any specific situation (i.e., the probability of error associated with a specific examiner, FSP, case, or examination) as all measured error rates are only directly applicable to the specific study and its participants.	Delete	While the statement is obviously true in a certain sense, if taken literally it would mean that no results from any accuracy study could ever be applied to any real-world application of anything. That is obviously not the case, so the statement is unhelpful to customers. The statement also has a history of being used in to dismiss accuracy studies and distract customers from them.	ACCEPT - Section deleted
4		11.2.3	Ballot Comment	Putting the word "skill" in quotation marks undermines the actual knowledge and expertise of the examiner. Perhaps replace with a stronger word like //expertise// without quotation marks here to account for the specialized technical knowledge that is a factor contributing to or mitigating errors in an examination.			ACCEPT WITH MODIFICATION - replaced "skill" with "error rate"
5		12.2.1 and 12.2.1 a)	E	Historically, when articulating the results of friction ridge examinations, examiners have used words and phrases that are now considered inappropriate or misleading (including their usage under the caveat that it is an examiner's "opinion"). A prohibition against the use of such problematic phrases is documented in ASB Standard 013, Standard for Friction Ridge Examination Conclusions (Draft available from asb@aafs.org). The documented prohibited language includes the following: a) Individualization, Made by, Originated from the same source, Exclusion of all others. Use of the term "individualization" or phrases such as "originated from the same source" (outside of the presentation of propositions), "made by", "matched to", and "exclusion of all others" imply the reduction of an open population (i.e., the world's population) to a single source. These terms and phrases de facto exclude all other possibilities. Unless case related contextual information is considered when making this determination, such as a closed-set population, this claim is not supportable by the current research and empirical testing.	remove sections 12.2.1 and 12.2.1 a)	12.2.1 and 12.2.1 a), contain several false statements to support the opinion of the authors of how they feel friction ridge identifications should be reported. The words that examiners have used and currently use are factually correct. Thousands of times everyday prints are "individualized, matched to, and are shown to originate from the same source". These statements are supported by the biological sciences and enjoy a track record of success in making correct and accurate identifications for over one hundred years. The ability to identify a friction ridge impression to its sole source is completely supported by science and has never been falsified. All scientific studies reinforce that all areas of friction ridge skin is unique. Uniqueness provides a foundation for a comparison and the ability to identify an impression to its sole source. The following statements and observations are factual, not opinion. No duplicate fingerprints or other areas of friction ridge skin have ever been found on two different persons. Identical twins do not have the same fingerprints. The establishment of a sole identity is done by all the identification bureaus around the world. The process is now supported by a multi-billion-dollar biometrics industry. The well-established ability to make same or sole source identifications is a necessary function that is paramount to society for many reasons. Friction Ridge identification (fingerprints) is currently being used by all governments around the world to establish the sole identity of a specific individual for the purposes of criminal prosecutions, to establish and track the criminal records of individuals (known as rap sheets), to verify a specific person's identity for security clearances, to establish a person's identity for the issuance of passports, and to make the positive identification of the deceased, just to name a few. The identification systems of every country in the world use fingerprint identification to establish a person's identity. There have not been any changes in the results of scientific research or in the acceptance of this form of evidence in the justice system that would justify this radical change in reporting comparison conclusions. The opposite is true. For just one example, in 2023, a team of scientific researchers from around the world published their research that has once again verified that all areas of friction ridge skin are unique. Glover et al., (2023) The Developmental Basis of Fingerprint Pattern Formation and Variation, Cell 2023,186, 1–17, Elsevier Inc. In addition to the extensive biological research that provides the scientific foundation that all areas of friction ridge skin are unique, there is also over one hundred years of empirical data that supports the demonstrated ability to correctly and accurately identify latent print impressions to their sole source. The identification of a latent print to its sole source has been demonstrated, accepted, and embraced by the courts of the world. There is extensive legal precedence because the ability has been demonstrated. "—there is tremendous variability among prints made by different fingers. This variability clearly provides a scientific basis for using fingerprints to distinguish individuals." AAAS, Forensic Science Assessments: A Quality and Gap Analysis- Latent Fingerprint Examination, P.18, September 2017. Even, the 2009 NAS report, Strengthening Forensic Science in the United States: A Path Forward, states that: "Because of the amount of detail available in friction ridges, it seems plausible that a careful comparison of two impressions can accurately discern whether or not they had a common source." Page 142. Nowhere in the 2009 NAS report does it suggest that we should abandon the use of sole source identifications. The opposite is true, it recommended the expanded use of fingerprints through the interoperability of Automated Fingerprint Identifications systems (AFIS) to solve more crimes. Recommendation number 12. From the NAS report, The Evaluation of Forensic DNA Evidence 1996 Committee on DNA Forensic Science: An Update, stated that DNA evidence will soon be reported as a unique identification as fingerprints are now. "We can confidently predict that, in the not-distant future, persons as closely related as brothers will be routinely distinguished, and DNA profiles will be as fully accepted as fingerprints now are. But that time has not yet arrived, and the winds of controversy have not been stilled. Hence this report", Preface of the report. The late eminent Professor of Zoology and Philosopher of Biology Ernst Mayr PhD of Harvard University states: "In the uniqueness of biological entities and phenomena lies one of the major differences between biology and the physical sciences. Physicists and chemists often have genuine difficulty in understanding the biologist's stress on the unique. The variation from individual to individual within the population is the reality of nature, whereas the mean value (the "type") is only a statistical abstraction. Biopopulations differ fundamentally from classes of inanimate objects not only in their propensity for variation but also in their internal cohesion and their spatio-temporal restriction. There is nothing in inanimate nature that corresponds to biopopulations, and this perhaps explains why philosophers whose background is in mathematics or physics seem to have such a difficult time understanding this concept" Mayr, Ernst, Toward a New Philosophy of Biology, p.15, (1988), Harvard University Press.	REJECT - The request to remove the cited sections are rejected. The statements within the cited sections are appropriate as they provide valuable information regarding the requirements listed within STD 013. The statements made within the Revision Justification are not persuasive based on the following observations: - Without ground truth, experts cannot provide "fact" (experts provide "opinion" and within Standard 013 examiners are prohibited from using statements that state or imply "fact") - Over a hundred years of execution of friction ridge examinations does not prove the accuracy of frictions ridge examination (we cannot know the ground truth in these matters and therefore cannot use them to test the accuracy of the conclusion) - The biology and unique nature of friction ridge skin does not confer "uniqueness" upon reproductions of that skin (Friction ridge examiners do not examine the friction ridge skin) - The ubiquitous application of friction ridge examination does not prove the accuracy of friction ridge examinations - Examiners have been "factually" incorrect in their conclusions (at least definitively so within ground truth examiner performance studies) - While no two persons have been found to have the same set of friction ridge skin arrangements, two (or more) different persons have been identified to the same friction ridge impression in both ground truth performance studies and in operational casework; Furthermore, individuals that were the source of a friction ridge impression have been routinely excluded as the source of that impression. This effectively "falsifies" the assertion that friction ridge examinations are infallible (i.e., can be presented as "fact") - Quoted references to the AAAS report and NAS report are misrepresented and/or taken out of context as both of these reports were highly critical of sole source attribution in friction ridge examination.

Comment #	Text Line # (s)	Document Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	For Working Group and Consensus Body use only, not to be completed by commenter.
			E-Editorial T-Technical				Final Resolution
6		13.2.9		"examiners are resistant to the effects of biasing information"	This statement is unfounded and should be removed.	There is ample evidence that examiners are susceptible to cognitive bias.	ACCEPT WITH MODIFICATION - Statement was removed. In place of the statement, the results of various studies (see Hall & Pena) were summarized. These studies saw no changes in expert conclusions from the inclusion of biasing information.
7		13.2.9		"when influenced, [examiners] generally default to more conservative conclusions."	At minimum, citations must be added to support this claim.	In light of the research literature, this statement is dubious at best. At minimum, it needs to be amply supported by specific citations to empirical studies.	ACCEPT - Statement removed. (While there is some support for this statement, the commentor is correct that it is currently too limited)
8		13.2.9		"The presence of biasing information alone does not necessarily indicate that an examiner or their conclusion is inaccurate or unreliable."	This statement is misleading and should be removed.	This statement misses the point, which is that bias undermines the independent probative value of the expert's judgment, regardless of whether it lowers or (only incidentally) improves accuracy.	ACCEPT - Statement removed as it was judged to be redundant given the inclusion of results of bias studies.
9		13.2.9		"Conversely, lower complexity/non-complex impressions/comparisons require less personal judgment and as a result tend to be more resistant to the effects of bias."	"Complex decisions (e.g., involving incomplete, degraded, or otherwise ambiguous impressions) are especially vulnerable to the effects of bias and thus especially warrant safeguards against bias."	As written, this claim implies that "easier" comparisons do not warrant protections against bias, which is contingent on examiners' ability to accurately diagnose such situations. The extent to and the reliability with which examiners are able to accurately diagnose such situations is currently unknown.	REJECT WITH MODIFICATION - Statement was removed in favor of summary statements from bias studies showing the most changes associated with "difficult" prints and little to no changes associated with "easy" prints. A preceding caveat statement "While bias could influence any examination..." was also added prior to summary statements. [See Dror & Busey citation; see Kellman study for demonstration that examiners can recognize complexity/difficulty]
10		13.2.9	E	However, studies have also shown that, in general, examiners are resistant to the effects of biasing information or, when influenced, generally default to more conservative conclusions.	Delete	This is not a consensus read of the literature and unnecessary.	ACCEPT WITH MODIFICATION - Statement was removed. In place of the statement, the results of various studies (see Hall & Pena) were summarized. These studies saw no changes in expert conclusions from the inclusion of biasing information.
11			Ballot Comment	Fantastic job in resolving all these comments within a completely re-worked TR012 to include articulation of ALL Friction Ridge Examinations rather than just "Source Identification" as originally written. Kudos to all for your persistence and commitment to the end goal. This is a tremendous resource to active fingerprint practitioners whom are called upon to testify in their role.			NOTED - No revision requested

Deadline of Submission of Comments:

Document Number:

Document Title:

ASB TR 012

Technical Report on the Articulation of the Reasoning and Foundational Principles Behind Friction Ridge Examinations

Comment #	Text Line # (s)	Document Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	For Working Group and Consensus Body use only, not to be completed by commenter.
			E-Editorial T-Technical				Final Resolution
1			T	analysis (phase of the examination process) The interpretation of observed data in a friction ridge impression in order to categorize its suitability/utility	The interpretation of observed data in a friction ridge impression in order to 1) categorize its suitability/utility and 2) memorialize the interpretation of the observed data	Analysis is to determine suitability for comparison/identification and is also to memorialize/document data visuaized prior to the comparison process	REJECT - While BPR 165 recommends the memorialization of the data observed prior to the comparison process, this addition is not pre-requisite for a basic definition of Analysis
2				Ballot comment	The definitions do not coincide with TR016 and need to be changed since the CB has agreed on many of the changes to these definitions. If they are not changed then the document is knowingly outdated before it is even published		ACCEPT
3				Ballot comment	Definitions should be updated to follow TR16		ACCEPT
4				Ballot comment	The notion that disagreement can be based on one dissimilarity has been falsified. The definition of disagreement should not support following falsified ideas. Change to remove that one dissimilarity can result in disagreement.		ACCEPT
5				Ballot comment	I would suggest to consider to fix the comments already posted by .ichelle and Mandi, which are, in my opinion, very relevant to this document.		NOTED - no additional resolution requested
6		11.2	E	Deleted section 11.2.2	11.2.1.1 The error rates reported in published studies were collected under controlled conditions. It is not appropriate to construe them as the sole probability of error applicable to any particular comparison conclusion reported by an FSP.	There is value in articulating the limitations of published error rates in this document, especially when the reader relying on it is not a practitioner or may not be familiar with the statistical limitations. I agree that the original wording went a bit too far into the weeds and was unclear, but the distinction is definitely worthy of articulation. I suggested nesting it below 11.2.1, but this could also be stated as a Note.	ACCEPT - "All reported error rates from examiner performance studies are only directly applicable to the specific study and its participants." was re-added as Note to Section 11.2.1
7		11.2.1	E	11.2.1 A number of friction ridge examiner performance studies have been conducted in recent years. These studies varied in design, participation, subject matter, and limitations. These studies have reported relatively low instances of false negative errors and even lower (albeit non-zero) instances of false positive errors by study participants (see references in section 11.3a) for reported error rates).	remove parenthesis after "11.3a"		ACCEPT
8		11.2.2	T	the error rate of the examiner	the expertise of the examiner	Section 7.2 thoroughly supports the assertion of examiner "expertise" as a factor affecting the chance of error. The published literature even supports varying degrees of expertise beyond the basic novice/expert performance comparison. The use of examiner "error rate" does not make sense here. This is not something that examiners routinely track. Even if an examiner tracked his/her error rate, there would be significant questions of reliability with that measurement and whether or not it was supported by ground truth samples.	ACCEPT - "the error rate of the examiner," deleted from section. While published studies of examiner performance have shown statistically non-"normal" distributions of errors across the population of participants as well as "outlier" participants whose error rates substantially differ from other participants, the commentor is correct that there is currently no standard nor reliable way to measure an individual examiner's error rate. As such, the "error rate of the examiner" can be implied within the "including, but not necessarily limited to" language included within this section.
9		11.3		Ballot comment	11.3a Should reflect current research (Black Box 22 published in 2025)		ACCEPT

Comment #	Text Line # (s)	Document Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	For Working Group and Consensus Body use only, not to be completed by commenter.
			E-Editorial T-Technical				Final Resolution
10		13.2.8		Ballot comment	13.2.8 discusses one item that is not task relevant to an examination. Items that are task relevant should be added since this is very important to the foundational principles behind examinations (e.g., the latent print and the known print are the only items that are task relevant to an examination; all other information is biasing).		REJECT - It is noted that the topic of task relevance in friction ridge examination is currently the subject of an active work product by the friction ridge consensus body. As no consensus opinion on this topic has been established at this time, the inclusion of additional content with regard to this topic is considered premature. Recommend reintroduction of this topic when the document is next up for review. [Note: the content of section 13.2.8 was not redlined in the most recent edit and therefore was not open for additional comment]