

Publi Comments Deadline: February 21, 2022
ASB Technical Report 071, Forensic Document Examination Terms and Definitions

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
136	Comment	n/a	There are many definition used within the profession that are not included in this Terms and Definitions document. This document is incomplete.	Send the document back to the WG for a search of the literature to include the many missing terms commonly used in the FDE profession.	Reject: Commenter does not offer any additional definitions.
105	Many	n/a	Presumably "NIST HF" refers to a report of a committee assembled by NIST, but the report is not in the bibliography or list of references.	Provide the full citations for the sources of definitions somewhere in the standard.	Accept: NIST HF, and any others have been placed back in Bibliography
8	My General Recommendation	n/a	I would like to review the wording of items that will be updated prior to publication.		Reject: No suggestion.
118	Scope	Scope	Add the word "many" since this document does not cover all of the common terms that may be encountered within the profession.	Add the word "many" since this document does not cover all of the terms that may be encountered within the profession.	Accept with modification. Add a sentence such as "this technical report may not cover every definition conceivably used by FDEs"
38	1	1	The purpose of the document is unclear. Is it solely descriptive (to explain how examiners use terms now), or is it at least partly normative (to provide the definitions that should be used)? The scope section should justify why this document does not provide the terms that could be used to present results in a likelihood-based framework instead of the traditional categorical opinions.	State the intended purpose and value of the standard and explain why the terminology for a likelihood-based evaluation is not included. If the standard is not intended to approve of using all the terms and definitions it includes, that should be stated.	Reject. Intended purpose is stated in the title. The purpose is not to re-define terms that are already adequately defined in other sources.
39	1	1	The scope section states that "some terms and definitions in this Technical Report might vary from the usage of other forensic disciplines." There is no explanation as to the reason to have different definitions. Especially in light of recommendation 2 from the 2009 NAS Report—calling for standardized terminology across forensic disciplines—as well as OSAC's objective to harmonize standards, there should be more standardized definitions.	If another definition is more common in forensic science, that one (or one that is even better) should be substituted.	Reject: You cannot "harmonize" definitions used in different disciplines if they have two entirely different meanings.
19	3.1.2	3.1.2	Forensic Document Examiners historically don't describe their examination process as ACE or ACE-V, and as such I believe that adding a definition here would be stepping on the toes of other Consensus Bodies in fields that do describe their work as following the ACE Process	Remove Definition of ACE in 3.1.2, and break out individual components as their own definitions instead if needed	Reject: Many FDEs do utilize this verbiage.
40	3.1.2	3.1.2	Though the document addresses LSU later on, it might be best to address LSU and ACE together as a refinement of ACE along with V (verification and blind verification) as they are all refinements and better practices than ACE, and to include references in the bibliography addressing this practice even if, to date, most or all reference other pattern matching disciplines. See, for example, Expert Working Group on Human Factors in Latent Print Analysis, Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach. U.S. Department of Commerce, National Institute of Standards and Technology. 2012.	Address LSU and ACE together as a refinement of ACE along with V (verification and blind verification) and include references in the bibliography addressing this practice. See, for example, Expert Working Group on Human Factors in Latent Print Analysis, Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach. U.S. Department of Commerce, National Institute of Standards and Technology. 2012.	Reject: The current rendition of this document is "alphabetical order". LSU and ACE are not synonymous.
41	3.1.2	3.1.3	The note is missing a period at the end of the sentence	Add a period to the end of the note.	Accept
42	3.1.2.1	3.1.3.1	The subsection states that "The "unknown" item must be classified according to its properties or characteristics. These properties can be directly observable, measurable, or implied, but they are the parts which make up the whole." However, the latent properties would be inferred rather than implied.	Replace "implied" with "inferred."	Accept
43	3.1.2.1	3.1.3.1	This subsection states that "These properties can be directly observable, measurable, or implied, but they are the parts which make up the whole." It is unclear what "whole" refers to and what the phrase about it accomplishes. The properties of a document do not make up the document.	Shorten the sentence to "These properties can be directly observable, measurable, or inferred."	Accept
44	3.1.2.3	3.1.3.3	"Evaluation" is defined as "It is not sufficient that the comparison disclose similarities or dissimilarities in any of the characteristic properties of knowns and unknowns. Each property will have a certain value for identification purposes, determined chiefly by its relative frequency of occurrence. The weight or significance of each must be considered. (based on Huber, 1959)." This is not an explicit definition of "evaluation."	Restate as "The third stage, in which an opinion about the identity of the writer is formed in light of the similarities or dissimilarities in the characteristic properties of knowns and unknowns. Each property will have a certain value for identification purposes, determined chiefly by its relative frequency of occurrence."	Reject with modification. Definition fully rewritten as: "The process of assessing similarities and dissimilarities in characteristics for purposes of association or dissociation, as determined by the likelihood of occurrence, weight, or significance of each."

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45	3.1.13	3.1.14	In §§ 3.1.13 & 3.1.14, the definition of apprenticeship should most closely mirror the definition of apprentice (include requirements of in-person, direct supervision by a principal trainer). Additionally, the note under apprenticeship references the full-time requirement – if this is a requirement – should be incorporated into 3.1.13.	Clarify and coordinate the definitions of 3.1.13, 3.1.14, and the note underneath.	Accept with modification. Full time is ideal, but not required. "Individual" replaced with "student" in 3.1.14. NOTE has been removed.
119	3.1.14	3.1.15	Apprenticeship: I have no problem with this definition unless my proposed definitions of mentorship and tutelage are rejected and not included in this document. If these two terms are rejected then the "Note" should be deleted because it then becomes discriminatory against those who trained based on ASTM E2388 (2005) and the SWGDOC standard referenced in ASB published.	If as stated in my comment, the definitions of "mentorship" and "Tutelage" as provided in my public comments are not included in the documents, then delete the NOTE so it is not discriminatory against qualified examiners who did not train full-time, almost daily in the laboratory of their trainer..	Reject with modification: This document is not meant to be retroactive. Mentorship and Tutelage are not used in any ASB documents. NOTE has been removed.
1	3.1.14 (apprenticeship)	3.1.15	Insert the wording in red for clarification, consistency and to reduce vagueness. The term "under" is inappropriate; therefore, change to "guided." The NOTE was too restrictive. By changing it as indicated, the flexibility is an option depending on the staffing, facility location and other concerns.	"apprenticeship" An arrangement in which an individual is learning knowledge, developing skills, and abilities through practical experience as guided by a skilled worker(s) with proven mastery in the same area of knowledge and who has the time and availability to teach and guide NOTE The apprentice may or may not be a full-time trainee under the auspices of a principal trainer, and if full-time, the trainee may work with the skilled worker(s) almost daily in their laboratory or office.	Reject with modification: The balloted definition is consistent with the draft ASB QD Training document. NOTE has been removed.
107	3.1.31 "bias"	3.1.32	This definition describes only a portion of what the term "bias" means in the context of sciences and technical measurements. A broader definition would (1) better align the use of the term in forensic document examination with its meaning across sciences including other forensic disciplines; (2) clarify that cognitive biases are one category of bias that can arise in any type of scientific or technical analysis; (3) emphasize the relationship between cognitive biases in methods that rely on subjective expert judgment and other measurement biases associated with analytical methods that rely more on instrument measurements and analysis.	<i>Suggested definition for bias: A general term for any tendency of a person or instrument to deviate systematically from an actual value in making a measurement or rendering a judgment.</i>	Accept
46	3.1.31	3.1.32	"Bias" is defined as "A tendency to give disproportionate weight for or against an idea or thing." Unbiased individual can give undue weight to something in drawing an inference, and process that leads to the undue weighting need not systematically favor one sort of outcome over another.	Use the OSAC preferred definition: "A systematic tendency for estimates or measurements to be above or below their true values."	Reject: The commenter is confusing bias with error. Giving 'undue' weight is neither biased nor unbiased, but wrong.
109	3.1.33 "confirmation bias"	3.1.32		A cognitive bias that causes an individual to search for, collect, perceive and interpret information in a manner that supports the individual's preconceptions, expectations, or desires.	Reject: Both the balloted and suggested definitions convey the same meaning.
48	3.1.46 Now 3.1.47	3.1.48	"Case file" is defined as "All case notes, correspondence provided by interested parties, images of submitted documents, billing and time sheets (where applicable), and any task-irrelevant information received. This file may be wholly or partially in an electronic format." All information received should be documented as any information can be biasing.	Add: "All information received should be documented."	Reject: All relevant information in a FDE case file is listed in the balloted definition.
111	3.1.46 "case file" Now 3.1.47	3.1.48	As written, the wording implies that "case notes" and "correspondence" are always relevant.	All documents or other information, which may include task-relevant and/or task-irrelevant information, that is received or generated by the examiner of record in the course of a particular case.	Reject: The existence of "task-irrelevant" suggests that we are acknowledging there is both task relevant and irrelevant information.
32	3.1.49 Now 3.1.50	3.1.51	Comma needed between words "letter" and "numeral"	insert necessary comma	Accept
49	3.1.53 Now 3.1.54	3.1.55	A class characteristic is defined as "A feature determined prior to manufacture that is intended to be present in a particular form in every member of a group and can be used to define that group." Because handwriting is not manufactured, there can be no class characteristics of handwriting according to this definition. Is that intended?	Give a different definition if handwriting has any class characteristics.	Reject with modification. No recommended text. List added for clarification.

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50	3.1.53 Now 3.1.54	3.1.55	The definition of class characteristic is limited to "intended" characteristics. The post office sometimes prints batches of stamps that have an unintended mark on them. In situations like these, why are the unintended marks on documents not class characteristics? Section 3.1.57 speaks of "a class of handwriting," which seems to depart from this definition.	Unfortunately, we cannot give a suitable definition of "class characteristic." The terminology of "class" and "individual" characteristics is not helpful. The latter give rise to classes of size 1.	Reject with modification. Class characteristic and class of handwriting are disparate subjects. No suggested text. List added for clarification.
51	3.1.56 Now 3.1.57	3.1.58	"characteristic, (individual, distinguishing) (non-handwriting)" is defined as "A deviation from a class characteristic that would be present only by chance in another member of the class." The phrase "deviation from a class characteristic" is obscure. (1) How does one "deviate" from a characteristic? (2) a single characteristic need not exist in a class of size 1 to be useful in "distinguishing" among items, both within and across classes. (3) That a characteristic arises "by chance" does not limit its existence to exactly one item.	Unless the statement of scope explains that the definitions may not be desirable for use in the field, there should be a specific statement of the last two deficiencies of the definition.	Reject: 1. The deviation could be a manufacturers defect. 2. That would be an individual characteristic. 3. Nothing in the definition says the characteristic would only be on one item. No suggested text is offered.
52	3.1.57 Now 3.1.58	3.1.59	The word "characteristic, (individual, distinguishing) (handwriting)" is defined as "A feature found in handwriting that is not attributable to a class of writing and it is not taught. Only in combination would this characteristic(s) distinguish class from non-class." The wording is somewhat awkward. Does "attributable to a class of writing" mean that it defines a class of items? Does "distinguish class from non-class" mean distinguish members of a class of items from all other items? If so, the characteristic is of no value in making distinctions among members of the class that it defines.	Provide separate and workable definitions for "individual characteristic" and "distinguishing characteristic." (Or better, avoid the class-individual characteristic dichotomy as a way to describe characteristics. Some characteristics are more discriminating than others, and the examiner can report on the discriminating power on a more finely grained scale than "individual" and "class.").	Reject: Commenter does not appear to understand class and individual characteristics. "Individual" and distinguishing" are two synonymous terms for the same thing.
53	3.1.57 Now 3.1.58	3.1.59	"individual" characteristic	Other LTG members are concerned that there is no valid definition of an "individual" characteristic because that assumes a validated method of determining that a characteristic is on only one item, to the exclusion of all others, and questions whether the state of the discipline yet supports those types of claims.	Reject: No resolution propped.
2	3.1.57 (characteristic) Now 3.1.58	3.1.59	Delete the word "only" for accuracy. There are times when a feature is so completely unique that it does not need to be in combination with other features. For example, using my digital microscope while examining a full page of printed handwriting, I observed an individual characteristic of an exit stroke on one letter (the printed "u"). This specific observation was only on the printed "u." The use of the characteristic needs to be combined with other significantly useful characteristics as a basis of forming an authorship opinion.	"characteristic", (individual, distinguishing) (handwriting) A feature found in handwriting that is not attributable to a class of writing and it is not taught. When it meets the criteria for forensic usefulness, and in combination with other observable, habitual and measurable characteristics would this characteristic(s) distinguish class from non-class. to be updated prior to publishing Please provide your updated wording for my review.	Reject: The suggested text still conveys that it is only when a combination of these characteristics exists, that it is distinguishing class from non-class. The commenter also does not provide the criteria for "forensic usefulness".
20	3.1.64	3.1.66	Is it necessary to define circularity? It's extremely broad and doesn't seem to be a term most FDEs would ever use, especially in the context of defining it as a ratio with a numerical value	Consider removing circularity	Reject. It's already a defined term - ASTM F1857, and it could be used in some forensic document casework.
54	3.1.65	3.1.55	The isolated word "class" is defined as a "Characteristic(s) shared by a group (e.g., a copybook style of writing, a specific type style, print process)." But "class" is not a characteristic. It is a set or a collection of items. As definition 3.1.53 states, it is the characteristic that determines the class. The class does not determine the class-defining characteristic.	Define class as a set and use characteristics to define class membership.	Accept with modification. Combined definitions in 3.1.53 and 3.1.65. Deleted 3.1.65 class.
55	3.1.66	3.1.67	A "class defect" or "common defect" is defined as "A deviation from a class characteristic that is present in a similar, but not necessarily exact, manner in a significant number, even most, but not all, of the members of a class or subclass." The phrase "deviation from a characteristic" is awkward, and it seems odd to refer to all minor variations of a characteristic as "defective."	Is this term necessary? Can one simply refer to defects as defects and variations as variations? Alternatively, is "subclass characteristic" (rather than a 'defect') what is being described here? It is an unintentional (or non class) characteristic that is present in an unknown number of items produced by the same tool.	Reject. Necessary term. No suggested text.
56	3.1.69	3.1.70	"Of paper" at the beginning of the sentence is unnecessary..	Remove "of paper" from the beginning of the sentence.	Reject. As published by ASTM D1968.
57	3.1.72	3.1.73	"Collate" is defined as "2. Arrangement of paper in proper sequence, such as photocopiers." But the word is a verb, not a noun, and some words before "photocopier" appear to be missing.	Consider this definition (from the Cambridge English dictionary) "2. collect and arrange the sheets of a report, book, etc. In the correct order:"	Reject with modification. The second definition was revised for clarification to read: Arrange paper in the proper sequence, such as by photocopiers.
21	3.1.75	3.1.76	Generally I think most people refer to this as "common authorship" rather than writership	Replace writership with authorship	Reject with modification. Added a note to differentiate "common authorship".

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58	3.1.75	3.1.76	“Common writership” is defined as “A comparison of handwriting where the FDE is asked to give an opinion on whether a group of questioned documents have been produced by the same writer (see 3.1.224 intra-comparison). (NIST HF)” Is not common writership the state of having been written by the same individual rather than the process of comparing them to make this classification?	If common writership is the state of affairs of having been written by the same individual, then the definition should so be worded to say that.	Accept with modification. Definition was revised to read "A document or group of documents that have been written by the same individual"
59	3.1.76	3.1.77	“Comparable (general)” is defined as “Pertaining to items that contain the same type(s) of characteristic or features, individually or in combination.” The word “individually” is not meant to refer to the presence of a unique feature and could be replaced by “singularly.”	Replace “individually or in combination” with “singularly or in combination.”	Accept
60	3.1.78	3.1.79	“Competency” is defined as “Possessing and demonstrating the requisite knowledge, skills, and abilities to successfully perform a specific forensic document examination task, as per ANSI national standards.” Why is not competency simply the ability to perform a task properly? One can demonstrate such competency, but the demonstration is not part of the competency. Also, the reference to ANSI standards seems parochial.	Consider this definition: “having the technical skills and knowledge necessary to perform forensic analysis successfully.”	Reject: Competency requires demonstration of the ability to perform the task(s) correctly.
3	3.1.78 (competency)	3.1.79	Insert the wording in red for clarification and to reduce vagueness.	"competency" Possessing and demonstrating the requisite knowledge, skills, and abilities to successfully perform a specific forensic document examination task, as per the task specific ANSI national standard .	Reject with modification: The suggested language is implied as balloted. For clarification "national" was removed.
61	3.1.80	3.1.81	“Conclusion” is defined as “A judgement or decision reached by reasoning based on the examination and evaluation of all observations, findings, and available task relevant information.” This is the OSAC definition of “opinion.”	Replace “conclusion” with “opinion” and do the same wherever conclusion is used.	Reject: Conclusion is what is stated in the report. The opinion is what is given in court.
112	3.1.81, 3.1.82, 3.1.221, and 3.1.224	3.1.82, 3.1.83, 3.1.224 and 3.1.227	The use of the word “whether” could imply a binary/categorical decision, which is discouraged.	Replace “whether” with “the likelihood that” or a similar non-categorical phrase.	Reject: Whether is an appropriate term.
22	3.1.82	3.1.83	This definition in comparison to the previous few conclusion definitions uses a proposition framework, while in theory they all could be worded that way.	Recommend removing proposition language for consistency	Reject: The currently accepted conclusion statement includes the use of two opposing propositions, and is appropriate as balloted.
62	3.1.85	3.1.86	“Contemporaneous writing” is defined as “A document or a sample of writing that was prepared around or about the same timeframe as the document in question. The timeframe may be determined by the task at hand.” The italicized sentence is not part of the definition and is a statement or claim that should include a reference. Several definitions in this document define a term and then comment on it without reference. These portions should either be deleted or a reference should be provided (as appears to have been done for 3.1.112 distorted handwriting).	Delete the highlighted sentence or provide a reference.	Reject: Don't know what commenter is referring to? There are no highlighted or italicized areas on 3.1.85. However, the task group sees no reason to delete any of the balloted text.
63	3.1.111	3.1.112	“Difference” is defined as “Consistent, repeated dissimilarity in a structural or other characteristic or feature, that cannot be reasonably explained as variation or deviation from natural variation of a single source or class. May be referred to as a significant or fundamental difference.” When ordinary English terms are given very different meanings, it imposes a cognitive burden on the recipients of the expert evidence.	Remove this definition and allow “difference” to have its plain meaning. Also, to the extent that this concept is otherwise defined in a subsequent revision, please address “how often does it need to be repeated?” “what is reasonable?” And if whatever term is used has an adjective attached to it suggesting a weight or attribute, that too must be defined (e.g. “significant” or “fundamental”).	Reject with modification: The ASB FDE consensus body has voted on and discussed the first sentence of this definition and has agreed that it is appropriate as written. The last sentence was deleted for clarification. Additionally, the WG/CB pulled this definition from the NIST HF report: https://doi.org/10.6028/NIST.IR.8282
4	3.1.111 (difference)	3.1.112	A difference may be an aberrant and one-time observed feature; therefore, it may be not consistent and repeated.	“difference” May be a one-time observed feature, or a (delete “consistent” as redundant) repeated dissimilarity in comparison to a structural or other characteristic or feature, that cannot be reasonably explained as variation or deviation from natural variation of a single source or class. May be referred to as a significant or fundamental difference.	Reject: What makes this a “difference” is that it's not a one off “chance” occurrence.

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23	3.1.116	New Terms 3.1.116, 3.1.117, and 3.1.140	Recommend including definition for Digitally Captured Signature	Recommend including definition for Digitally Captured Signature	Accept. Added terms : "digitally captured signature", "electronic signature", and "digital signature"
24	3.1.116	3.1.118	The definition for Direct Contact seems overly specific. It specifically focuses on two sheets of paper in direct contact, where as the phrase itself can refer to any two items coming into contact (writing instrument and surface for example)	Recommend rewording definition of Direct Contact	Reject: No suggested text.
33	3.1.117	3.1.119	Full reference citation of "ASTM F1623"	insert ASTM before F1623	Accept
64	3.1.120	3.1.122	"Disguised writing" is defined as "Deliberately altered in an attempt to hide normal writing habits." Is there any authority that the discipline can discern intent to "hide"? Determinations of intent are the province of the jury and examiners should not use terms that suggest their expertise has allowed them to discern or opine on intent.	Include that examiners should not use this term in the course of reporting an opinion, finding, decision or judgment about their observations as intent cannot be determined through handwriting analysis but instead to refer to distorted writing.	Accept with modification: This is a definition for when the term is used, not a recommendation to use the term when rendering a conclusion. Added: This is a type of distorted writing and determining the intent between distorted or disguised writing remains with the trier of fact.
65	3.1.121	3.1.123	"Dissimilarity" is defined as "A feature or characteristic observed in one item or group of items that is not observed in the same form in a comparable item or group of items." But the differences (dissimilarities) between items may or may not be observed by a particular examiner in a particular examination. In other words, similarities and dissimilarities reside in the items, not in particular observations of them.	Define "dissimilarity" as "a variation in the features or characteristics that items have."	Reject with modification: The suggested definition is vague and incorrect. "Observed" removed from both places in the definition for clarification and readability.
66	3.1.122	3.1.125	"Distorted writing" is defined as "Does not appear to be, but may be natural. This appearance can be due to either voluntary factors (for example, disguise, simulation) or involuntary factors (for example, physical condition of the writer, writing conditions). (NIST HF, ASTM 2290-03; SWGDOC E01)" The first sentence is unclear.	Consider changing to "Writing that does not appear to be natural." (Or to capture the desire to be clear that natural v. unnatural cannot be determined, change to "writing that could be, but does not appear to be, natural").	Accept. Also removed the ASTM reference.
120	3.1.123	3.1.126	Distributed Learning: Replace the last sentence since an "in-person training program" is only one description of an appropriate training program per literature by NIST, Human Factors Working Group, ASQDE, BFDE, and others.	Replace the last sentence to read: This does not replace a fundamental apprenticeship, mentorship or tutelage training program, but can be used to complement such training.	Reject with modification: Terms "robust" and "program" removed. An in-person training program may be called numerous things, but they all require in-person instruction.
34	3.1.124	3.1.127	insert comma between surnames "Kelly" and "Lindblom"	insert comma to delineate two authors	Accept
123	3.1.224	3.1.227	Intra-Comparison: The purpose of intra-comparison is also to study the writer's range of variation. Add, "and, if prepared by a single source then to determine the writer's range of variation."	Add at the end of the sentence the following, "and, if prepared by a single source then to determine the writer's range of variation."	Reject: The purpose of intra-comparison is to determine whether there is one or multiple writers. Range of variation is a separate determination.
25	3.1.137	3.1.140	Is a graphic necessarily an electronic document? It's a file for sure, and it may be a part of a document, but in and of itself I'm not sure if it is a document	Consider if graphic makes sense in this context	Accept with modification. No recommended text. Graphics modified to "image files". Additionally "or other documents" added for clarification and to expand the definition
15	3.1.140	3.1.144	Edit to definition	Addition of 'Electrostatic Detection Apparatus' and acronym ESDA	Reject: Have to avoid proprietary language.
67	3.1.141	3.1.145	The references to ball/daisy wheel/thimble elements are not referenced in the same way as the rest of the document (see 3.1.23 ball element; 3.1.103 daisy wheel element; 3.1.395 thimble element).	Add cross-references consistent with the rest of the document.	Accept with modification: ASB Staff to add cross references. (SWGDOC E04-13) added as reference to each definition.
18	3.1.154	3.1.158	Question to definition: Eyelet...not an essential part of a handwritten character. Why is this not essential? As defined by Huber and Headrick's Handwritnig Identification Facts and Fundamentals text and Scientific Examination of Questioned Documents text, neither mentions the eyelet as non-essential part of a handwritten character.	Remove 'not an essential part of a handwritten character'	Accept

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26	3.1.156	3.1.160	Consider adding cross reference to Counterfeit	Consider adding cross reference to Counterfeit	Reject. A fabricated document and a counterfeit document are not necessarily the same thing.
68	3.1.156	3.1.160	“Fabricated document (fictitious instrument)” is defined as “Purported to be genuine but is not, because it has been falsely manufactured, altered, completed, signed, endorsed, contains a false addition thereto or insertion therein, or is a combination of parts of two or more genuine documents.” This appears to be a legal definition. Please provide a citation. This is not a term that an examiner should use when reporting an opinion, judgment or decision about an examination because the examination cannot reveal intent. Check 3.1.172 for the same issue	Please provide a citation and make clear it is a legal definition.	Reject with modification: The definition has been simplified for clarification. Additionally a note has been added to 'fabricated document' 'counterfeit document' and 'forged document' to clarify the difference: NOTE A counterfeit document is an attempt to create an exact copy of a document that exists (e.g., trying to recreate the US passport including all security features). A fabricated document is completely fictitious (e.g., creating a passport from a country that is fictitious). A forged document alters or changes a genuine document (e.g., altering the photo, name, or date on an existing passport).
72	3.1.159	3.1.163	Confusing phrasing. I would insert "document" so that it reads "An obligation, security, or other document representative of value."	Insert "document" so that it reads "An obligation, security, or other document representative of value"	Accept
121	3.1.165	3.1.169	Flourish: A flourish can be found on a lead-in stroke or a terminal stroke as part of one's natural writing or if a person is embellishing a letter. Such embellishment on a single letter or letters is not necessarily a paragraph. If a paragraph refers to the under	Definition of Flourish: An embellished stroke(s) usually found at the beginning or end of a word.	Accept with modification: flourish - A writing movement that is designed to be ornamental. Add term "paragraph" - A writing movement
69	3.1.169	3.1.173	Forensic document examiner	Consider this definition: "A forensic service provider who offers analysis related to the authenticity, genuineness, or source of documents; the work of an FDE does not involve the study of handwriting for its alleged implications."	Accept with modification: "Forensic Document Examiner (FDE)" will be defined as "A forensic service provider who addresses inquiries that arise in matters where the
70	3.1.171	3.1.175	FDE" is defined as "Addresses inquiries that arise in matters where the authenticity, genuineness, or source of documents is questioned; does not involve the study of handwriting for its alleged implications. Cite the source of this definition - NCFS Also check 3.1.164 and cite the legal standard from which this is taken	Cite the NCFS	Reject. The definition that was drafted is derived from an IVCS views document, but has been modified to better address the practice of forensic document examination.
27	3.1.172	3.1.176	Consider adding cross reference to fabricated	Consider adding cross reference to fabricated	Reject with modification. A note has been added to 'fabricated document' 'counterfeit document' and 'forged document' to clarify the difference: NOTE A counterfeit document is an attempt to create an exact copy of a document that exists (e.g., trying to recreate the US passport including all security features). A fabricated document is completely fictitious (e.g., creating a passport from a country that is fictitious). A forged document alters or changes a genuine document (e.g., altering the photo, name, or date on an existing passport).
122	3.1.172	3.1.176	Forged Document: Forgery is a legal term and requires intent, which is why FDE's do not use the term "forged" in reports. Add the proposed few words at the end of the definition. Otherwise change the title to "Altered Document"	Add the following after the word "documents" in the last sentence. "...with the intent to defraud".	Reject with modification. Because this is a legal term that FDEs do not use does not mean the word does not exist, or that FDEs should not know it's meaning. Additionally a note has been added to 'fabricated document' 'counterfeit document' and 'forged document' to clarify the difference: NOTE A counterfeit document is an attempt to create an exact copy of a document that exists (e.g., trying to recreate the US passport including all security features). A fabricated document is completely fictitious (e.g., creating a passport from a country that is fictitious). A forged document alters or changes a genuine document (e.g., altering the photo, name, or date on an existing passport).
71	3.1.172 3.1.156 3.1.94	3.1.176	The definitions for "forged document," "fabricated document," and "counterfeit document" are all nearly identical. Unclear if there is a reason to have these duplicate definitions instead of cross referencing. If so, they should be identical and should all include a cross reference to altered documents as in the 3.1.94 definition.	Harmonize these three definitions and include cross reference to the other terms in each term's definition.	Accept with modification. A note has been added to 'fabricated document' 'counterfeit document' and 'forged document' to clarify the difference: NOTE A counterfeit document is an attempt to create an exact copy of a document that exists (e.g., trying to recreate the US passport including all security features). A fabricated document is completely fictitious (e.g., creating a passport from a country that is fictitious). A forged document alters or changes a genuine document (e.g., altering the photo, name, or date on an existing passport).

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
73	3.1.182	3.1.186	"Ground truth" is defined as "Information provided by direct observation as opposed to information provided by inference." The framing of this definition as dependent on observations is problematic. Ground truth refers to the true state of affairs, not our knowledge of that state of affairs, and observations can be mistaken.	Change the definition to "Information provided by direct knowledge as opposed to information provided by inference" or other standardized definition that correctly emphasizes established knowledge rather than observation." Another possibility: "Ground truth is information that is known to be real or true, provided by direct observation and measurement (i.e. empirical evidence) as opposed to information provided by inference."	Accept. Will use "Information that is known to be real or true, provided by direct observation and measurement (i.e. empirical evidence) as opposed to information provided by inference."
124	3.1.182	3.1.186	Ground Truth: "Ground truth" is based on a known fact. Proficiency testing should be based on ground truth meaning the answer is a known fact. As defined in this document, ground truth can be based on "observation", which could then relate to an FDE's opinion because opinions are based on the FDE's observations (and KSAs) (as stated in 3.1.270). Observation is defined as "gathering information to reach a conclusion".	Redefine as: known to be true or a fact..	Reject. Will use "Information that is known to be real or true, provided by direct observation and measurement (i.e. empirical evidence) as opposed to information provided by inference."
113	3.1.182 "ground truth"	3.1.186	One might question whether "direct observation" necessarily equates to ground truth.	Information that is known to be true as a matter of fact, as verified by objective methods rather than inference. Pate note: The actual definition of "ground truth" is information that IS true. How you determine what to designate as "ground truth" for some specific purpose is a separate issue. I've noticed a distressing tendency in a lot of OSAC docs to conflate the definition of a term with some procedure that is claimed to comply with that definition.	Reject. Will use "Information that is known to be real or true, provided by direct observation and measurement (i.e. empirical evidence) as opposed to information provided by inference."
74	3.1.185	3.1.189	The difference between the definition of "guided signature" and "assisted hand signature" in § 3.1.20 is not clear.	If the terms are synonyms, indicate that in the definitions. If not, revise the definitions or use clarifying notes to differentiate the two terms.	Reject with modification. Cross reference to Assisted Hand Signature added. Also these are not synonymous.
75	3.1.191	Removed	"Handwritten item" is defined as "An item bearing handwriting." This definition does not assist the reader in learning what a handwritten is.	Delete this term from the standard. The meaning is obvious without it.	Accept
35	3.1.196	3.1.199	Full reference citation of "ASTM F1457"	insert ASTM before F1457	Accept
76	3.1.206	3.1.209	"Inconclusive Opinion" is defined as "An opinion expressed when an examination has been undertaken, but the FDE is unable to make a determination with regard to writership or source, for example because of the presence of both similarities and dissimilarities." Because the reasons for an inconclusive opinion can vary greatly and because that information needs to be conveyed, this definition should include that the reasons be conveyed along with the opinion. Requiring that the reasons be reported also will help with the issue noted in 3.1.219 above. confusion between inconclusive and insufficient. And address similar concerns when FDEs use "no conclusion" 3.1.257	Add something to the effect that "when reporting an inconclusive opinion, the reasons for this determination shall be included"	Reject: Outside of the scope of this document. Should be in the "best Practice" section of the Handwriting Guide or Conclusion Terminology Guide.
114	3.1.206, 3.1.219, and 3.1.258	3.1.209	Are 'inconclusive', 'insufficient', and 'no conclusion' meant to be synonymous/interchangeable? I would think not (and it is unclear from the document) -- but if so, that should be explicitly stated in each of these definitions.		Reject: Insufficient is definitely different as it is not a conclusion. Insufficient leads to inconclusive or no conclusion opinion.
77+78	3.1.211	3.1.214	"Individualizing characteristics" and "distinguishing characteristics" have the same definition: "Marks or properties that serve to characterize an item(s) and distinguish it from similar item(s)." NOTE "Both class characteristics (marks or properties that associate individuals as members of a group) and individual characteristics (marks or properties that differentiate the individual members in a group) are individualizing characteristics." The definitions are problematic (see the comment on §§ 3.1.56-57), and using the verb "distinguish: to define "distinguishing". is not effective. "Individualizing" is a limiting case of "distinguishing" rather than a synonym for it. The note is confusing. Class characteristics are individualizing characteristics?	See the comments on 3.1.56-57, "individualizing," and "characteristic" within the document. Consider deleting the note.	Accept with modification: Changed one term from distinguishing characteristic to discriminating characteristic. Deleted the note.

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
28	3.1.224	3.1.227	Include cross reference to common writership/authorship	Include cross reference to common writership/authorship	Accept
78	3.1.228	3.1.231	"Known" is defined as "Of established origin associated with the matter under investigation." "Established" by whom and how?	Add more description of what "established" means.	Reject: By whom and how is case specific.
79	3.1.229	3.1.232	"Known writing" is defined as "Of established origin used for comparison with questioned writing. Known writing may be collected or requested and can consist of exemplars or purported writing." We see 2 issues - first, by definition a "purported" writing cannot be a "known," can it? Second, the origin doesn't have to be established for something to be known; on the contrary, the "origin" of a document containing unknown handwriting might be known (in part). For example, the "known" might be a written grocery list found in the desk of the deceased.		Reject: First issue. All collected knowns are "purported" knowns. Its up to the FDE to examine the "purported" knowns for intra writer consistency. Second issue. The commentor answered his/her first issue with the explanation of "origin". That's why a grocery list would be "purported".
29	3.1.232	3.1.235	While legs are on the right side in a latin alphabet, other alphabets have them on the left.	Consider broadening the definition	Accept: Added "typically" after appendage.
16	3.1.234	3.1.237	Edit to definition	Add ESDA (A product of an EDD/ESDA examination)	Reject: Definitions cannot include proprietary products.
81	3.1.238	3.1.241	"Limitation" is defined as "A constraint to the examination, comparison, or opinion formation process (e.g., non-original documents, insufficient quantity or quality of material)." Limitations also exist for all methods and techniques, and FDE should be alert to those as well.	Include "method" with an example specific to the method. For instance: "A constraint to the method, examination, comparison, or opinion formation process (e.g., absence of frequency data, non-original documents, insufficient quantity or quality of material).	Reject: Any limitation would be separate and discreet from the method. The few examples listed were not meant to be a exhaustive.
115	3.1.242 "LSU"	3.1.245	Update definition/scope of LSU. See Dror & Kukucka (2021), doi:10.1016/j.fs SYN.2021.100161	A procedure in which examiners use prescribed criteria to make (and document) careful <i>a priori</i> decisions about what information to consider and in what order so as to minimize the risk of bias and maximize the quality of their decisions.	Accept with modification: Added "and minimize the risk of bias" to the end of the definition.
80	3.1.249	3.1.252	"Match between ink samples" is defined as "The inability to distinguish between ink samples at a given level of analysis.(SWGDOC M01)." The phrase "given ;level of analysis" is obscure. Should a "match" be declared when the analysis is based on insufficient information to draw a useful conclusion?	Clarify "given level of analysis." Or simply omit the term from the list because it is covered fully by the identical definition of "match between samples."	Reject: The given level of analysis is case specific and will be decided by the FDE and laboratory policy.
82	3.1.249	3.1.252	"Match between ink samples" is defined as "The inability to distinguish between ink samples at a given level of analysis. (SWGDOC M01)" "Match" is a term to be avoided in forensic comparisons and should be discouraged. See US DOJ ULTRs.	Perhaps: "The term match is disfavored and should not be used. Instead, the inability to distinguish between ink samples should be expressed as 'the ink samples are indistinguishable at the given level of analysis.' See US DOJ ULTRs"	Reject: The DOJ ULTR's do not address ink examinations.
83	3.1.250	3.1.253	"Match between samples" is defined as "The inability to distinguish between two or more samples or items at a given level of analysis. (SWGDOC M01)." The phrase "given level of analysis" is obscure. Should a "match" be declared when the analysis is based on insufficient information to draw a useful conclusion?	Clarify "given level of analysis" and discourage the use of "match."	Reject: The given level of analysis is case specific and will be decided by the FDE and laboratory policy.
116	3.1.250 "match b/w samples"	3.1.253	The use of the word "match" can be problematic, as explained by NCFS and others.		Reject: No recommendation given.
84	3.1.252 Stop here	removed	"Mentor is defined as "One who provides complementary guidance and advice, not discipline-specific core training, to an examiner with limited experience in order to advance their professional development." Complementary to what?	Delete "complementary."	Mentor - Removed due to non-use in ASB QD standards.

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
125	3.1.252	removed	<p>MENTOR: This definition does not meet the definition of a mentor in forensic literature and how it has been used by FDEs in prior years. As worded, it implies a mentor cannot be the principal trainer or provide core training. This is incorrect. A trainee can be in an apprenticeship program or a mentorship program or, as some called it, a tutelage in which the principal trainer is called the tutor, rather than a mentor. Note the definition in the NIST publication of "Forensic Handwriting Examination and Human Factors: Improving the practice through a Systems Approach" (May 2021). "Based on the U.S. training manuals reviewed by the Working Group....Historically, trainees were (1) trained under the tutelage of FDEs either in private practice or in government laboratories in an apprenticeship or mentorship capacity..." Note the use of the word "or" linking the alternative terms of mentorship and apprenticeship. The Human Factors report also states "... most training in forensic handwriting follows the mentored or apprenticeship approaches." . Again, the use of the word "or" indicating one or the other. Therefore, it is clear that mentor or tutor have been used in the past and are currently acceptable words to describe one's principal trainer. One ABFDE Diplomate has referred to her training as a "Tutelage" (not an apprenticeship because she trained part-time with an FDE while working elsewhere full time during her training). Based on the terminology proffered in Terms & Definitions, on cross examination she would have to admit that she did not have proper training since she did not have an "apprenticeship" almost daily in her trainer's laboratory and that the ABFDE made an exception for her (as well as several other ABFDE Diplomates, one of which is an author in the Kelly-Lindblom book) when evaluating training and awarding Diplomate status on an improperly trained person. The ASQDE website describes training as a "two years of full-time training program under the tutelage of a qualified forensic document examiner" (the word apprenticeship not being used) and has in the past used the term "Mentor" in their literature as the word to describe the trainer. The ASQDE also had written "two years training or apprenticeship under the supervision of a recognized Practicing Document Examiner or Specialist...". The word "or" designating an option simply called "training", not called an apprenticeship. Inasmuch as the words "Mentor" and "Tutor" have been used to describe training, these terms should be included. Further, ASB standards continually reference the SWGDOC training standard which does not limit training to an "apprenticeship", another reason to include these</p>	<p>Redefine "Mentor" as "An individual who instructs a trainee in the knowledge, skills, and abilities necessary to become a forensic document examiner." Also, insert a definition for "Tutor", which would be the same as that for Mentor. And add "Tutelage" defined as "A training program to gain the knowledge, skills, and abilities necessary to become a forensic document examiner, under the tutelage of a qualified forensic document examiner. Add "Mentorship" using the same definition as Tutelage. Add the following NOTE under Mentorship and Tutelage: The trainee trains under the auspices of a principle trainer. The training may be full time or part time, not to exceed four years. One-on-one case work study is an essential element of the training.</p>	Mentor - Removed due to non-use in ASB QD standards.
7	3.1.252 (mentor)	removed	Reword the sentence. "Complementary" is vague. "limited experience" is vague. See my recommended rewrite in red.	mentor An individual who provides guidance, examples and advice to an examiner who is advancing his/her professional development.	Mentor - Removed due to non-use in ASB QD standards.
30	3.1.258	3.1.260	Include cross reference to inconclusive	Include cross reference to inconclusive	Accept
85	3.1.258	3.1.260	<p>"No conclusion" is defined as "An opinion expressed due to insufficiency of material, significantly limiting factors, or the presence of both similarities and dissimilarities (it may also be expressed as Inconclusive, Indeterminate or Insufficient). This is the zero point of the confidence scale. NOTE In handwriting, this can be the presence of disguise in the questioned and/or known writing or a lack of comparable writing." The reference to the "zero point of the confidence scale" is obscure. There is no confidence scale presented in the rest of the document.</p>	A specific "confidence scale" should be defined elsewhere in this document, or the reference should be removed altogether.	Accept with modification - Last sentence removed.

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
86	3.1.270	3.1.272	“Opinion” is defined as “View, judgment, belief – a coherent, scientifically sound expression(s) that takes into consideration task-relevant information in addition to observations, data, calculations and interpretations.” Opinions are not necessarily scientifically sound, and are not restricted to task-relevant information. The use of the word “coherent” is also unclear, because it is not defined. This definition more closely fits an expert opinion.	Use OSAC preferred definition: “View, judgment, belief – takes into consideration other information in addition to observations, data, calculations, and interpretations.”	Reject: OSAC definition is overly broad.
126	3.1.270	3.1.272	Opinion: I do not think that the word “belief” is appropriate since belief does not have to be supported by the evidence. An example of belief given by Merriam-Webster is “one believes in Ghosts”. Would the court accept an examiner testifying that “it is my belief the person did not sign the document”? I suggest this word be eliminated, along with “view” and instead add “conclusion” since judgment and conclusion are reached by objective reasoning based on the physical evidence.	Remove the words “view” and “belief” and insert the word “conclusion”.	Accept
6	3.1.270 (opinion)	3.1.272	xxx	"opinion" View, judgment, belief – a coherent, scientifically sound expression(s) that takes into consideration task-relevant information in addition to observations, data, calculations and interpretations.	Reject: Commentor has no comment.
127	3.1.277	3.1.280	Patching: “Retrace” is defined elsewhere in the documents (3.1.334) as a “stroke written over the preceding stroke, typically in a reverse direction” which is a good definition. Retraces are common in writing and are not considered “patching”, as “patching” is commonly used in the profession meaning to correct or improve something. If Mary wrote the letter “M” by using a downstroke then retraces that downstroke with an upstroke before forming the top curvature of the letter, it is not considered “patching”. It is simple a retrace. Clarification is needed.	Redefine “patching” using Hilton’s definition: “Retouching or going back over a defective portion of a stroke or letter.”	Accept with modification. "retrace" has been removed and the definition revised to read: Returning to a portion of the writing for the retouching of a stroke, letter, or character.
36	3.1.279	3.1.282	Add punctuation/capitalization to separate sentences. Sentence was confusing without separation.	When the pen point has flexibility, this emphasis produces shading; but with more rigid writing points such as ball point pens, heavy pen emphasis can occur without any evidence of shading.	Accept: Grammatical
17	3.1.291	3.1.294	Spelling error	If referring to computer graphics, the correct spelling is 'pixelation'.	Accept
37	3.1.295	3.1.298	include additional use of term "platen"	May also refer to a typewriter roller, the glass surface of a copier, or an EDD vacuum bed.	Accept
87	3.1.311	3.1.314	“Proposition” is defined as “Statement or assertion that is either true or false. Propositions represent two or more competing explanations for the evidence in the case at hand. As such, they are mutually exclusive, meaning they cannot be true at the same time.” But both propositions can be false and this should be part of the definition.	Perhaps: “Statement or assertion that is either true or false. Propositions represent two or more competing explanations for the evidence in the case at hand. As such, they are mutually exclusive, meaning they cannot be true at the same time. But they can both be false. For example ‘John wrote note A’ and ‘Susan wrote note A’ are mutually exclusive propositions but both could be false.”	Reject with modification: The definition has been clarified for a single proposition. A discussion on mutually exclusive propositions and their use is beyond the scope of this document.
128	3.1.313	3.1.316	Qualified Sources: Based on this definition, a trainer could not give credit to his or her trainee for knowledge or skills learned through taking a course from a university that does not endorse the ANS standards in their corporate documents, a medical doctor speaking of neurological factors that influence handwriting since there is not ANS standard addressing this issue and because he is not an FDE. One could not get credit for attending state or county bar association continuing education classes where the attorney/speaker spoke on cross examination techniques and how to trap the expert witness since the bar does not endorse ANS “in their policies”. The wording is too restrictive and eliminates speakers who are not familiar with the ANS specific for FDEs and who do not endorse such standards “in their policies”. Also, many professions use the words “continuing Education” to define continued learning after one’s basic (core) education in their profession. The legal profession in one example. There is very little difference between “continued training” and “continuing education”, but some people want each to have its own definition, so it is best to include both terms.	Recommend leaving out the last sentence, and adding the word “continuing education”, after the word “training”.	Reject with modification: Definition changed to "Organizations or individuals that provide, sponsor, or otherwise arrange for creditable training or instruction on forensic document examination specific topics. These sources support, either through reflection in their policies or by the individual presenting the training, the type of training and required minimum criteria provided in American National Standards."

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5	3.1.313 (qualified sources)	3.1.316	Delete the second sentence completely. It is limiting any other training, adult education and continuing education in performing the variety of skills as a forensic document examiner. For example, I have a Professional Graduate Certificate in Business Communications from Harvard Extension School. In my Advanced Public Speaking Class, I became more skilled at presenting verbal communications while presenting clear testimony to jurors and/or others in the judicial community during deposition and/or trial. In Business Rhetorics, I learned how to better compose my written reports. I also learned how to present my testimony via Zoom in an easy to understand style. I consider these skills to be related topics. I believe Harvard would be a qualified source to provide continuing education that is essential as a testifying expert in courtroom and/or written reports.	<p>"qualified sources"</p> <p>Organizations or individuals that provide, sponsor, or otherwise arrange for specific creditable training or instruction on forensic document examination or related topics.</p>	Reject with modification: Definition changed to "Organizations or individuals that provide, sponsor, or otherwise arrange for creditable training or instruction on forensic document examination specific topics. These sources support, either through reflection in their policies or by the individual presenting the training, the type of training and required minimum criteria provided in American National Standards."
88	3.1.318	3.1.321	"Randomly acquired characteristic RAC" is defined as "A feature or defect that can occur in the manufacturing process or from individual usage occurring after manufacture (for example, wear and damage defects such as cuts and gouges, reproducible blemishes, impression voids, improper and extraneous inking, or coincidental peripheral printing). The position, orientation, size and shape of these characteristics are essential to the determination of a specific device as the source of an impression." The highlighted language suggests source to the exclusion of all others, which is problematic, and that source (as opposed to source or exclusion) is the determination that is sought.	Replace the italicized language with "are features that are part of the information a FDE uses to form an opinion about the probability of items being generated by the same or different source."	Accept: Definition changed to "A feature or defect that can occur in the manufacturing process or from individual usage occurring after manufacture (for example, wear and damage defects such as cuts and gouges, reproducible blemishes, impression voids, improper and extraneous inking, or coincidental peripheral printing). The position, orientation, size and shape of these characteristics are features that are part of the information a FDE uses to form an opinion about the probability of items being generated by the same or different source."
31	3.1.319	3.1.322	Is it necessary to say both general and handwriting on range of variation when, as defined, it's specifically defined solely for handwriting	Remove general or reword definition	Accept
108	3.1.32 "cognitive bias"		Definition of "cognitive bias." Proposed resolution is from Spellman et al. (2022), doi:10.1016/j.fs SYN.2021.100200		Reject: No recommended text given.
89	3.1.326	3.1.329	"Reliability is defined as "Related to the degree of random error of the instrument/method, including the FDE, and which may be assessed through repeatability and reproducibility." Saying that A is related to B does not define A. Repeatability and reproducibility of measurements are two types of statistical reliability rather than two ways to assess reliability.	Use the OSAC-preferred definition: "Consistency of results as demonstrated by reproducibility or repeatability."	Accept
90	3.1.328	3.1.329	"Repeatability" is defined as "A measure of reliability using the same FDE and the same instrument/method under exactly the same conditions to arrive at the same conclusion or result. (NIST HF)." "Exactly the same conditions" is impossible to achieve."	Use the OSAC-preferred definition: "Extent of agreement between more than one result determined in the same place, by the same person, on the same equipment, in the same way, at similar times."	Reject: Version published in NIST Human Factors for Handwriting is preferred.
91	3.1.329	3.1.329	"Reproducibility" is defined as "A measure of reliability using different FDEs and/or differing conditions with the same measurement instrument/method to arrive at the same conclusion or result. (NIST HF)." Reproducibility is a type of reliability rather than a measure of it.	Use the OSAC-preferred definition: "Extent of agreement between more than one result determined under any combination of different conditions."	Reject: Version published in NIST Human Factors for Handwriting is preferred.
92	3.1.336	3.1.339	technical review	Add a note that a blind review is the preferred system for review.	Reject with modification: The note is unnecessary. Changed to "An assessment by another qualified forensic document examiner to review the methods and results of the examiner of record to ensure the conclusions rendered are supported."
130	3.1.336	3.1.339	Review, Technical: As written, to a non-FDE (such as an attorney or lay-person) this sounds like what is commonly referred to as a "verification". Since this is not an independent examination of the evidence (from scratch), a note should be added for clarification for the non-FDE reader.	Add: Note – A technical review does not result in the formation of an independence opinion/conclusion by the reviewing examiner. Conclusions can only be reached upon conducting an independent (blind) examination of the same evidence.	Reject: Standards are written for FDE examiners, not laypersons.
117	3.1.336 vs. 3.1.419	3.1.339 vs. 3.1.423	The difference between "technical review" and "verification" is unclear. As written, it seems as if the former is used exclusively to verify results (and is non-independent), whereas the latter (being independent) can either verify or refute the result.		Reject: No recommendation given.

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
47	3.1.34	?	<p>"Bias, contextual" is defined as "The effect on the evaluation and interpretation of data of exposure to outside influences, which can be unconscious, or to information or that is either irrelevant to the judgmental task or inappropriate for consideration."</p> <p>This definition appears to incorrectly suggest that task relevant information is not potentially biasing. Information can be both task relevant and biasing. An example is the potential for reverse reasoning when comparing items. It is wrong to conflate bias with task relevance.</p>	We understand that the Human Factors Resource Task Group will be suggesting a definition of contextual bias and we defer to their definition.	Reject: No recommended text given.
110	3.1.34 "contextual bias"	?		arising from an individual's exposure to or knowledge of task-irrelevant information when performing a judgmental task.	Accept: Definition changed to "arising from an individual's exposure to or knowledge of task-irrelevant information when performing a judgmental task."
129	3.1.349	3.1.352	Signature Style: Another type of writing encountered is what is referred to as "print-script" which is an intermixing of cursive letters and printed letters. Add as a fourth style.	Add: 4. Print-Script (an intermixing of cursive letters and printed letters).	Reject: This may be a writing style but not necessarily a signature style.
93	3.1.350	3.1.353	<p>"Significant difference" is defined as "A feature that is structurally divergent between items or groups of items, is outside the observed range of variation of at least one of them, and that cannot be reasonably explained." (1) The phrase "structurally divergent" is obscure. The limitation is inconsistent with the definition of "difference" in § 3.1.111, which treated any "structural or other characteristic or feature" as a potentially significant difference. (2) Words seem to be missing after "reasonably explained"; presumably, it means "reasonably explained under the hypothesis that the items originated from the same source." (3) The phrase "significant difference" has a different meaning throughout statistics and science. (4) "Outside the range of variation in at least one item" means nothing here because if the "structural divergence" is within the variation observed in one item, there is no difference between them. Also, if the observed difference is within the range of variation of the comparison item, then the difference is explicable as normal variation, and the phrase about variation adds nothing to the requirement that the discrepancy is inexplicable if the null hypothesis is true. (5) "Difference" was defined in § 3.1.111 as a "significant difference." Why are there two definitions for the same term?</p>	We suggest abandoning the phrase "significant difference" entirely. The only thing that makes the difference significant is that it cannot be reasonably explained if the same-source hypothesis is true. "Inexplicable difference" seems to be what is intended. Its definition might be "A difference that cannot plausibly be explained if the proposition that the items originated from the same source were true."	Reject: Balloted definition is appropriate and useful.
94	3.1.351	3.1.353	"Significant similarity" is defined as "A repeated distinguishing characteristic that is structurally similar between items or groups of items and is within their observed range of variation (e.g., consistent height ratio, consistent penlift)." The problem here is that the consistency may signify nothing. If the similarity in a potentially distinguishing characteristic is within the range that is common when the items have the same source means that there is insufficient evidence to reject the same-source hypothesis. It does not mean that there is any "significant" evidence in favor of that hypothesis.	Do not use this term. Use terms that have to do with the degree of support for one hypothesis as opposed to other hypotheses.	Reject: The "significance" may be case specific. It is up to a trained examiner to determine which characteristics are significant or not, hence the definition. Balloted definition is appropriate and useful.
95	Stop Here	3.1.355	Similarities" is defined as "A feature or characteristic observed in one item or group of items that is also observed in the same form in a comparable item or group of items." That two characteristics have the same general form does not make them similar. Also, if the term is plural the definition also should be.	Change "similarities" to "similarity" and propose a clearer definition.	Accept with modification. Term is now singular. No suggested text for a clearer definition. CB agreed to not change definition during meeting.
96	3.1.368	3.1.371	"Speed of execution" is defined as "The swiftness with which a body of writing or signature is prepared. With the exception of some digitally captured writing, it cannot be measured precisely, but can be interpreted in broad terms such as slow, moderate, or rapid." The second sentence, which is not integral to the definition and requires a citation.	Please provide a citation supporting the claim in the second sentence or delete the sentence.	Reject: It is common knowledge among competent forensic document examiners that the speed of writing can be inferred by examining the written line. One citation is "Another look at Handwriting Movement", Ostrum, B. and Tanaka, T., JASQDE, Vol.9, No. 2, pgs. 57 - 67. (2008).

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
97	3.1.380 - 382	384 and 3.1	Each term or definition includes “sufficient” without any reference to what is and is not “sufficient”. If there is no reference to a standard or process for measuring sufficient then it is an opinion or decision based on expert judgment and should be so defined.	Either define with specificity or references or, if this is an opinion, identify it as such. For example in the absence of references “sufficient quantity” is “an opinion by an individual FDE that the amount of writing in the sample allows that FDE to assess the writer’s distinguishing features and range of variation.”	Accept - add "based on the expert's professional judgement" to both "Sufficient" definitions. Suitability definition is addressed by change to Sufficient definitions.
98	3.1.383	3.1.387	“Systematic error” is defined as “A component of error whereby replicate measurements remain constant or vary in a predictable way - for example an uncalibrated instrument would produce a constant systematic error. (NIST HF).” Systematic error does not cause replicate measurements to remain constant. An uncalibrated instrument might not be systematically in error by a constant amount.	Consider this definition: “Differences between true and measured values that do not average to zero in the long run.”	Reject: Proposed definition refers to accuracy and not systematic error.
99	3.1.384 3.1.845	388 and 3.1	“Task-irrelevant information” is defined as “Not pertinent or applicable to the subject, material, or question being considered. The consideration may be broad (i.e., case or discipline level) or specific (i.e., task level) (see 3.1.31 bias, 3.1.32 bias cognitive, 3.1.33 bias confirmation, 3.1.34 bias contextual).” [text-relevant information is defined similarly.] The use of “pertinent” and “applicable” are problematic here. There is information that could be pertinent yet task-irrelevant.	<u>The definitions of both task-relevant information and task-irrelevant information should more clearly hinge on relevance to making a conclusion about a proposition. The National Commission on Forensic Science’s definitions may be useful: “Information is task-irrelevant if it is not necessary for drawing conclusions about the propositions in question, or if it assists only in drawing conclusions from something other than the physical evidence designated for testing, or assists only in drawing conclusions by some means other than an appropriate analytic method”</u> <u>“Information is task-relevant if it is necessary for drawing conclusions: (i) about the propositions in question, (ii) from the physical evidence that has been designated for examination, (iii) through the correct application of an accepted analytic method by a qualified analyst.”</u>	Reject with modification: Wording of both definitions revised to add "information that is" as a lead-in to each. Information that is pertinent to the examination at hand would be task relevant. NCFS definitions are more broad than specific.
100	3.1.397	3.1.401	The presence of the word “enjoyable” seems out of place here.	Replace “enjoyable” with “consistent” or other more appropriate word.	Accept with modification. Removed “enjoyable and” from the definition.
101	3.1.416	3.1.420	“Unnatural writing” is defined as “A writing movement not typical in day-to-day writing that may be the result of intent, or internal/external factors. Some characteristics of unnatural writing movements include slow speed, poor line quality, poor line continuity with stops or hesitations in the pen line, and blunt commencement and termination strokes. This is often seen in disguised or simulated writing.” Claims, such the two highlighted sentences are not part of a definition should include a reference or be deleted.	Delete the last two sentences or provide references.	Reject with modification: Last two sentences are moved to a NOTE. The WG concurred that no references are necessary for this edit.
102	3.1.424	3.1.428	The word “as” is missing in “these movements may be described garland, arcade, angular, or indeterminable.”	Add “as” before “garland.”.	Accept
103	3.1.424	3.1.428	The definition implies that movements can only be described as garland, arcade, angular, or indeterminable. Unclear if descriptions are restricted to these 4 types or if they are non-exclusive examples.	if non-exclusive examples, rewrite the sentence to clarify that these are examples. Otherwise, no change is necessary.	Reject: Non-exclusive is implied with the word “may”. No change made.
132	ADD	3.1.39	Add the definition of “Blunt ending”	Blunt ending: a final stroke that remains consistent in pressure or becomes heavier at it terminal point.	Accept with modification: Blunt Ending - effect on commencement and terminal strokes of letters, both uppercase and lowercase, by the application of the writing instrument to the paper prior to the beginning of any horizontal movement; an action that usually omits any beard, hitch, knob, or tick. H & H Glossary
133	ADD	n/a	Add the definition of “Certification” An argument has been made in the past that FSAB cannot be mentioned because it implies an endorsement. This is not a valid argument because standards produced by ASB reference organizations such as OSAC, NIST, NCFS, CIE, ASTM, SWGDOC and others and this is not considered an “endorsement”, only a reference to an entity having an important role within the profession. FSAB is the only certifying body awarding accreditation; therefore, it has an important role within the professions. Since Internet links are provided to OSAC, NCFS, a link could also be provided to FSAB.	Add “Certification” defined as: FDE’s have the option to test for certification or board certification. Some Certification Boards are accredited by the Forensic Specialties Accreditation Board (FSAB). Some organizations offer certification to its members. Others grant the titled of certified if the person purchases a course offered by the certifying entity.	Reject: WG concurs that this term is occupation related and not process related. Definition as proposed does not define “certification”. A definition of “certification” can be found in any general dictionary and does not need to be included.
134	ADD	n/a	Add the definition of “Pressure Pattern”	Pressure Pattern: Created by the muscular rhythm of contraction and release when writing strokes.	Reject: Phrase not used in any ASB FDE documents.

#	Section	Updated Section	Comments	Proposed Resolution	Final Resolution
135	ADD	3.1.379	Add the definition of "Stroke" the most basic element of handwriting	Stroke: The basic unit of handwriting which begins when the pen touches the paper and begins moving until it changes direction.	Accept with modification: "Stroke" is defined as "A single written line, either ascending, descending, or lateral in the formation of a letter or any of its parts." H&H Glossary
106	All	n/a	The collection of terms in this terminology standard is short on words dealing with uncertainty. Words like sensitivity, specificity, false elimination, and false identification are absent. There are almost no terms associated with statements about the strength of evidence in the form of either qualitative or quantitative expressions for likelihood ratios or Bayes Factors.	Expand the vocabulary to be more comprehensive and forward looking.	Reject: No suggested text
104	Annex A	Annex A	The OSAC Lexicon, 2018. available at http://lexicon.forensicosac.org/Term/Home/Index , should not be cited. It is not an authoritative source, but rather a compendium of largely unedited definitions and ones taken from other standards that may not be accurate.	Remove the lexicon as a source. Cite to the other published standards themselves if those are the source of the definitions here.	Accept. OSAC Lexicon citations removed through the document.
9	Annex A/Bibliography	Annex A/Bibliography	Typo in the footnote hyperlink for: 5] JCGM 200:2012 International Vocabulary of Metrology - Basic and General Concepts and Associated Terms (VIM 3rd edition) (JCGM 200:2008 with minor corrections) BPIM, Bureau international des poids et mesures (International Bureau of Weights and Measures), Sèvres, France: 2012.	The following hyperlink contains an unnecessary space between the "o" and the "n" of "publications" which invalidates the hyperlink from working properly: Available from: https://www.bipm.org/en/publications/guides/	Accept
10	Annex A/Bibliography	Annex A/Bibliography	This section is incomplete. For terms relating to graffiti add:	Barnard, Lee. <i>Understanding and Investigating Graffiti</i> . Outskirts Press, Inc., Denver, CO, 2007. Glossary pp. 162-176.	Reject: Every published book and article cannot be included, and no rationale was given for why this should be included.
11	Annex A/Bibliography	Annex A/Bibliography	This section is incomplete. For terms relating to electronic signature examination add:	Harralson, Heidi. <i>Developments in Handwriting and Signature Identification in the Digital Age</i> . Anderson Publishing, Waltham, MA, 2013. Glossary pp. 125-128.	Reject: Every published book and article cannot be included, and no rationale was given for why this should be included.
12	Annex A/Bibliography	Annex A/Bibliography	This section is incomplete. For terms relating to crime scene investigation/handwriting add:	Fish, Jacqueline T. and Larry S. Miller and Michael C. Braswell. <i>Crime Scene Investigation</i> . Anderson Publishing, Newark, NJ, 2007. Glossary pp.395-407.	Reject: Every published book and article cannot be included, and no rationale was given for why this should be included.
13	Annex A/Bibliography	Annex A/Bibliography	This section is incomplete. For terms relating to handwriting datasets add:	Atanasiu, Vlad. <i>Expert Bytes: Computer Expertise in Forensic Documents - Players, Needs, Resources and Pitfalls</i> . CRC Press, Florida, 2013. Technology p.46.	Reject: Every published book and article cannot be included, and no rationale was given for why this should be included.
14	Annex A/Bibliography	Annex A/Bibliography	This section is incomplete. For comprehensive terms relating to the function of handwriting add:	Saudek, Robert. <i>Experiments with Handwriting</i> . Books for Professionals, Sacramento, CA, 1978 reprinted. Glossary pp.369-394	Reject: Every published book and article cannot be included, and no rationale was given for why this should be included.
131	Bibliography	Bibliography#4	Number 4. The definition referenced in the Huber article in 1959 is not as complete as his ACE definition in <i>Handwriting Identification: Facts and Fundamentals</i> (1999) where in the Analysis section he includes the knowns and questioned, not only the questioned specimens as stated in the 1959 version. As we all know the FDE must intra-compare the known specimens as well. There are other improvements in the 1999 definition he gives for ACE. There is no special need to have the first mention of ACE since the initial "creator" of the term is still being credited.	Change the reference from Huber (1959) to <i>Handwriting Identification: Facts and Fundamentals</i> , Huber & Headrick (1999), pg. 34.	Accept

Deadline of Submission of Comments: 4-Nov-24

Document Number: ASB TR 071

Document Title: Forensic Document Examination Terms and Definitions

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		3.1.2	T	"Accidental characteristic - An outlier of a writer's characteristic habits or abilities." - Outlier has a specific meaning in statistics and probability and it is not "accidental events". The definition is, overall, to vague also.	Perhaps something like "Characteristics that you would not expect to repeat in someone's writing because they are anomalies, thus they are not diagnostic for source judgments or consistent features of a person's handwriting." or something else like that.		Accept with modification: "One that falls outside of the writer's range of variation, and that would not be expected to be repeated in the writing because it may be an anomaly."
2		3.1.3.3	T	"Evaluation - The process of assessing similarities and dissimilarities in characteristics for purposes of associated or dissociation, as determined by the likelihood of occurrence, weight, or significance of each." This definition implies the existence of objective base rate data or frequency data for these characteristics that do not exist.	Make it clear that these variables/base rates that are used in the evaluation stages of the process are based on subjective experience or consensus, not objective data. As a result these will vary between and within examiner.		Accept with modification: "The process of assessing similarities and dissimilarities in characteristics for the purposes of association or dissociation."
3		3.1.32	T	"Bias - a general term for an tendency of a person or instrument to deviate systematically from an actual value in making measurement or rendering a judgment." Bias is not the same as inaccuracy, but this definition equates it with inaccuracy ("deviate systematically from an actual value") and is not always systematic. Also, bias does not just affect judgments or measurements, but also the confidence the examiner associates with those judgments and measurements.	Use a definition of bias that more clearly reflects the current understanding of how bias operates in decision contexts like Forensic Document Examination.		Accept with modification: "Any factor that has the potential of causing systematic deviation from any part of an evaluative process."
4		3.1.35	T	"Bias, contextual - Arising from an individual's exposure to or knowledge of task-irrelevant information when performing a judgmental task." Not a complete sentence. What arises from exposure to/knowledge of task-irrelevant info? Also task relevant information can also lead to bias, it's just less problematic in an applied sense. Also, contextual bias does not just affect judgments or measurements, but also the confidence the examiner associates with those judgments and measurements.	Use a definition of contextual bias that more clearly reflects the current understanding of how bias operates in decision contexts like Forensic Document Examination.		Accept with modification: "A deviation in human judgment caused by exposure to information that is either irrelevant to the judgmental task or inappropriate for consideration." OSAC Preferred 2020

Deadline of Submission of Comments: 24-Feb-25
Document Number: ASB TR 071
Document Title: Forensic Document Examination Terms and Definitions

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	180-182	Bias, cognitive	E	The effect of a set of influences, which can be unconscious, on the reliability and validity of an individual's observations and conclusions.	use the OSAC preferred definitions instead to be consistent among all forensic disciplines: A tendency for an individual's preexisting beliefs, expectations, motives, or the situational context to influence their sampling, observations, results, interpretations, or opinions, or their confidence in the aforementioned.	OSAC preferred terms should be used if this document is going to head back to OSAC to be placed on the registry	Accept. Not open for public comment, but the CB agreed to the updated definition.
2	184-186	bias, confirmation	E	The tendency to search for data or interpret information in a manner, which can be unconscious, that supports one's preconceptions, expectations or desires.	A tendency to search for, collect, perceive, or interpret information in a manner that supports preconceptions, expectations, or desires. NOTE: This is a type of cognitive bias.	OSAC preferred terms should be used if this document is going to head back to OSAC to be placed on the registry	Accept. Not open for public comment, but the CB agreed to the updated definition.
3	188-190	bias, contextual	E	A deviation in human judgment caused by exposure to information that is either irrelevant to the judgmental task or inappropriate for consideration.	A tendency for exposure to or knowledge of case-specific information to affect the impartial collection, perception, or interpretation of evidence. NOTE: This is a type of cognitive bias.	OSAC preferred terms should be used if this document is going to head back to OSAC to be placed on the registry	Accept
4	563-565	diffuse reflection	E	Diffusion by reflection in which, on the macroscopic scale, there is no regular reflection.	the reflection of light or other waves or particles from a surface such that a ray incident on the surface is scattered at many angles rather than at just one angle from: https://www.sciencedirect.com/topics/engineering/diffuse-reflection#:~:text=Diffuse%20reflection%20is%20the%20reflection,the%20case%20of%20specular%20reflection. or - light rays scatter in different directions after hitting an uneven surface	don't use the terms you are trying to define in the definition and be consistent with other scientific disciplines	Reject. Not open for public comment.
5	832-835	fluorescence	E	A process by which radiant flux of certain wavelengths is absorbed and reradiated nonthermally at other, usually longer, wavelengths.	the emission of light by a material that has absorbed light or other electromagnetic radiation of shorter wavelength (higher energy).	be consistent with other scientific disciplines - the suggestion was modified from ANSI/ASTM E2228-23a	Reject. Not open for public comment.
6	909-911	ground truth	E	Information that is known to be real or true, provided by direct observation and measurement (i.e., empirical evidence) as opposed to information provided by inference.	Information that has been verified as true and the data is used for training, validating, or testing	your definition comes from wikipedia and is vague. I think you need to explicitly state how ground truth data is used	Reject. Not open for public comment.
7	1037-1041	infrared, IR	E	Referring to radiant flux having wavelengths longer than the wavelengths of visible light, usually from ~700 nm to 1400 nm (~0.7 µm to 1.4 µm) as per the International Commission on Illumination (CIE) for IR-A.	form of light outside the visible range with a range of wavelengths from about 700nm to 1400nm	define in terms of light or energy not radiant flux and be consistent with how other disciplines define IR (IR spectroscopy)	Reject. Not open for public comment.

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			E-Editorial T-Technical				Final Resolution
8	1717-1731	spectroscopy	E	The study of the absorption or emission of electromagnetic energy by a chemical species as a function of the energy incident upon that species; this analytical technique is used to identify elements and/or atomic and molecular structure by measurement of the radiant energy absorbed or emitted by a substance in any of the wavelengths of the electromagnetic spectrum.	The study of the absorption or emission of electromagnetic energy as a function of its wavelength or frequency to obtain information about the structure or properties of the material	define consistent with other disciplines who use spectroscopy - don't use species here, and I wouldn't state it identifies elements but provides information about the material being studied based on the interaction of light with the material	Reject. Not open for public comment.

Deadline of Submission of Comments: 26-May-25
Document Number: ASB TR 071
Document Title: Forensic Document Examination Terms and Definitions

Comment #	Text Line # (s)	Document Section	Type of Comment	Current Document Wording	Proposed Revision	Revision Justification	For Working Group use only, not to be completed by commenter.
			E-Editorial T-Technical				Working Group Resolution
1	386	3.1.75	E	...wavelengths of white light...	...wavelengths of light...	"white" is not necessary and the color-shifting can occur outside of the visible region.	This comment was not a redlined portion of the document, therefore, not open for comment.
2	442	3.1.87	E	Images are then generated by deflections of the ink droplets after they are charged so they are either intercepted by a catcher and not permitted to impact the substrate or deflected to intercept the substrate at specific locations.	Images are generated by deflecting charged ink droplets either onto the substrate or into a catcher for re-use.	The statement is unnecessarily complicated.	This comment was not a redlined portion of the document, therefore, not open for comment.
3	449	3.1.88	T	A characteristic of an image such that it has all the values (0% to 100%) of gray (black and white) or color in it. A continuous tone can be approximated by the use of thousands or millions of gradations of black and white or colors.	A characteristic of a print, often photographic in nature, where a microscopic examination of the print yields an indiscernable number of distinct colors.	As presented, the definition is difficult to follow.	This comment was not a redlined portion of the document, therefore, not open for comment.
4	512	3.1.102	E	(SWGDOC E06-13)	(ASTM F1857)	The ASTM document is the original source, not SWGDOC.	This comment was not a redlined portion of the document, therefore, not open for comment.
5	685	3.1.137	T	An imaging process that uses thermal dye ribbons with selected organic dyes, the imaging characteristics of which are different from pigment materials used in thermal transfer wax ribbons	An imaging process whereby solid organic dyes from a film or ribbon are vaporized, via sublimation, and diffuse across a gap onto a substrate	The original definition does not include key technical components of the printing technology.	This comment was not a redlined portion of the document, therefore, not open for comment.
6	879	3.1.178	T	An ink that will run and/or stain when it comes in contact with water or any aqueous type of solution	An ink that will run and/or stain when it comes in contact with a liquid such as an aqueous or organic solvent	Fugitive inks do not have to be only water/aqueous sensitive.	This comment was not a redlined portion of the document, therefore, not open for comment.
7	941	3.1.192	T	Print process in which a series of dots of variable diameter and regular interdot spacing is used to print photographs and drawings	A print process which uses a series of microscopically discernable dots from a fixed number of colors, typically 4 to 6, to represent a large color range	The AM/FM modulation is not specific to half-toning.	This comment was not a redlined portion of the document, therefore, not open for comment.
8	1218	3.1.252	T	The inability to distinguish between ink samples at a given level of analysis	Change term to "Chemically indistinguishable"	Match is no longer a preferred term for ink analysis. The preferred term is chemically indistinguishable.	This comment was not a redlined portion of the document, therefore, not open for comment.
9	1222	3.1.253	T	The inability to distinguish between two or more samples at a given level of analysis	Change term to "Chemically indistinguishable"	Match is no longer a preferred term for ink analysis. The preferred term is chemically indistinguishable.	This comment was not a redlined portion of the document, therefore, not open for comment.
10	1505	3.1.319	T	A printing technique that combines different color inks to produce a subtle transition between colors	A security printing technique that combines different ink colors, using a split ink fountain of a conventional printing process, to produce a subtle, continuous transition between the blended colors	The definition, as written, could include half-tone reproductions using CMYK.	This comment was not a redlined portion of the document, therefore, not open for comment.
11	1858	3.1.398	T	A two-stage printing method in which a resinous powder adheres to a wet ink. After heating, the compound rises to resemble raised or engraved printing	A post-printing technique where a resinous powder is adhered to a wet ink previously applied using a conventional printing process. After heating, the mound of resinous powder melts to create a raised feel to the printed areas	Thermography, as described, is a finishing technique.	This comment was not a redlined portion of the document, therefore, not open for comment.