IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

BLUE SPIKE, LLC, *Plaintiff,* v. TEXAS INSTRUMENTS, INC., et al., *Defendants.*	§ § § § § § § § § § §	Civil Action No. 6:12-cv-499-MHS-CMC

MEMORANDUM OPINION AND ORDER

The above-referenced case was referred to the undersigned United States Magistrate Judge for pre-trial purposes in accordance with 28 U.S.C. § 636. Before the Court are Plaintiff's Opening Claim Construction Brief (Dkt. No. 1700), and Defendants' response (Dkt. No. 1751), Plaintiff's reply (Dkt. No. 1776).[1] Also before the Court are the parties' Local Patent Rule ("P.R.") 4-3 Joint Claim Construction and Prehearing Statement (Dkt. No. 1674) and P.R. 4-5(d) Joint Claim Construction Chart (Dkt. No. 1791).

A claim construction hearing, in accordance with *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996), was held in Tyler on October 1, 2014. After hearing the arguments of counsel and reviewing the relevant pleadings, presentation materials, other papers, and case law, the Court finds the disputed terms of the patents-in-suit should be construed as set forth herein.

[1] The parties also dispute whether a number of the terms are indefinite, and in the alternative, Defendants provided a construction for these terms. Thus, the Court also considered Defendants' Motion for Summary Judgment of Invalidity Based on Indefiniteness Under 35 U.S.C. § 112(b) and the related briefing (Dkt. Nos. 1752, 1785, 1803) when construing the disputed terms/phrases.

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I. BACKGROUND

Plaintiff brings suit alleging infringement of United States Patents Nos. 7,346,472 ("the '472 Patent"), 7,660,700 ("the '700 Patent"), 7,949,494 ("the '494 Patent"), and 8,214,175 ("the '175 Patent") (collectively, the "Asserted Patents"). The Asserted Patents are titled "Method and Device for Monitoring and Analyzing Signals" and share a common specification. The Asserted Patents generally relate to a method and system for monitoring and analyzing at least one signal.[2] The Asserted Patents describes a technique for identifying digitally sampled information, such as images, audio and video. '472 Patent at 4:42–43. The specification states that traditional methods of identification and monitoring of signals do not rely on "perceptual quality," but rather upon a separate and additional signal (i.e., "additive signal"). *Id.* at 4:43–46. The specification adds that one traditional, text-based additive signal is title and author information. *Id.* at 4:50–51. Thus, the specification states that if a book is being duplicated digitally, the title and author could provide one means of monitoring the number of times the text is being duplicated. *Id.* at 4:53–55.

The specification contrast the additive signal approach of the prior art to the approach of the present invention, which "is directed to the identification of a digital signal–whether text, audio, or video–using only the digital signal itself and then monitoring the number of times the signal is duplicated." *Id.* at 4:56–59. The specification states that this identification is

[2] The Abstract of the '472 Patent follows:

> A method and system for monitoring and analyzing at least one signal are disclosed. An abstract of at least one reference signal is generated and stored in a reference database. An abstract of a query signal to be analyzed is then generated so that the abstract of the query signal can be compared to the abstracts stored in the reference database for a match. The method and system may optionally be used to record information about the query signals, the number of matches recorded, and other useful information about the query signals. Moreover, the method by which abstracts are generated can be programmable based upon selectable criteria. The system can also be programmed with error control software so as to avoid the re-occurrence of a query signal that matches more than one signal stored in the reference database.

accomplished by receiving at least one reference signal to be monitored and creating an abstract of the reference signal. *Id.* at 2:64–66. The specification further describes storing the abstract of the reference signal in a reference database. *Id.* at 3:1–2. The specification then describes receiving at least one query signal to be analyzed and creating an abstract of the query signal. *Id.* at 3:2–3. The abstract of the query signal can then be compared to the abstract of the reference signal to determine if the abstract of the query signal matches the abstract of the reference signal. *Id.* at 3:4–7.

Plaintiff brings suit alleging infringement of claims 3, 4, 8, 11, and 12 of the '472 Patent, claims 1, 6, 7, 8, 10, 11, 40, 49, 50, and 51 of the '700 Patent, claims 1, 4, 5, 11, 17, 18, 20, 21, 22, and 29 of the '494 Patent, and claims 8, 11, 12, 13, 15, 16, and 17 of the '175 Patent. Claim 3 of the '472 Patent is representative of the asserted claims and recites the following elements (disputed terms in italics):

> 3. A method for monitoring and analyzing at least one signal comprising:
> receiving at least one *reference signal* to be monitored;
> creating an *abstract* of said at least one *reference signal*;
> storing the *abstract* of said at least one *reference signal* in a reference database;
> receiving at least one *query signal* to be analyzed;
> creating an *abstract* of said at least one *query signal*;
> comparing the *abstract* of said at least one *query signal* to the *abstract* of said at least one *reference signal* to determine if the *abstract* of said at least one *query signal matches* the *abstract* of said at least one *reference signal*;
> *creating at least one counter corresponding to one of said at least one reference signals*, said at least one counter being representative of the number of times a *match* is found between the *abstract* of said at least one *query signal* and the *abstract* of said at least one *reference signal*; and
> *incrementing the counter* corresponding to a particular *reference signal when a match is found* between an *abstract* of said at least one *query signal* and the *abstract* of the particular *reference signal*.

II. APPLICABLE LAW

A. Claim Construction

The claims of a patent define the invention to which the patentee is entitled the right to exclude. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). Claim terms are given their ordinary and customary meaning to one of ordinary skill in the art at the time of the invention, unless there is clear evidence in the patent's specification or prosecution history that the patentee intended a different meaning. *Id.* at 1312-13. Claim construction is informed by the intrinsic evidence: the patents' specifications and file histories. *Id.* at 1315-17. Courts may also consider evidence such as dictionary definitions and treatises to aid in determining the ordinary and customary meaning of claim terms. *Id.* at 1322. Further, "[o]ther claims, asserted and unasserted, can provide additional instruction because 'terms are normally used consistently throughout the patent.'" *SmartPhone Techs. LLC v. Research in Motion Corp.*, No. 6:10-CV-74-LED-JDL, 2012 WL 489112, at *2 (E.D. Tex. Feb. 13, 2012) (citing *Phillips*, 415 F.3d at 1314). "Differences among claims, such as additional limitations in dependent claims, can provide further guidance." *SmartPhone*, 2012 WL 489112, at *2.

A court should "avoid the danger of reading limitations from the specification into the claim[s]." *Phillips*, 415 F.3d at 1323. For example, "although the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments." *Id.* The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Id.* This is not only because of the requirements of Section 112 of the Patent Act, but also because "persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the

embodiments." *Id.* Limitations from the specification should only be read into the claims if the patentee "acted as his own lexicographer and imbued the claim terms with a particular meaning or disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction." *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (citations omitted); *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012).

Similarly, the prosecution history may not be used to infer the intentional narrowing of a claim absent the applicant's clear disavowal of claim coverage. *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (citations omitted). "To be given effect, such a disclaimer must be made with reasonable clarity and deliberateness." *Id.*

Guided by these principles of claim construction, this Court directs its attention to the Asserted Patents and the disputed claim terms.

B. Construction Indefiniteness

Title 35 U.S.C. § 112(b) articulates that patent claims must particularly point out and distinctly claim the invention. "Whether a claim meets this definiteness requirement is a matter of law." *Net Navigation, LLC v. Cisco Systems,* No. 4:11-cv-660, 662, 2012 WL 6161900, at *2 (E.D. Tex. Dec. 11, 2012) (citing *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1344 (Fed. Cir. 2007)). A party challenging the definiteness of a claim must show it is invalid by clear and convincing evidence. *Id.* at 1345.

The ultimate issue is whether someone working in the relevant technical field could understand the bounds of a claim. *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010). A claim is not indefinite merely because it poses a difficult issue of claim construction. *Exxon Research & Eng'g Co. v. U.S.*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

The Supreme Court has recently held that the definiteness requirement of 35 U.S.C. § 112 "require[s] that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus,* 134 S. Ct. at 2129. "The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable." *Id.*

"The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity." 35 U.S.C. § 282. A "determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Exxon,* 265 F.3d at 1376.

It is with these principles in mind the Court considers whether Defendants have demonstrated that the pleadings, affidavits, and other evidence available to the Court establish there are no genuine issues of material fact, and they are entitled to judgment as a matter of law on these specific issues. Fed. R. Civ. P. 56(c); *see Celotex v. Catrett,* 477 U.S. 317, 332 (1986).

III. LEVEL OF ORDINARY SKILL IN THE ART

It is well established that patents are interpreted from the perspective of one of ordinary skill in the art. *See Phillips,* 415 F.3d at 1313 ("[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application."). The Federal Circuit has advised that the "[f]actors that may be considered in determining the level of skill in the art include: (1) the educational level of the inventors; (2) the type of problems encountered in the art; (3) prior art solutions to those problems; (4) the rapidity with which innovations are made; (5) sophistication of the technology; and (6) education level of active workers in the field." *Env'tl Designs, Ltd. v. Union Oil Co. of California*, 713 F.2d 693, 696

(Fed. Cir. 1983). "These factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art." *Daiichi Sankyo Co. Ltd. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

Plaintiff proposes that a person of ordinary skill in the art would have a Master's degree in computer science or computer engineering, or equivalent experience, as well as two years experience in the field of digital fingerprinting and cryptography. (Dkt. No. 1700 at 7.)[3] In a related motion, Defendants submitted declarations of three experts, each of which opine on the level of ordinary skill in the art.[4] *See* Dkt. No. 1752-4 (Declaration of Kevin Bowyer, PH.D.); Dkt. No. 1752-6 (Declaration of John Snell); Dkt. No. 1752-8 (Declaration of Dr. Matthew Turk). Dr. Bowyer opines that a person of ordinary skill in the art would have at least a Bachelor's degree in Electrical Engineering, Computer Science, or an equivalent degree, with a background and at least two years' experience in the fields of signal or image processing, biometric identification, and/or related fields. (Dkt. No. 1752-4 at 7.) Mr. Snell opines that a person of ordinary skill in the art would have at least a Bachelor's degree in Electrical Engineering, Computer Science or an equivalent degree, with at least two years of signal or image processing experience. (Dkt. No. 1752-6 at 9.) Finally, Dr. Turk opines that a person of ordinary skill in the art would have at least a bachelor's degree in electrical engineering, computer science, or equivalent degree, with a background and at least two years' experience in signal processing, image processing, biometric identification, or a related field. (Dkt. No. 1752-8 at 8.)

Having considered the parties' proposals and the factors that may be considered in

[3] Unless otherwise indicated, all citations to documents filed with the Court are to the ECF page number assigned by the Court's filing system.

[4] The related motion is Defendants' Motion for Summary Judgment of Invalidity Based on Indefiniteness Under 35 U.S.C. § 112(b) (Dkt. No. 1752).

determining the level of skill in the art, the Court finds that a person of ordinary skill in the art would have at least a Bachelor's degree in electrical engineering, computer science, or equivalent degree, with a background and at least two years' experience in signal processing, image processing, biometric identification, or a related field.

IV. CONSTRUCTION OF AGREED TERMS

The Court hereby adopts the following agreed-upon constructions:

Term	**Patents / Claims**	**Agreed Construction**
"hashed abstract"	'700 patent, claims 11, 50; '494 patent, claims 21	"data that results from performing a Hash on an Abstract"
"perceptible characteristic"	'700 patent, claim 8; '494 patent, claims 5, 18	"characteristic perceived by a person"
"cognitive characteristic"	'700 patent, claim 8; '494 patent, claim 18	"characteristic understood by a person"
"subjective characteristic"	'700 patent, claim 8; '494 patent, claim 18	"characteristic perceived differently by different people"
"perceptual quality"	'700 patent, claim 8; '494 patent, claim 18	"quality perceived by a person"
"cognitive feature"	'494 patent, claims 5, 18	"a feature that is understood by a person"

Dkt. No. 1674 at 3.

The parties also agreed that the following terms do require construction and should be given their ordinary meaning as understood by a person of ordinary skill in the respective art:

- Digital reference signal abstract
- Query signal abstract
- Digital representation
- First digital reference signal abstract
- Signal
- Identifies
- Identifying
- Recording

- To be identified
- Digital representation of one of a plurality of different versions of a visual work and a multimedia work

Dkt. No. 1674 at 2.

During the claim construction hearing, the Court provided the parties with proposed constructions for the disputed terms/phrases. The parties agreed to the Court's proposed construction for the following terms:

Claim Term/Phrase	**Agreed Construction**
"digital"	plain and ordinary meaning
"cryptographic protocol"	"procedure for transforming data to secure it and enhance its uniqueness and identification"
"hash"	"a mathematical transform that maps a bit string of arbitrary length to a fixed length bit string to achieve uniqueness"
"reduced in size"	plain and ordinary meaning
"perceptual characteristics representative of parameters to differentiate between versions of the reference signal"	plain and ordinary meaning
"signal characteristic parameters configured to differentiate between versions of said reference signal"	plain and ordinary meaning
"signal characteristic parameters configured to differentiate between a plurality of versions of the reference signal."	plain and ordinary meaning
"signal characteristic parameters configured to differentiate between other versions of that one of said plurality of reference signals"	plain and ordinary meaning
"signal characteristic parameters that differentiate between said plurality of different versions of said visual work	plain and ordinary meaning

and said multimedia work"	
"reference database"	"a database containing abstracts of reference signals"
"recognizable characteristic"	"characteristic visually or aurally perceived by a person"
"a compare result"	plain and ordinary meaning

Regarding the term **"digital,"** the term appears in claims 11, 23, and 50 of the '700 Patent, claim 21 of the '494 Patent, and claims 1-14 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the term, as recited in the claims, is not confusing and is easily understandable by a jury. Moreover, the parties have not articulated a discernable dispute about the scope of this term. Accordingly, the Court agrees with the parties that the term **"digital"** should be given its **plain and ordinary meaning.**

Regarding the term **"cryptographic protocol,"** the term appears in claims 10, 11, 22, and 23 of the '700 Patent and claims 6, 20, and 21 of the '494 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the claim language generally recite applying a cryptographic protocol to the abstract of the reference signal. *See, e.g.*, '700 Patent, claim 22. The specification states the value of applying a "cryptographic protocol":

> The benefits of massive data reduction, flexibility in constructing appropriate signal recognition protocols and incorporation of cryptographic techniques to further add accuracy and confidence in the system are clearly improvements over the art. For example, where the data reduced abstract needs to have further uniqueness, a hash or signature may be required. And for objects which have further uniqueness requirements, two identical instances of the object could be made unique with cryptographic techniques.

'472 Patent at 10:45–50. The specification adds that "[i]n applications where the data to be

analyzed has higher value in some predetermined sense, cryptographic protocols, such as a hash or digital signature, can be used to distinguish such close cases." '472 Patent at 14:24–27. Thus, the claims and the specification are consistent with the arguments made by the patentee during prosecution that the prior art failed to "disclose cryptographic functions to enhance uniqueness and identification." (Dkt. No. 1751-6 at 22) ('700 FH Response to 5/30/2008 OA). Accordingly, the Court finds that the term should be construed to include this limitation.

Moreover, the IEEE Standard Dictionary of Electrical and Electronics Terms (6th Ed. 1997) defines "cryptography" as "the discipline embodying principles, means, and methods for the transformation of data in order to hide its information content, prevent its undetected modification, and/or prevent its unauthorized use." (Dkt. No. 1751-10 at 4.) This extrinsic evidence is consistent with the specification's statement that cryptographic techniques "further add accuracy and confidence in the system." '472 Patent at 10:48–50. For at least these reasons, the Court agrees with the parties that the term **"cryptographic protocol"** should be construed as **"procedure for transforming data to secure it and enhance its uniqueness and identification."**

Regarding the term **"hash,"** the term appears in claims 11, 23, and 50 of the '700 Patent, claim 21 of the '494 Patent, and claim 7 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the claim language generally recites "wherein the cryptographic protocol is one of at least a hash." *See, e.g.*, '700 Patent at Claim 11. Thus, the arguments made by the patentee during prosecution regarding "cryptographic protocol" apply equally here. (Dkt. No. 1751-6 at 22) ('700 FH Response to 5/30/2008 OA). This is consistent with the specification statement that "[i]n applications where the data to be analyzed has higher value in some predetermined

sense, cryptographic protocols, such as a hash or digital signature, can be used to distinguish such close cases." '472 Patent at 14:24–27. Furthermore, the Digital Signature Standard, Federal Information Processing Standards Publication defines a "hash function" as "a function that maps a bit string of arbitrary length to a fixed length bit string." (Dkt. No. 1751-11 at 13.) For at least these reasons, the Court agrees with the parties that the term **"hash"** should be construed as **"a mathematical transform that maps a bit string of arbitrary length to a fixed length bit string to achieve uniqueness."**

Regarding the phrase **"reduced in size,"** the term appears in claims 1, 5, 7-11, and 17-19 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. Defendants' original construction redrafted the claims to replace "reduced in size" with "compressed." Defendants argued that this was warranted because the specification only mentions compression to reduce the reference signals to abstract.

The Court finds that the specification does use the term compression, but it also refers to simply reducing the digital signal. For example, the specification states "[w]hile there are many approaches to data reduction that can be utilized, a primary concern is the ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version." '472 Patent at 3:52–57. This is very similar to the claim language and indicates that the patentees contemplated different approaches to data reduction. Indeed, dependent claim 10 of the '472 Patent recites that a "controller includes a means to adjust compression rates." This indicates that the patentees knew how to claim "compressed," if this was their intention. Accordingly, the Court agrees with the parties that the phrase **"reduced in size"** should be given its **plain and ordinary meaning.** To the extent that Defendants contend

that the plain and ordinary meaning limits "reduced in size" to "compressed," the Court rejects this argument.

Regarding the phrase **"perceptual characteristics representative of parameters to differentiate between versions of the reference signal,"** the phrase appears in claim 40 of the '700 Patent and claim 11 of the '494 Patent. The Court finds that the phrase is used consistently in the claims and is intended to have the same meaning in each claim. Regarding the phrase **"signal characteristic parameters configured to differentiate between versions of said reference signal,"** the phrase appears in claim 1 of the '494 Patent. Regarding the phrase **"signal characteristic parameters configured to differentiate between a plurality of versions of the reference signal,"** the phrase appears in claim 1 of the '700 Patent. Regarding the phrase **"signal characteristic parameters configured to differentiate between other versions of that one of said plurality of reference signals,"** the phrase appears in claim 29 of the '494 Patent. Regarding the phrase **"signal characteristic parameters configured to differentiate between other versions of that one of said plurality of reference signals,"** the phrase appears in claim 8 of the '175 Patent.

The parties originally disputed whether these phrases should be redrafted to replace "differentiate" with "distinguish," as Defendants proposed. The Court agrees with Defendants that the intrinsic evidence indicates that the patentee used the words "differentiate" and "distinguish" interchangeably. This is illustrated in the specification and in the prosecution history. *See, e.g.*, '472 Patent at 10:16–24 ("Each of such representations must have at least a one bit difference with all other members of the database to *differentiate* each such representation from the others in the database … The engine will identify those characteristics (for example, the differences) that can be used to *distinguish* one digital signal from all other digital signals that

are stored in its collection.") (emphasis added). However, the Court finds that the claim language is clear and is not persuaded that it should redraft the claims to replace "differentiate" with the term "distinguish."

Moreover, for the disputed term "abstract," the majority of the Defendants proposed a construction that included "differentiate," which they contend was taken directly from the portion of the specification that described the invention as a whole. (Dkt. No. 1751 at 9.) In addition, the Court's construction for the term "abstract" includes the word "differentiate," and is consistent with the wording of these disputed phrases. It would be confusing to include the term "differentiate" in the construction of "abstract," while at the same time removing the term "differentiate" from the actual claim language. Accordingly, the Court agrees with the parties that these phrases should be given its **plain and ordinary meaning.** To the extent that Defendants contend that the plain and ordinary meaning requires replacing "differentiate" with "distinguish," the Court rejects this argument.

Regarding the term **"reference database,"** the term appears in claims 1, 3, 6, 8, 9, 11, and 14 of the '472 Patent, claims 1, 18, 30, 34, and 35 of the '700 Patent, and claims 1, 3, 11, 21, 24, and 27-29 of the '494 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the claim language indicates that the "reference database" is a "database containing abstracts of reference signals." For example, claim 3 of the '472 Patent recites "storing the abstract of said at least one reference signal in a reference database." Similarly, claim 1 of the '700 Patent recites "a reference database that stores abstracts of each at least one reference signal." Likewise, claim 1 of the '494 Patent recites "at least one reference database for storing at least one abstract." Thus, the claim language indicates how a person of ordinary skill in the art would interpret this term.

Defendants' originally proposed that the construction should include a "predefined set." The Court finds that this language is unnecessary and could be confusing to a jury. The claim language only requires storing abstracts and there is no mention of a predefined set. In fact, "predefined signal set" appears only two times in the entire specification. While Defendants are correct that these two occurrences are in a paragraph that includes "the present invention," Defendants overlook that this paragraph is referring to the signal abstract. The Court has captured the critical features disclosed by this paragraph with its construction for the disputed term "abstracts." Moreover, the specification defines "the predefined signal set" as the object being analyzed, and not a "predefined set of reference signal abstracts," as Defendants contend. '472 Patent at 10:19–20 ("The predefined signal set is the object being analyzed.") Accordingly, the Court agrees with the parties that the term **"reference database,"** should be given its **plain and ordinary meaning.** To the extent that Defendants contend that the plain and ordinary meaning requires a "predefined set," the Court rejects this argument.

Regarding the term **"recognizable characteristic,"** the term appears in claims 8 of the '700 Patent and claims 18 of the '494 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the disputed term is one characteristic in a list of characteristics recited in the claims. The parties have agreed to the construction of the other terms in this list as generally perceived and understood by people. (Dkt. 1674 at 3.) In addition, the Court agrees with Defendants that the specification indicates that the term should be construed as "characteristic visually or aurally perceived by a person." *See, e.g.*, ('472 Patent at 14:58–61) ("Similar to the goals of a psychoacoustic model, a psychovisual model attempts to represent a visual image with less data, and yet preserve those perceptual qualities that permit a human to recognize the original visual

image."). For at least these reasons, the Court agrees with the parties that the term **"recognizable characteristic"** should be construed as **"characteristic visually or aurally perceived by a person."**

Regarding the phrase **"a compare result,"** the phrase appears in claim 11 of the '175 Patent. The Court finds that the phrase is unambiguous, is easily understandable by a jury, and requires no construction. The Court agrees with Plaintiff that there is no reason to limit the scope of the claim to "a match between two abstracts." The claim recites the comparison may be between a "plurality of digital reference signal abstracts." Accordingly, the Court agrees with the parties that the phrase **"a compare result"** should be given its **plain and ordinary meaning.** To the extent that Defendants contend that the plain and ordinary meaning requires "a match between two abstracts," the Court rejects this argument.

V. CONSTRUCTION OF DISPUTED TERMS

A. "abstract"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"abstract"	No construction Required In the alternative: "a summary" (Dkt. No. 1776 at 3)	**All Defendants (except Morpho Defendants)** "A data-reduced representation of a reference or query signal that is the smallest amount of data that can represent and differentiate two signals for a given predefined signal set and that retains a perceptual relationship with the original signal" **Morpho Defendants** Indefinite To the extent the Court finds this term is definite, Morpho proposes: "a reduction that preserves an aesthetic quality of the original signal"

1. The Parties' Position

The parties dispute whether the term "abstract" is indefinite, and if not indefinite, whether the term requires construction. Plaintiff contends that the term "abstract" is a central

component to each of the patents-in-suit, and as such the inventors went to great lengths to describe it thoroughly in the claim language and specifications. (Dkt. No. 1700 at 8.) Thus, according to Plaintiff, a separate construction is unnecessary because the term is sufficiently described in the intrinsic record. (Dkt. No. 1700 at 8.) Plaintiff further contends that "both independent and dependent claims alter the definition of this term, making a single definition impossible to achieve." (Dkt. No. 1700 at 8.) Plaintiff "urges the Court to let the patent speak for itself and refrain from construing 'abstract.'" (Dkt. No. 1700 at 8.)

Plaintiff further argues that Defendants' construction is inappropriate because it (1) unjustifiably redefines the term to resemble prior art, (2) narrows the term unnecessarily, and (3) is not consistent with all claims.[5] (Dkt. No. 1700 at 8.) Regarding Defendants' "data-reduced representation" proposal, Plaintiff argues that only the asserted claims in the '175 Patent specifically mention that abstracts are "data reduced." (Dkt. No. 1700 at 8.) Thus, according to Plaintiff, this would make the term redundant in the '175 claims. (Dkt. No. 1700 at 9.) Plaintiff also contends that it is conceivable that the abstract may even be larger than the signal from which it derived, and thus would not be a "data-reduced representation." (Dkt. No. 1700 at 9.)

Regarding Defendants' "smallest amount of data" proposal, Plaintiff argues that the phrase is not present in the intrinsic record and is inappropriate in this context. (Dkt. No. 1700 at 9.) Plaintiff further argues the specification indicates that creating a signal representation of the smallest size possible is not practiced in the current invention, because such representation tends to lose a perceptual relationship common to the abstracts taught in the Asserted Patent. (Dkt. No. 1700 at 9.)

[5] For the term "abstract," "Defendants" refers to the "majority group of Defendants," which is a separate from the other group of Defendants ("the Morpho Defendants.") (Dkt. No. 1751 at 11 n. 9.)

Regarding Defendants' "predefined signal set" proposal, Plaintiff argues that "abstracts" involve more than predefined sets of signals, and can include the ability to add new members to the set and compare signals on the fly. (Dkt. No. 1700 at 10.) Thus, according to Plaintiff, the abstract's ability to compare beyond a predefined signal set is one of its improvements on the prior art. (Dkt. No. 1700 at 10.) Regarding Defendants' "retains a perceptual relationship" proposal, Plaintiff argues that the phrase is unnecessarily limiting as indicated by the patentees' reservation of this definition for certain dependent claims. (Dkt. No. 1700 at 10.)

Turning to the Morpho Defendants' construction, Plaintiff argues that it is inadequate because it does not account for the abstract's purpose of comparing and differentiating between signals. (Dkt. No. 1700 at 11.) Regarding Morpho Defendants' "reduction" proposal, Plaintiff argues that the term is inappropriate for the same reasons it is in Defendants' construction. (Dkt. No. 1700 at 11.) Regarding Morpho Defendants' "aesthetic" proposal, Plaintiff argues that it is inadequate because the claim language does not indicate "aesthetic," and the term itself would require construction. (Dkt. No. 1700 at 11.)

Defendants respond that the specification never actually describes what constitutes an "abstract." (Dkt. No. 1751 at 9.) However, Defendants contend that the specification does provide a description that is a starting point. (Dkt. No. 1751 at 9) (citing '472 Patent at 10:9–19). Based on this, Defendants argue that the abstract's creation process starts with a predefined signal set, from which digitized signal representations are created. (Dkt. No. 1751 at 10.) Defendants argue that the goal of the creation process is to create abstracts that both: (1) represent the signals and (2) differentiate between the signals. (Dkt. No. 1751 at 10.) Defendants argue that to accomplish this goal, the process first determines the smallest set of data that can both represent the signals and differentiate between the signals. (Dkt. No. 1751 at 10.)

Defendants further argue that this description of the abstract creation process is consistent with the rest of the disclosure, which states that the goal of the invention is to reduce the data overhead in the abstract. (Dkt. No. 1751 at 10.) Defendants contend that the necessity of this data reduction is emphasized repeatedly throughout the specification. (Dkt. No. 1751 at 10–11.) Defendants further argue that the specification and prosecution history repeatedly confirm that the data in abstracts must retain a perceptual relationship to their original signal. (Dkt. No. 1751 at 11.) Defendants also argue that the patentees consistently argued to the patent examiner that an "abstract" requires a perceptual relationship to a signal from which it is derived. (Dkt. No. 1751 at 12–13.)

Defendants further argue that Plaintiff is wrong to assert that the term does not need to be construed, and in so doing, ignores the entire specification and prosecution history. (Dkt. No. 1751 at 13.) Regarding Plaintiff's criticism of their "data-reduced representation" proposal, Defendants argue that the same term must be construed consistently across all patents in the same family, and that a patentee cannot change the meaning of a term in a continuation patent. (Dkt. No. 1751 at 14.) Defendants further argue that no evidence support Plaintiff's assertion that the claimed "abstract" could be large that its representative signal. (Dkt. No. 1751 at 14.) Instead, Defendants argue that the specification and prosecution history stress that the abstract is a compressed/compact representation/data reduced version of an original signal. (Dkt. No. 1751 at 15.)

Regarding Plaintiff's criticism of their "smallest amount of data" proposal, Defendants argue that, contrary to Plaintiff's assertion, the phrase appears in the specification in the paragraph describing the "abstract" of the "present invention," and is defined as the point of novelty "over the art." (Dkt. No. 1751 at 15–16.) Defendants further argue that Plaintiff

mischaracterizes Defendants' position and the language of the specification defining "abstract." (Dkt. No. 1751 at 16.) Regarding Plaintiff's criticism of their "retains a perceptual relationship" proposal, Defendants argue that Plaintiff makes contradictory arguments in its brief. (Dkt. No. 1751 at 16.) Defendants further argue that Plaintiff's claim differentiation argument fails because the dependent claim that Blue Spike relies on for this argument ('494 Patent, Claim 18) does not discuss the definition of abstract at all, but instead relates to the nature of the original signal. (Dkt. No. 1751 at 16.) Regarding Plaintiff's criticism of their "predefined signal set" proposal, Defendants argue that without a predefined signal set, an abstract cannot be properly created because there is not a minimum data target that it must meet. (Dkt. No. 1751 at 17.)

Turning to the Morpho Defendants' response, this group of defendants argue that the term "abstract" is indefinite. (Dkt. No. 1751 at 18.) Specifically, the Morpho Defendants contend that the specification does not inform one of ordinary skill in the art with reasonably certainty as to the scope of the term "abstract," and the term has no accepted meaning to one of ordinary skill in the art. (Dkt. No. 1752 at 17.) The Morpho Defendants further contend that the only clear guidance from the specification pertains to what an "abstract" is not, and does not give any indication about what an "abstract" is. (Dkt. No. 1752 at 17–18) The Morpho Defendants further argue that the specification contains no explanation of what part of a reference signal or query signal appears in an "abstract," how much of that signal is used, how that "abstract" ultimately relates to its original signal, or how to determine any of these. (Dkt. No. 1752 at 18.)

The Morpho Defendants further argue that the specification confirms that the meaning of "abstract" is a moving target that shifts depending upon the unspecified "markets" or "applications" where the alleged invention might be deployed. (Dkt. No. 1752 at 18–19.) Thus, according to the Morpho Defendants, the broad range of possible applications, and the vague

descriptions of the relationship between abstracts and their original signals, one of ordinary skill in the art cannot tell with reasonable certainty what is claimed. (Dkt. No. 1752 at 19.) Finally, the Morpho Defendants argue that the Asserted Patents are indefinite because the scope of the claims is left to the subjective opinion of the person practicing the invention. (Dkt. No. 1752 at 19–20.)

In the alternative, the Morpho Defendants propose that the term means "a reduction that preserves an aesthetic quality of the original signal." (Dkt. No. 1751 at 18.) The Morpho Defendants agree with the other Defendants that an "abstract" must be less than the original signal, i.e., "a reduction." (Dkt. No. 1751 at 18.) The Morpho Defendants, however, disagree with the other Defendants that an "abstract" must be the smallest amount of data that can represent and differentiate two signals for a given predefined signal set. (Dkt. No. 1751 at 18.) Instead, the Morpho Defendants contend that an "abstract" "preserves an aesthetic quality of the original signal," based on a sentence from the specification. (Dkt. No. 1751 at 18) (citing '472 Patent at 7:3–14.

The Morpho Defendants further state that they agree with the other Defendants that the "perceptual" features of signals and their "abstracts" pervade the intrinsic record and were the primary feature that the patentee argued to distinguish the prior art. (Dkt. No. 1751 at 19.) However, they contend that some of the dependent claims narrow the abstract to having perceptual, cognitive, subjective, perceptible, and/or recognizable features, qualities, and/or characteristics of the underlying signal. (Dkt. No. 1751 at 19) (citing '700 Patent, column 8; '494 Patent, columns 5, 18). Thus, according to the Morpho Defendants, the doctrine of claim differentiation requires the term "abstract" to have a broader construction than perceptual, cognitive, subjective, perceptible, and/or recognizable features, qualities, and/or characteristics.

(Dkt. No. 1751 at 19.) The Morpho Defendants argue that their construction is the only one broad enough to encompass all of the dependent claims while remaining true to the intrinsic evidence. (Dkt. No. 1751 at 20.)

Plaintiff replies that the Asserted Patents describe an "abstract" as a summary of a signal. (Dkt. No. 1776 at 3.) Plaintiff contends that their there can be more than one summary for an original signal, and in certain dependent claims, additional limitations are added to the term "abstract" or summary to explain what those additional limitations are. (Dkt. No. 1776 at 3.) Plaintiff argues that the term "abstract" is further limited in various ways with additional modifiers such as "digital reference signal," "data-reduced," "perceptual," or countless other ways. (Dkt. No. 1776 at 3–5) Plaintiff contends that claim 11 of the '472 Patent emphasizes that the abstract, or summary of a signal, is based upon perceptual characteristics, whereas in contrast, claim 19 of the '175 Patent, emphasizes that the abstract is based on being reduced to a smaller size. (Dkt. No. 1776 at 5.)

Regarding Defendants' "data reduced" proposal, Plaintiff states that it agrees that one of the goals of the invention is to produce a data-reduced representation of a media sample. (Dkt. No. 1776 at 5.) However, Plaintiff argues that an overriding purpose of the invention is to provide the ability to efficiently match, distinguish, and analyze the similarities between two media samples. (Dkt. No. 1776 at 5.) Plaintiff argues that abstract (or a summary) that lost this comparing functionality would similarly lose its benefit. (Dkt. No. 1776 at 5.) Thus, according to Plaintiff, although data reduction is certainly a primary focus of an "abstract," it is not necessary and such importation of a limitation from the specification is impermissible. (Dkt. No. 1776 at 5.) Plaintiff argues that this is evidenced in the claims themselves, as none of the claims include a limitation that an abstract be reduced in size, except for claims 1, 5, 7, 8, 9–11, and 17–

19 of the ‘175 Patent. (Dkt. No. 1776 at 5.)

Regarding Defendants’ “smallest amount of data that can differentiate signals” proposal, Plaintiff argues that Defendants misread the passage they cited to. (Dkt. No. 1776 at 6) (citing ‘175 Patent at 10:12–16). Plaintiff contends that this passage does not instruct that the abstract itself must be the smallest size possible, and notes that the Morpho Defendants’ disagree with this construction as well. (Dkt. No. 1776 at 6.) Regarding Defendants’ “predefined signal set” proposal, Plaintiff argues that Defendants once again misconstrue the same passage of the specification by insisting that an abstract must be compared to a predefined set of reference signals. (Dkt. No. 1776 at 7.) Plaintiff contends that “predefined signal set” does not indicate a predefined set of reference signals, but instead is a set of points within a signal that can be compared. (Dkt. No. 1776 at 7.) Plaintiff argues that Defendants’ construction would render the “two digitized signal representations” redundant, and the passage nonsensical. (Dkt. No. 1776 at 7.) Plaintiff further argues that an abstract provides comparison capabilities beyond what would be available if it were only comparing against a predefined set of reference signals. (Dkt. No. 1776 at 7.) Finally, Plaintiff contends that the term in not indefinite.

2. Analysis

To begin its analysis, the Court first turns to the language of the claims, as it provides “substantial guidance as to the meaning of particular claim terms.” *Phillips*, 415 F.3d at 1313 (citing *Vitronics Corp.*, 90 F.3d at 1582). The term “abstract” appears in claims 1-14 of the ‘472 Patent, claims 1, 5-7, 9-11, 13, 18, 21-22, 24-25, 30-32, 35, 40, 43-46, and 48-50 of the ‘700 Patent, claims 1, 5-7, 11, 14-17, 19-21, 24, and 27-29 of the ‘494 Patent, and claims 1-19 of the ‘175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the claim language indicates that the recited “abstract” is a representation of a signal. *See, e.g.,* ‘472 Patent, claim 3 (“creating

an abstract of said at least one reference signal"); '700 Patent, claim 1 ("a first processor that creates an abstract of each reference signal input"); '494 Patent, claim 1 ("a first processor that creates an abstract of each reference signal"); '175 Patent, claim 8 ("wherein said at least one processor is programmed or structured to generate a digital reference signal abstract from a digital reference signal").

The claim language further indicates that the recited "abstracts" are created to compare and differentiate between different reference signals and query signals. *See, e.g.*, '472 Patent, claim 3 ("comparing the abstract of said at least one query signal to the abstract of said at least one reference signal to determine if the abstract of said at least one query signal matches the abstract of said at least one reference signal"); '700 Patent, claim 40 ("comparing an abstract of said received query signal to the abstracts stored in the database to determine if the abstract of said received query signal is related to any of the stored abstracts"); '494 Patent, claim 29 ("comparing a query signal abstract of said query signal with at least one abstract of said plurality of reference signal abstracts stored in said reference database"); '175 Patent, claim 11 ("wherein said at least one processor is programmed or structured to compare a digital query signal abstract to said plurality of digital reference signal abstracts stored in said database to generate a compare result"). Thus, the claim language indicates that the reference "abstract" is a representation of the reference signal that can be compared to the query "abstract" to differentiate between different query signals and different reference signals.

The specification further indicates that person of ordinary skill in the art would understand that the recited "abstract" is a data-reduced representation of the signal. The necessity of this data reduction representation is emphasized throughout the specification:

> While psychoacoustic and psychovisual compression has some relevance to the present invention, additional data reduction or massive compression is anticipated

by the present invention. It is anticipated that the original signal may be compressed to create a realistic or self-similar representation of the original signal, so that the compressed signal can be referenced at a subsequent time as unique binary data that has computational relevance to the original signal.
‘472 Patent at 7:40-48

As a general improvement over the art, the present invention incorporates what could best be described as “computer-acoustic” and “computer-visual” modeling, where the signal abstracts are created using data reduction techniques to determine the smallest amount of data, at least a single bit, which can represent and differentiate two digitized signal representations for a given predefined signal set. ‘472 Patent at 10:9-16

The challenge is to maximize the ability to sufficiently compress a signal to both retain its relationship with the original signal while reducing the data overhead to enable more efficient analysis, archiving and monitoring of these signals.
‘472 Patent at 9:47-51

The ability to massively compress a signal to its essence … where such compression is designed to preserve some underlying “aesthetic quality” of the signal…
‘472 Patent at 7:3-9

While there are many approaches to data reduction that can be utilized, a primary concern is the ability to reduce the digital signal in such a manner as to retain a “perceptual relationship” between the original signal and its data reduced version.
‘472 Patent at 3:52-55

The present invention creates a second database from the first database, wherein each of the stored audio signals in the first database is data reduced in a manner that is not likely to reflect the human perceptual quality of the signal, meaning that a significantly data-reduced signal is not likely to be played back and recognized as the original signal. As a result of the data reduction, the size of the second database (as measured in digital terms) is much smaller than the size of the first database, and is determined by the rate of compression.
‘472 Patent at 14:3-12

With greater compression rates, it is anticipated that similarity may exist between the data compressed abstractions of different analog signals …
‘472 Patent at 14:19-21

The present invention, however, involves the scanning of an image involving a sun, compressing the data to its essential characteristics (i.e., those perceptual characteristics related to the sun)….
‘472 Patent at 15:3-8

In addition, the specification and prosecution history indicate that a person of ordinary skill in the art would understand that the recited "abstract" must retain a perceptual relationship with the original signal. The specification states that "[w]hile there are many approaches to data reduction that can be utilized, *a primary concern* is the ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version." '472 Patent at 3:52–55. Similarly, the specifications adds that "[t]he challenge is to maximize the ability to sufficiently compress a signal to both retain its relationship with the original signal while reducing the data overhead to enable more efficient analysis, archiving and monitoring of these signals." '472 Patent at 9:47–51.

Moreover, the patentees distinguished the claims from the prior art based on the prior art failing to disclose this "perceptual relationship." Specifically, the patentees argued that claim 21 of the '700 Patent (which ultimately issued as claim 1 of the '700 Patent) was distinguishable from the prior art because the "[s]ignal abstracts retain a perceptual relationship with the signal from which it was created or derived." (Dkt. No. 1751-8 at 20) ('700 FH Response to 3/5/09 OA). The patentees made similar arguments in the '472 Patent's file history about pending claims that did not explicitly recite "a perceptual relationship" element. (Dkt. No. 1751-3 at 11) ('472 FH Response to 5/11/07 OA) ("Logan allegedly discloses additive information, the 'informational signal', having no relationship with the perceptual nature of the reference signal. The present invention(s) is not so limited."). Accordingly, the Court finds that the intrinsic evidence informs, with reasonable certainty, those skilled in the art about the scope of the term "abstract." Specifically, the Court finds that a person of ordinary skill in the art would understand that the recited "abstracts" are a data-reduced representation of a signal that retains a perceptual relationship with the signal and differentiates the data-reduced representation from

other data-reduced representations.

Turning to the parties' constructions, the Court disagrees with Plaintiff that the term does not require construction or that a single definition is impossible to achieve. As indicated above, the intrinsic evidence indicates how a person of ordinary skill in the art would understand the term as it used in the Asserted Patents. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir.2005) ("Because [Plaintiff's] patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents."); *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1460 & n.2 (Fed. Cir. 1998) (noting that it was proper to consider the prosecution histories of two related re-examination patents originating from the same parent, to determine the meaning of a term used in both patents)

Furthermore, the Court is not persuaded by Plaintiff's argument that the doctrine of claim differentiation forbids construing the term as a "data-reduced representation." As described above, and as recited in the Detailed Description of the Invention section, the specification states that data reduction was a "primary concern" of the invention's "ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version." '472 Patent at 3:52-56. Thus, the specification's emphasis on data reduction overcomes Plaintiff's claim differentiation argument. *Seachange Int'l, Inc. v. C-COR Inc.*, 413 F.3d 1361, 1368-1369 (Fed. Cir. 2005) (stating that claim differentiation is "not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history."); *see also Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed. Cir. 2000) (determining that any presumption arising from the doctrine of claim differentiation was overcome by the written description and prosecution history). Indeed, there

is no disclosure or indication that a person of ordinary skill in the art would understand the scope of the claims include an "abstract" that is "even larger than the signal from which it is derived," as Plaintiff contends. (Dkt. No. 1700 at 9.)

The same is true for Plaintiff's and the Morpho Defendants' claim differentiation argument regarding Defendants' "retaining a perceptual relationship" proposal. As discussed above, not only does the specification state that "retaining a perceptual relationship" was a "primary concern," but the patentees also argued that the claims was distinguishable from the prior art based on this feature. *See* '472 Patent at 3:52-56 ("a primary concern is the ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version.") Thus, the express description in the specification and the repeated affirmation during prosecution that "[s]ignal abstracts retain a perceptual relationship with the signal from which it was created or derived," overcomes the parties' claim differentiation doctrine. (Dkt. No. 1751-8 at 20) ('700 FH Response to 3/5/09 OA); *see Fantasy Sports Props. v. Sportsline.com*, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002) ("Claim differentiation serves best as a guideline, rather than a rule" and can be "overcome by …disclaimer of subject matter in the prosecution history.").

Moreover, the dependent claims that Plaintiff and the Morpho Defendants' rely on for this argument ('494 Patent, claim 18) does not appear to discuss the definition of an abstract at all. Claim 18 depends from claim 17, which recites "wherein at least one abstract comprises data describing a portion of the characteristics of its associated reference signal." Claim 18 further recites that "the characteristics of the reference signal being described comprise at least one of a perceptible characteristic, a cognitive characteristic, a subjective characteristic, a perceptual quality, a recognizable characteristic or combinations thereof." Thus, the claim relied

upon by Plaintiff and the Morpho Defendants does not relate to the definition of abstract, but instead appears to relate to the nature of the original signal. Moreover, the fact that an abstract comprises a "perceptual quality," or other characteristics, would not be inconsistent with that same abstract retaining a perceptual relationship with the original signal. Finally, Plaintiff appears to concede this point by arguing that "a perceptual relationship [is] common to the abstracts taught in the patents-in-suit." (Dkt. No. 1700 at 9.)

Regarding, Defendants' "smallest amount of data that can differentiate signals" proposal, the Court finds that this would potentially limit the claims to a preferred embodiment. The specification does indicate that "massive compression is anticipated by the present invention." '472 Patent at 7:40–43. However, "massive compression" does not necessarily equate to reducing the data to the "smallest amount of data that can differentiate signals." The specification does state that the representations "must have at least a one bit difference with all other members of the database to differentiate each such representation from the others in the database." '472 Patent at 10:16–18. But this is not a requirement for a one bit difference, which could be read as the "smallest amount data that can differentiate signals," instead it provides a minimum amount while at the same time allowing for more.

The specification further discusses that the "success or failure of an accurate detection of any given object may be flexibly implemented or changed to reflect market-based demands of the engine." '472 Patent at 9:27–31. Limiting the claims to the "smallest amount data that can differentiate signals" could exclude the contemplated flexibility. Likewise, the specification states that "[i]t is anticipated that the original signal may be compressed to create a realistic or self-similar representation of the original signal, so that the compressed signal can be referenced at a subsequent time as unique binary data that has computational relevance to the original

signal." '472 Patent at 7:44–48. This further confirms that an important aspect of the invention is that the original signal can be compressed or data-reduced and then later uniquely identified. Thus, the Court is not persuaded that the claims should be limited to only "smallest amount of data that can differentiate signals."

Regarding, Defendants' "predefined signal set" proposal, the Court finds that this is unnecessary and could be confusing to a jury. The claim language and the Court's construction captures the requirement of a reference signal being compared to a "predefined set of reference signal abstracts." *See, e.g.*, '472 Patent, claim 3 ("storing the abstract of said at least one reference signal in a reference database.") Moreover, the specification defines "the predefined set" as the object being analyzed, and not a "predefined set of reference signal abstracts," as Defendants appear to contend. '472 Patent at 10:19–20 ("The predefined signal set is the object being analyzed."). The Court's construction captures that the data-reduced representation of an original signal must be able to be differentiated from other data-reduced representations.

Finally, regarding the Morpho Defendants' "aesthetic" proposal, the Court finds that the construction is too broad. The proposal fails to capture the requirement that the data-reduced representation of an original signal retains a perceptual relationship with the original signal. Instead, it only requires preserving "an aesthetic quality of the original signal." Moreover, it is very likely that the term "aesthetic" would require construction. Indeed, the Morpho Defendants contend that the term is broad enough to "encompasses all of the narrower features of the dependent claims, including perceptual, cognitive, subjective, perceptible, and/or recognizable features, qualities, and/or characteristics of the underlying signal." (Dkt. No. 1751 at 20.) Thus, the Court does not adopt this aspect of the Morpho Defendants' construction.

3. Court's Construction

In light of the intrinsic evidence, the Court construes the term **"abstract"** to mean **"a data-reduced representation of a signal that retains a perceptual relationship with the signal and differentiates the data-reduced representation from other data-reduced representations."**

B. "match/matches/matched/matching"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"match" "matches" "matched" "matching"	No construction required	"match" - "an indistinguishable copy" "matches" - "is indistinguishable from " "matched" - "was indistinguishable from" "matching" - "indistinguishable"

1. The Parties' Position

The parties dispute whether the terms "match/matches/matched/matching" require construction. Plaintiff argues that the intrinsic record details the matching process, and thus, no construction is required. (Dkt. No. 1700 at 13.) Regarding Defendants' construction, Plaintiff argues that their construction of "match" as an "indistinguishable copy" does not capture the capabilities described in the claims and specifications, but instead is the 1-to-1 matching widely taught in the prior art. (Dkt. No. 1700 at 13.) According to Plaintiff, the 1-to-1 matching does not account for "versions," "index of relatedness," "similarity," etc. (Dkt. No. 1700 at 13.)

Defendants respond that the plain meaning of "match" in the field of computer searching and retrieval is an identical copy, and nothing in the specification departs from that ordinary meaning. (Dkt. No. 1751 at 20.) Defendants further argue that the patentees used "matching" to mean the identification of only those abstracts that have "indistinguishable differences," and that the claims are consistent with the ordinary meaning. (Dkt. No. 1751 at 20.) Defendants further argue that the goal of the invention described in the specification is always to get to the point where there is a 1-to-1 "match" according to the ordinary understanding of that term in the art.

(Dkt. No. 1751 at 21.) Defendants cite the specifications description of "recalibration" to support its 1-to-1 argument. (Dkt. No. 1751 at 21) (citing '472 Patent at 11:20–23).

Defendants further contend that the prosecution history confirms that the claim term "match" has the ordinary meaning proposed by Defendants. (Dkt. No. 1751 at 21.) Specifically, Defendants argue that the recalibration process was used during prosecution to overcome a prior art rejection. (Dkt. No. 1751 at 21) (citing 1751-4 at 5) ('175 FH Response to 10/24/11 OA) (discussing claim 107). Defendants argue that the amendment makes clear "match" means that two abstracts are indistinguishable. (Dkt. No. 1751 at 21.) Defendants also contend that the specification includes other means of ensuring that all abstracts in the database are distinguishable so that only one match is returned per query. (Dkt. No. 1751 at 22.)

Defendants further argue that Plaintiff provides no support for its position that abstracts "match a version of a signal to an original signal. They even match similar signals and indicated [sic] how and to what degree those signals are related." (Dkt. No. 1751 at 22.) Defendants argue that abstracts are nothing more than a set of data in which an abstract has different data than all other abstracts. (Dkt. No. 1751 at 22.) Defendants contend that a "version" is not a "match," and Plaintiff's discussion about "abstracts" and "versions" is irrelevant to the meaning of the term "match." (Dkt. No. 1751 at 22.)

Plaintiff responds that the claim language supports its position that "matching" does not mean "indistinguishable" as Defendants suggest. (Dkt. No. 1776 at 11.) Plaintiff argues that claim 11 of the '472 Patent demonstrates that two separate "matches" are compared to one another through an index of relatedness. (Dkt. No. 1776 at 11.) Plaintiff contends that if these two "matches" had to be identical matches as Defendants suggest, then the index would serve no purpose (Dkt. No. 1776 at 11.) Plaintiff further argues that Defendants' construction would

exclude disclosed embodiment. (Dkt. No. 1776 at 12.)

Plaintiff also argues that Defendants' discussion of recalibration is only one embodiment that applies in situations where identical matches are warranted. (Dkt. No. 1776 at 12.) Plaintiff contends that "recalibration" isn't a bad thing as Defendants suggest, "it is merely a way to obtain more accurate of time as additional information becomes available." (Dkt. No. 1776 at 12.) Finally, Plaintiff argues that Defendants' citation to the prosecution history does not support their construction because the patentees explained to the examiner that when two objects are "indistinguishable" that is referred to as a "collision of data" not as a match. (Dkt. No. 1776 at 13) (citing Dkt. 1751-4 at 4).

2. Analysis

The terms "match/matches/matched/matching" appear, in some form, in claims 1, 3-6, 8-9, and 11-14 of the '472 Patent, claims 1, 13, 18, and 30 of the '700 Patent, claims 1, 2, 24, and 27-29 of the '494 Patent, and claims 9, 10, 12, 13, and 15 of the '175 Patent. The Court finds that the terms are used consistently in the claims and are generally intended to have the same meaning in each claim. The Court further finds that the claim language indicates that a person of ordinary skill in the art would understand the terms are not limited to being only "indistinguishable," as Defendants propose. For example, as Plaintiff contends, claim 11 of the '472 Patent recites "wherein the comparing device identifies at least two abstracts in the reference database that match the abstract of said at least one query signal and an index of relatedness to said at least one query signal for each of said at least two matching abstracts." The Court agrees that if these two "matches" had to be identical matches as Defendants suggest, then the recited index would serve no purpose.

Likewise, the Court finds that the specification discloses multiple embodiments. One of these embodiments is the identical match that includes the recalibration process. Regarding this

process, the specification states the following:

> For instance, if an artist releases a second performance of a previously recorded song, and the two performances are so similar that their differences are almost imperceptible, then the previously selected criteria may not be able to differentiate the two recordings. Hence, the database must be "recalibrated" to be able to differentiate these two versions. Similarly, if the system identifies not one, but two or more, matches for a particular search, then the database may need "recalibration" to further differentiate the two objects stored in the database.

'472 Patent at 11:13–23. This is the embodiment discussed during the prosecution history that Defendants quote. The important aspect here is that the "recalibration" relates to the "selected criteria" in this embodiment. Here, the "selected criteria" is an identical match. However, this is not the case for other embodiments. For example, the specification describes the following additional embodiments:

> One such application for monitoring and analyzing visual images involves a desire to find works of other artists that relate to a particular theme. For example, finding paintings of sunsets or sunrises. A traditional approach might involve a textual search involving a database wherein the works of other artists have been described in writing. The present invention, however, involves the scanning of an image involving a sun, compressing the data to its essential characteristics (i.e., those perceptual characteristics related to the sun) and then finding matches in a database of other visual images (stored as compressed or even uncompressed data). By studying the work of other artists using such techniques, a novice, for example, could learn much by comparing the presentations of a common theme by different artists.
>
> Another useful application involving this type of monitoring and analyzing is the identification of photographs of potential suspects whose identity matches the sketch of a police artist.

'472 Patent at 14:65–15:15. In this embodiment, the specification describes that an abstract may be generated of an image of a sun, and then a search may be run to find "matches in a database of other visual images" by other artists. '175 Patent at 14:57. As indicated above, the specification further describes an embodiment where an abstract of a suspect's photograph may be compared against police sketches in search of "suspects whose identity matches the sketch of the police artist." '175 Patent at 14:62–65.

In both of these examples, the specification indicates that a match is not limited to an "indistinguishable" copy. Instead, the specification indicates that a match occurs when the abstracts share selected criteria. Indeed, the claims recite creating abstracts using selectable criteria. *See, e.g.*, '472 Patent, claim 9 ("a processor that creates an abstract of a signal using selectable criteria"), '175 Patent, claim 4 ("wherein said at least one processor is programmed or structured to select criteria to use for generating said digital reference signal abstract from said digital reference signal"). Likewise, the Abstract of the Asserted Patents states that "the method by which abstracts are generated can be programmable based upon selectable criteria." Moreover, nothing excludes applying the "recalibration" process (*i.e.*, adjusting the selected criteria) to the other disclosed embodiments.

Thus, the Court agrees with Plaintiff that the patentees did not make a clear and unmistakable disclaimer that would limit the scope of the claims to only "indistinguishable" copies. The Court further finds that based on the intrinsic evidence, a person of ordinary skill would understand that the term "match" means that the abstracts "share selected criteria." Finally, the Court has considered the extrinsic evidence submitted by Defendants and finds that it is consistent with one of the disclosed embodiments, but could potentially exclude other disclosed embodiments. Therefore, the Court is not persuaded by the extrinsic definition provide by Defendants.

3. Court's Construction

In light of the intrinsic evidence and extrinsic evidence, the Court construes the term **"match"** to mean **"share selected criteria,"** the term **"matches"** to mean **"shares selected criteria with,"** the term **"matched"** to mean **"shared selected criteria with,"** and the term **"matching"** to mean **"sharing selected criteria."**

C. "reference signal" and "query signal"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"reference signal"	"a signal that is being referenced"	"an uncompressed signal representing an entire work"
"query signal"	"a signal being monitored or analyzed"	"an uncompressed signal representing an entire work to be analyzed"

1. The Parties' Position

The parties dispute whether the terms "reference signal" and "query signal" must be an uncompressed signal representing an entire work, as Defendants propose. Plaintiff contends that a reference signal is a signal that is being referenced, and that a "query signal" is "a signal being monitored or analyzed." (Dkt. No. 1700 at 20.) Plaintiff further argues that requiring the signal to be uncompressed is not necessary, and that Defendants' construction would limit the Asserted Patents to uncompressed, raw images only, and nullify many of the embodiments. (Dkt. No. 1700 at 21.) Plaintiff further argues that Defendants' limitation of "representing an entire work" is too limiting, because there is no reason why a reference signal could not be a notable portion of a public speech, a key subset of a painting, or the chorus of a song. (Dkt. No. 1700 at 21.)

Defendants respond that their construction of "reference signal" reflects two important concepts that are emphasized in the specification of the Asserted Patents: (1) a reference signal represents an entire work and (2) a reference signal has not undergone compression. (Dkt. No. 1751 at 31.) Defendants argue that the specification defines "reference signal" as the work: "the creator's work itself is used as the monitoring signal." (Dkt. No. 1751 at 32) (citing '472 Patent at 6:50–51). Thus, according to Defendants, a reference signal cannot be a portion of a work because the patentee expressly defined "reference signal" as the entire work, and defined a portion of an entire work as an "object." (Dkt. No. 1751 at 32) (citing '472 Patent at 8:33–35, 11:47–48). Defendants further argue that Plaintiff's construction is flawed because it just

rearranges the words of the claims and provides no guidance for the term's meaning. (Dkt. No. 1751 at 33.) Defendants next argue that the specification also makes it clear that a reference signal has not undergone the compression that an abstract has undergone. (Dkt. No. 1751 at 33) (citing '472 Patent at 5:34–39).

Regarding the term "query signal," Defendants argue that like a "reference signal," a "query signal" is an uncompressed signal that represents an entire work. (Dkt. No. 1751 at 33.) Defendants argue that Plaintiff's construction is incorrect because it does not differentiate between a query signal and a reference signal. (Dkt. No. 1751 at 33.) Defendants also argue that a query signal differs from a reference signal because it is a signal that the claimed invention receives to be analyzed. (Dkt. No. 1751 at 33.) Defendants contend that Plaintiff's construction conflicts with the claim language and the specification because it uses monitor or analyze. (Dkt. No. 1751 at 33.)

Plaintiff replies that Defendants' constructions improperly import limitations from the specification. (Dkt. No. 1776 at 14.) Plaintiff argues that there is no support in the claim language or the specification that limits the signals to only "the entire work." (Dkt. No. 1776 at 14.) Plaintiff argues that Defendants ignore that an object can be portion of the signal. (Dkt. No. 1776 at 14.) Plaintiff next argues that Defendants' construction improperly limits the signal to being "uncompressed." (Dkt. No. 1776 at 14.) Plaintiff claims that uncompressed is a modifier of the term "signal" and the claim language demonstrates that signal appears with and without modifiers. (Dkt. No. 1776 at 14.) Plaintiff further argues that the word "compression" will very likely confuse the jury or require yet another claim construction of the term "compression" in the future. (Dkt. No. 1776 at 14.)

2. Analysis

The term "reference signal" appears in claims 1-9 and 11-14 of the '472 Patent, claims 1,

5, 10, 12-13, 40, and 43-49 of the '700 Patent, claims 1-5, 11, 14-20, 24, and 27-29 of the '494 Patent, and claims 1-4 and 6-19 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The term "query signal" appears in claims 1-9 and 11-14 of the '472 Patent, claims 1, 10, 12, 18, 40, 42-43, and 49 of the '700 Patent, claims 1, 11, 13-14, 20, 24, and 27-29 of the '494 Patent, and claims 5 and 11-16 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim.

The Court further finds that the claim language indicates that the "reference signal" exists separately from the "query signal," although it may be a copy of the "reference signal." *See, e.g.*, '472 Patent, claim 3 ("receiving at least one reference signal to be monitored … receiving at least one query signal to be analyzed.") Indeed, the specification discusses the problem with counterfeiting and unauthorized use of copies, and how the present invention can be used to identify "matches" between abstracts of signals. *See, e.g.*, '472 Patent at 4:26–32, 8:48–59. The claims further indicate that the "reference signal" and "query signal" are not the recited "abstract." *See, e.g.*, '472 Patent, claim 3 ("creating an abstract of said at least one reference signal … creating an abstract of said at least one query signal.") As discussed, the recited "abstracts" are "data-reduced representations" of the respective signals.

The specification further indicates that the "reference signal" is an "original signal." For example, the specification states "[w]hile there are many approaches to data reduction that can be utilized, a primary concern is the ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version." '472 Patent at 3:52–56. Likewise, the specification states that "[i]t is anticipated that the original signal may be compressed to create a realistic or self-similar representation of the original signal,

so that the compressed signal can be referenced at a subsequent time as unique binary data that has computational relevance to the original signal." '472 Patent at 7:44–48. Both of these citations describe the claimed relationship between "reference signal," which is the original signal, and the recited "abstract." Thus, the intrinsic evidence indicates that the "reference signal" is an original signal and the "query signal" is a second signal (*i.e.*, they are different signals).

However, neither the claims nor the specification require the original signal to be "uncompressed" or the "entire work" as Defendants contend. The Court is not persuaded that the specification explicitly defines "reference signal" as the "entire work." It is true that the specification states that a segmented portion of a "signal" is also referred to as an "object." '472 Patent at 8:31–39. But this statement neither "explicitly" defines the recited "reference signal," nor does it require the recited "reference signal" to be an "entire work." Instead, it notes that a "signal" can be thought of as "comprising a set of objects." "472 Patent at 8:34–35. And, as Plaintiff contends, the intrinsic evidence does not exclude one "signal" from being an "object" (*i.e.*, a segmented portion) of a larger "signal."

Likewise, the intrinsic evidence does not require the "reference signal" to be an uncompressed signal. The portion of the specification that Defendants cite to relates to one particular embodiment (*i.e.*, watermarks), and the specification states that this "*an example* of retaining a logical and perceptible relationship with the original uncompressed signal." '472 Patent at 5:37–39. Thus, the Court is not persuaded that it should limit the claims to one example. Instead, as discussed above, the intrinsic evidence requires that the "abstract" of the "reference signal" to be a "data-reduced representation of a signal." This does not mean that the "reference signal" or the "query signal" have to be "uncompressed signals," it only requires that

their respective "abstracts" are "data-reduced representations" of the respective signals.

Furthermore, Defendants' construction that a "query signal" is "to be analyzed" is unhelpful and duplicative of the claim language. For example, claim 3 of the '472 Patent recites "receiving at least one query signal *to be analyzed*." Similarly, Plaintiff's construction that a "query signal" is "a signal being monitored or analyzed," is duplicative of the claim language and unnecessary. Likewise, Plaintiff's construction that a "reference signal" is "a signal that is being referenced" does not provide any useful guidance. As discussed above, the intrinsic evidence identifies the "reference signal" as an "original signal" and the "query signal" as a "second signal."

Finally, the Court's construction is not intended to mean that an "original signal" cannot be a copy of another signal. Instead, it only indicates that the "reference signal" is a separate signal from the "query signal" or second signal, and is "original" to the abstract that is created from it. Thus, the Court's will clarify this point by construing "reference signal" as an "original or first signal."

3. Court's Construction

In light of the intrinsic evidence, the Court construes the term **"reference signal"** to mean **"original or first signal,"** and the term **"query signal"** to mean **"second signal."**

D. "a comparing device that compares" and "a device configured to determine if a query signal matches any one plurality of reference signals"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"a comparing device that compares/ a comparing device….that compares/ a comparing device for comparing"	Not governed by §112¶6	Means plus function. Function: comparing Structure: no structure or algorithm disclosed. -To the extent the Court determines this term is not means-plus-function, Defendants propose this term is indefinite. -To the extent the Court finds this term is not indefinite, Defendants propose: "A separate hardware component of the computerized system [that compares/for comparing/able to compare]".
"a device configured to determine if a query signal matches any one plurality of reference signals"	Not governed by §112¶6	Means plus function. Function: determine if a Query Signal matches any one plurality of Reference Signals Structure: no structure or algorithm disclosed. -To the extent the Court determines this term is not means-plus-function, Defendants propose this term is indefinite. -To the extent the Court finds this term is not indefinite, Defendants propose: "A separate hardware component of the computerized system configured to determine if a Query Signal Matches any one plurality of Reference Signals".

1. The Parties' Position

The parties dispute whether the disputed phrases are means-plus-function limitations governed by 35 U.S.C. §112 ¶ 6 (pre-AIA). In the alternative, Defendants contend that the phrases are indefinite, and if not indefinite, the phrases should be construed as "a separate hardware component of the computerized system." (Dkt. No. 1751 at 22.)

Plaintiff contends that the phrases are not governed by § 112 ¶ 6 because the terms do not use "means," and Defendants have failed to overcome the rebuttable presumption that § 112 ¶ 6 does not apply. (Dkt. No. 1700 at 15.) Plaintiff further argues that "where '[t]he record shows

that an ordinary artisan would have recognized the [claim term] as an electronic device with a known structure', there is sufficient disclosure." (Dkt. No. 1700 at 15) (quoting *Telcordia Techs., Inc. v. Cisco Sys., Inc.*, 612 F.3d 1365, 1376 (Fed. Cir. 2010)). To this end, Plaintiff argues that the specification indicates that the disputed phrases are not implicated by the means-plus-function statute. (Dkt. No. 1700 at 16) (citing '472 Patent at 8:55–9:10). Plaintiff further argues that these claim terms would have been well understood by one of skill in the art as indicated by multiple technical dictionary definitions. (Dkt. No. 1700 at 17.)

Defendants respond that disputed claim phrases "comparing device that compares," "a comparing device for comparing" and "device configured to determine" are governed by § 112 ¶ 6. (Dkt. No. 1751 at 24.) Defendants argue that they have overcome the rebuttable presumption that section 112 ¶ 6 does not apply to a claim limitation that does not use the term "means." (Dkt. No. 1751 at 24.) Specifically, Defendants argue that if the claim uses a generic term, such as "device," that is a substitute for the term "means for" carrying out some function. (Dkt. No. 1751 at 24) (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1360 (Fed. Cir. 2004)).

Defendants further argue that stating the device is for "comparing" or "configured to determine" does not change the analysis, as those words only indicate the function of the device (*i.e.*, the device is either comparing or determining). (Dkt. No. 1751 at 24.) Defendants also contend that the specification provides no insight into the meaning of "comparing device" or "device configured to determine," nor does it indicate that these terms are understood within the art to connote a known structure. (Dkt. No. 1751 at 24–25.) Thus, according to Defendants, section 112 ¶ 6 applies because the claims nakedly recites a "device" and the written description fails to place clear structural limitations on that "device." (Dkt. No. 1751 at 25.)

Defendants further contend that the claims are indefinite because the specification of the asserted patents fails to disclose any structure for performing the claimed function of comparing a query signal abstract to the reference signal abstracts in order to determine if a match exists. (Dkt. No. 1751 at 25.) Defendants argue that the only instance where "a comparing device" is discussed in the specification, the language merely rewords the function recited in the claim and says nothing about the "comparing device" structure that performs this function. (Dkt. No. 1751 at 25) (citing '472 Patent at 8:55–59).

Defendants further argue that Plaintiff's position that that one of ordinary skill in the art would nevertheless understand what a "comparing device" or "device configured to determine" may be fails as a matter of law. (Dkt. No. 1751 at 26.) Defendants next argue that Plaintiff's dictionary definitions are irrelevant and attenuated because they require one of skill to make the unwarranted leap to know that a "comparator" is the "comparing device" of the patents. (Dkt. No. 1751 at 26.) Finally, Defendants argue that the definitions provide no clear structure for a "comparator," let alone a comparing device, leaving one to guess whether a comparing device is software, hardware, logic, or a circuit. (Dkt. No. 1751 at 26.)

Plaintiff replies that "a comparing device" or "comparator" is a device that "compares two quantities and determines their equality." (Dkt. No. 1776 at 8)(citing Dkt. No. 1700 at 17–18). Plaintiff argues that Defendants have glossed over the intrinsic evidence and have failed to rebut Plaintiff's definition. (Dkt. No. 1776 at 8.) Plaintiff further argues that the specification is consistent with the use of the disputed term "a comparing device" or "comparator." (1776 at 8) (citing '175 Patent 3:32–60, 8:58–9:12, 9:20–40).

Regarding Defendants contention that section 112 ¶ 6 applies, Plaintiff argues that the case law cited by Defendants is not relevant or is readily distinguishable. (Dkt. No. 1776 at 8.)

Plaintiff argues that claim 11 of the '175 Patent illustrates that "a comparing device" does not require construction and is consistent with the use of the term "comparing device" in the specification that describes various setups of the comparator. (Dkt. No. 1776 at 8–9) (citing '175 Patent at 3:32–60, 8:58–9:12, 9:20–40).

Plaintiff further argues that the cited prior art indicates that a person of ordinary skill in the art would understand that a comparing device is also known as a "comparator," and that such devices are described in the Logan reference. (Dkt. No. 1776 at 9) (citing Dkt. No 1778, Logan Patent). Plaintiff further argues that the examiner not only mentioned the Logan reference in allowing claims to be issued, but even stated that the claims were being allowed over Logan because "Logan et al. do[es] not teach . . . a controller coupled to the first input, the processor, the comparing device, the reference database, and the storage medium, …") (Dkt. No. 1776 at 9) (citing Dkt. No.1776-4 at 5).

2. Analysis

The phrase "a comparing device that compares" or the phrase "a comparing device … that compares" appear in claims 9, 11, and 14 of the '472 Patent, claims 1 and 30 of the '700 Patent, and claims 1 and 24 of the '494 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The phrase "a comparing device for comparing" appears in claim 11 of the '494 Patent. The phrase "device configured to determine if a query signal matches any one plurality of reference signals" appears in claim 29 of the '494 Patent.

Contrary to Defendants' contention, the Court finds that the claims do not nakedly recite a "device." Instead, the claims recite a "comparing device" that "compares" or a "device configured to compare." Moreover, none of the asserted claims use "means" and Defendants have failed to overcome the rebuttable presumption that § 112 ¶ 6 does not apply. *Lighting*

World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) ("'[[A] claim term that does not use 'means' will trigger the rebuttable presumption that § 112 ¶ 6 does not apply.'") (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002)). As the Federal Circuit stated in *Lighting World*, "it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." *Id.* at 1359-60.

Here, the intrinsic and extrinsic evidence indicates that a person of ordinary skill in the art would understand "comparing device" as designating structure even if identifies the structure by its function. *Greenberg v. Ethicon Endo-Surgery*, 91 F.3d 1580, 1583 (Fed. Cir.1996) ("[T]he fact that a particular mechanism … is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)."). The specification states that the comparing device is able to compare the selected object using the features selected by the feature selector to the plurality of signals in the reference database to identify which of the signals matches the monitored signal. '472 Patent at 8:55–59. Likewise, claim 11 of the '472 Patent recites that "a comparing device" is coupled to a reference database and to "said second input."

Moreover, the prior art cited in the prosecution history indicates that a person of ordinary skill in the art would understand that the comparing device, also known as a "comparator," designates sufficient structure.[6] For example, the prior art states that "[t]he comparator can be

[6] Defendants argue that a person of ordinary skill would have to make an "unwarranted leap to know that a 'comparator' is the 'comparing device' of the patents." (Dkt. No. 1751 at 26.) The Court disagrees and finds that a person of ordinary skill in the art would understand that a "comparator" is a "comparing device." For example, the examiner rejected the claims of the '700 Patent based on Logan's disclosure of a comparator. (Dkt. No. 1751-5 at 7–8) (("With

[an] electrical circuit card assembly, a software program, or a combination of both. As will be explained in greater detail hereinafter, the comparator can employ known signal processing techniques that identify a signal by comparing the signal, to a library of known signals or signal characteristics." (Dkt. No. 1778 at 9 at 6:2–9.) Furthermore, the dictionary definitions cited by Plaintiff indicate how a person of ordinary skill in the art would understand the disputed phrases. For example, The Computer Glossary 72 (8th ed. 1998) defines "comparator" as "a device that compares two quantities and determines their equality." (Dkt. No. 1761-1 at 4.) Thus, the Court finds that a person of ordinary skill in the art would understand that the recited "comparing device" or a "device configured to compare" provides sufficient structure. *Greenberg v. Ethicon Endo-Surgery*, 91 F.3d 1580, 1583(Fed. Cir.1996) ("Many devices take their names from the functions they perform. The examples are innumerable ….")

In addition to this evidence, the examiner understood that the recited "comparing device" recited sufficient structure when the claims were allowed over the prior art because "Logan et al. do[es] not teach . . . a controller coupled to the first input, the processor, the comparing device, the reference database, and the storage medium, …") (Dkt. No. 1776-4 at 5) ('472 Patent – Notice of Allowability dated Sept. 19, 2007); *see also id.* at 6–7 ("Logan et al. do[es] not teach the comparing device identifying at least two abstracts in the reference database that match the abstract of said at least one query signal and an index of relatedness to said at least one query signal for each of said at least two matching abstracts."). Accordingly, Defendants have failed to overcome the presumption that § 112 ¶ 6 does not apply. Indeed, the presumption "is a strong

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respect to claims 21, 28, 30, 33, and 43, Logan et al. disclose an electronic system for monitoring and analyzing at least one signal, comprising: … a comparing device (comparator 50 shown on Fig. 2) that compares an abstract of said at least one query signal to the abstracts stored in the reference database to determine if the abstract of said at least one query signal matches any of the stored abstracts (see Abstract, lines 7-10; col. 2, lines and col. 8, line 39 to col. 9, line 6).").

one that is not readily overcome." *Lighting World, Inc.*, 382 F.3d at 1358.

Moreover, as discussed above, the intrinsic evidence informs, with reasonable certainty, those skilled in the art about the scope of the disputed phrase. In addition to the intrinsic evidence discussed above, the claim language itself informs those skilled in the art about the scope of the phrase. For example, claim 11 of the '472 Patent recites "a comparing device, coupled to said reference database and to said second input, that compares an abstract of said at least one query signal to the abstracts stored in the reference database to determine if the abstract of said at least one query signal matches any of the stored abstracts." Similarly, claim 1 of the '494 Patent recites "a comparing device that compares the created query signal abstract to the reference signal abstracts in the at least one database." Thus, the claims inform a person of ordinary skill in the art that the recited "comparing device" must at a minimum compare the recited "abstracts." Therefore, the Court finds that the phrases are not indefinite and should be given their plain and ordinary meaning.[7]

3. Court's Construction

In light of the intrinsic and extrinsic evidence, the Court finds that the phrases **"a comparing device that compares," "a comparing device … that compares," "a comparing device for comparing,"** and **"device configured to determine if a query signal matches any one plurality of reference signals"** are not indefinite. The Court further finds that the phrases do not require construction and will be given their **plain and ordinary meaning**.

[7] Defendants' brief presented an alternative construction of a "separate hardware component of the computerized system …." (Dkt. No. 1751 at 22.) Defendants, however, did not provide any arguments on why that construction should be adopted in light of the intrinsic and extrinsic evidence before the Court. Moreover, the Court finds that the disputed phrases are unambiguous, are easily understandable by a jury, and require no construction.

E. "versions of [a/the/said/"that one of said plurality of"] reference signals"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"versions of [a/the/said/"that one of said plurality of"] reference signal[s]"	No construction required.	"multiple variations of a particular Reference Signal"

1. The Parties' Position

The parties dispute whether the phrase "version of the reference signals," and its various iterations, require construction. Plaintiff contends that the phrases are best left defined by the claims and specifications. (Dkt. No. 1700 at 18.) Plaintiff argues that the intrinsic evidence notes that "version" may be a reference signal that is transformed during transport, such as a song transformed once played by CD, AM radio, or over the internet. (Dkt. No. 1700 at 18) (citing '175 Patent at column 13). Plaintiff also argues that a "version" of a reference signal may also refer to different formatting and/or compression schemes applied to the same song. (Dkt. No. 1700 at 19.) Plaintiff further contends that a "versions" may relate to a reference signal, such as a song, that is not derived from the signal itself per se. (Dkt. No. 1700 at 19.) Plaintiff provides the example of separate artists singing the same song. (Dkt. No. 1700 at 19) (citing '175 Patent at column 8). Thus, Plaintiff concludes that Defendants' construction is unnecessary and will likely confuse these phrases. (Dkt. No. 1700 at 19.)

Defendants respond that the asserted claims of the '494 and '700 Patents require differentiation among "versions" of "[the] reference signal." (Dkt. No. 1751 at 28.) Defendants argue that the "multiple of the former conjoined with the singular of the latter can only mean: 'multiple variations of a particular Reference Signal.'" (Dkt. No. 1751 at 28.) Defendants also contend that all of the disputed formulations—"the", "said", and "one of said plurality of"—

share the singularity of the "reference signal." (Dkt. No. 1751 at 28.) Defendants argue that these formulations recite "versions" in the plural, indicating that there are multiple versions. (Dkt. No. 1751 at 28.) Defendants argue that the specification itself equates "versions" with "variations." (Dkt. No. 1751 at 28)(citing '472 Patent at 3:63–4:2). Defendants contend that Plaintiff's "version" arguments are irrelevant because the claims do not merely require "versions," but require "versions of [the] reference signal." (Dkt. No. 1751 at 29.)

Defendants also argue that there is no evidence to support Plaintiff's proposition that a reference signal, as used in the asserted claims, can be a disembodied "original song" with no particular ability to be identified in its own right. (Dkt. No. 1751 at 29.) Defendants argue that the specification requires the "original song" to be recorded in a medium in order to be abstracted and analyzed. (Dkt. No. 1751 at 29) (citing '472 Patent at 4:56–59). Thus, according to Defendants, even if a reference signal did comprise an original song performed by an artist, the "versions of [that] reference signal" could only comprise variations of a particular recording—not the attenuated and unsupported example proposed by Plaintiff of the same lyrics sung by different artists. (Dkt. No. 1751 at 30.) Finally, Defendants argue that if a version need not even be derived from the signal itself, the term is further indefinite as subjective. (Dkt. No. 1751 at 30.)

Plaintiff's reply brief directed the Court to the arguments made in its opening claim construction brief for this term. (Dkt. No. 1776 at 15.)

2. Analysis

The phrase "versions of the reference signal" appears in asserted claims 1 and 40 of the '700 Patent and claim 11 of the '494 Patent. The phrase "versions of said reference signal" appears in asserted claim 1 of the '494 Patent. The phrase "versions of at least one reference signal" appears in claim 24 of the '494 Patent. The phrase "versions of that one of said plurality

of reference signals" appears in claim 29 of the '494 Patent. The Court finds that these phrases are unambiguous, are easily understandable by a jury, and no construction is needed.

Defendants' constructions redraft "version" to "multiple variations," and further requires the phrase to include a "particular" reference signal. Defendants' construction is more confusing than helpful. The claim language is clear and will be given its plain and ordinary meaning. To be sure, each "reference signal" has a corresponding "abstract," and each abstract provides differentiating between a plurality of versions of *the* reference signal. *See, e.g.*, '700 at claim 1. This does not mean that differentiating between the same lyrics sung by different artists is automatically excluded from the scope of the claims. It only means that it is not within the scope of these disputed phrases, as Plaintiff appears to contend.

3. Court's Construction

In light of the intrinsic evidence, the Court finds that the phrases **"versions of the reference signal," "versions of said reference signal,"** and **"versions of that one of said plurality of reference signals,"** are unambiguous, are easily understandable by a jury, and require no construction. Therefore, the phrases will be given their **plain and ordinary meaning**.

F. "similar to"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"similar to"	No construction required	Indefinite To the extent the Court believes that this term is not indefinite, then Defendants propose: "looks or sounds the same as"

1. The Parties' Position

The parties dispute whether the term "similar to" is indefinite. Plaintiff contends that the meaning of "similar to" is apparent on the face of the specification. (Dkt. No. 1785 at 24.)

Plaintiff argues that signal analysis (*i.e.*, abstract comparisons) "must maintain the ability to distinguish the perceptual quality of the signals being compared." (Dkt. No. 1785 at 24) ('175 Patent at 7:15–17). Thus, according to Plaintiff, distinguishing signals necessarily provides feedback regarding their similarity. (Dkt. No. 1785 at 24.) Plaintiff further argues that the specification explains that "abstracts are created using data reduction techniques to determine the smallest amount of data, at least a single bit, which can represent and differentiate two digitized signal representations." (Dkt. No. 1785 at 24) (quoting '175 Patent at 10:12–16). According to Plaintiff, these "at least a single bit" characteristics are distinguishing aspects of the reference signal, not arbitrary distinctions. (Dkt. No. 1785 at 24.) Thus, Plaintiff argues that an abstract remains similar to the signal from which it is derived and "maintain[s] the ability to distinguish the perceptual quality of the signals being compared." (Dkt. No. 1785 at 24) (quoting '175 Patent at 7:4–17).

Defendants respond that the claim language provides no guidance on the required degree of similarity. (Dkt. No. 1752 at 21.) Defendants further argue that the claims do not indicate what this term means with respect to the relationship between the digital reference signal and its digital reference signal abstract. (Dkt. No. 1752 at 21.) Defendants also argue that neither the specification nor the prosecution history of the '175 Patent provides guidance as to the meaning of this term. (Dkt. No. 1752 at 21.) Defendants further argue that the specification does not use the phrase "similar to" anywhere when describing the relationship between an abstract and a signal. (Dkt. No. 1752 at 21.)

Defendants also argue that the specification suggests the relationship between an original signal and its abstract is a subjective inquiry left to those practicing the invention. (Dkt. No. 1752 at 22) (citing '472 Patent at 9:61–65). Thus, according to Defendants, one skilled in the art

is left struggling to apply their subjective judgment to determine what degree of similarity is required by the claims and what features or aspects in signal processing, their perception, or the physical world might bear on that question. (Dkt. No. 1752 at 22.) Defendants further argue that it also unclear who or what determines this similarity. (Dkt. No. 1752 at 22) (citing '472 Patent at 9:55–59). Defendants conclude that because the relative "similarity" between an abstract and signal is subjective and wholly undefined, claims 8, 11 and 17 of the '175 Patent, and the claims that depend therefrom, are necessarily invalid as indefinite. (Dkt. No. 1752 at 23). In the alternative, Defendants propose that the term means "looks or sounds the same as." (Dkt. No. 1751 at 45.) Defendants argue that signals can only be perceived visually or aurally. (Dkt. No. 1751 at 45) (citing '472 Patent at 8:21–30, 10:9–11).

Plaintiff's reply brief directed the Court to the arguments made in its opening claim construction brief for this term. (Dkt. No. 1776 at 15.)

2. Analysis

The phrase "similar to" appears in claims 1, 3, 5, 7-11, and 17-19 of the '175 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. Claim 11 of the '175 Patent recites that "wherein said at least one processor is programmed or structured to generate a digital reference signal abstract from a digital reference signal such that said digital reference signal abstract is similar to said digital reference signal and reduced in size compared to said digital reference signal." Thus, the claims recite that the abstract is "similar to" the "reference signal," as well as "reduced in size."

Moreover, the specification and prosecution history further informs, with reasonable certainty, those skilled in the art about the scope of the phrase "similar to." In addition to being "reduced in size," the recited abstract is "similar to" the recited reference signal by retaining a perceptual relationship with the reference signal. The specification states that "[w]hile there are

many approaches to data reduction that can be utilized, *a primary concern* is the ability to reduce the digital signal in such a manner as to retain a 'perceptual relationship' between the original signal and its data reduced version." '472 Patent at 3:52–55. Similarly, the specifications adds that "[t]he challenge is to maximize the ability to sufficiently compress a signal to both retain its relationship with the original signal while reducing the data overhead to enable more efficient analysis, archiving and monitoring of these signals." '472 Patent at 9:47–51.

Furthermore, the patentees distinguished the claims from the prior art based on the prior art failing to disclose this "perceptual relationship." Specifically, the patentees argued that claim 21 of the '700 Patent (which ultimately issued as claim 1 of the '700 patent) was distinguishable from the prior art because the "[s]ignal abstracts retain a perceptual relationship with the signal from which it was created or derived." (Dkt. No. 1751-8 at 20) ('700 FH Response to 3/5/09 OA). The patentees made similar arguments in the '472 Patent file history about pending claims that did not explicitly recite "a perceptual relationship" element. *See* 1751-3 at 11 ('472 FH Response to 5/11/07 OA) ("Logan allegedly discloses additive information, the 'informational signal', having no relationship with the perceptual nature of the reference signal. The present invention(s) is not so limited."). Accordingly, the Court finds that the intrinsic evidence informs, with reasonable certainty, those skilled in the art about the scope of the phrase "similar to." Specifically, the Court finds that a person of ordinary skill in the art would understand that "similar to" means "retaining a perceptual relationship with."[8]

3. Court's Construction

In light of the intrinsic evidence, the Court construes the term **"similar to"** to mean

[8] The Court notes that the parties have agreed to the following constructions: "characteristic perceived by a person," "characteristic understood by a person," "characteristic perceived differently by different people," and "quality perceived by a person." (Dkt. No. 1674 at 3.) Thus, the parties agree that terms like "perceptual relationship" are not indefinite.

"retaining a perceptual relationship."

G. "creating at least one counter corresponding to one of said at least one reference signal & Incrementing the counter … when a match is found / first digital reference signal abstract match recorder"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"creating at least one counter corresponding to one of said at least one reference signal"	No construction required.	"creating an element used for counting, which corresponds to a particular Reference Signal"
"incrementing the counter …. when a match is found"	No construction required.	"increasing the value of the element used for counting when a match is found"
"first digital reference signal abstract match recorder"	No construction required.	"an element used for counting, which corresponds to a particular Abstract"

1. The Parties' Position

The parties dispute whether the phrases should be clarified to state that each "counter" (or "recorder") corresponds to one (and only one) reference signal and its associated abstract. Plaintiff argues the phrases do not require construction and that Defendants' constructions add the idea that "an element" is created and "used for counting." (Dkt. No. 1700 at 22.) Plaintiff argues that this is beyond the scope and purpose of the claim. (Dkt. No. 1700 at 22.) Plaintiff further contends that how the counter is created is not important, nor is it indicated in the specification. (Dkt. No. 1700 at 22.)

Defendants respond that when reading the terms in the context of the entire claim in which it is found, the phrase "one of said at least one reference signals [sic]" recited in claim 3 of the '472 patent (as well as the similar phrase "one of said plurality of reference signals" recited in claim 8 of the '472 patent) refers to only one reference signal, i.e., the particular reference signal. (Dkt. No. 1751 at 35.) Defendants further argue that the specification indicates that the "counter" is used for counting the number of times a reference signal has been detected as a result of comparing abstracts of query signals with the abstract of the particular reference signal.

(Dkt. No. 1751 at 36.) Thus, according to Defendants, only matches to the abstract of the particular reference signal are counted, not matches to any other abstract. (Dkt. No. 1751 at 36.)

Regarding claim 15 of the '175 Patents, Defendants make a similar argument and contend that when the phrase "first digital reference signal abstract match recorder . . . [records] a number of times said at least one processor determines a match between a digital query signal abstract and first [sic] digital reference signal abstract of said plurality of digital reference signal abstracts" is read in the entire context of the claim, the phrase "first digital reference signal abstract" indicates that the "match recorder" corresponds to only one particular abstract, i.e., the "first digital reference signal abstract." (Dkt. No. 1751 at 37.) Thus, according to Defendants, nothing in the intrinsic record, or in any extrinsic record, indicates that the "match recorder" corresponds to multiple abstracts. (Dkt. No. 1751 at 37.)

Plaintiff's reply brief directed the Court to the arguments made in its opening claim construction brief for this term. (Dkt. No. 1776 at 15.)

2. Analysis

The phrases "creating at least one counter corresponding to one of said at least one reference signal" and "incrementing the counter….when a match is found" appear in claims 3 of the '472 Patent. The phrases "creating at least one counter corresponding to one of said plurality of reference signals" and "incrementing the counter….when a match is found" appears in claim 8 of the '472 Patent. The phrase "first digital reference signal abstract match recorder" appears in claim 15 of the '175 Patent.

The Court finds that the claim language is unambiguous, is easily understandable by a jury, and the phrases require no construction. The Court agrees with Defendants that the intrinsic evidence indicates that each counter that is created increments "the counter corresponding to a particular reference signal when a match is found." This is the plain language

of the claims 3 and 8 of the '472 Patents. The language is clear and does not require rearrangement or adding an "element" as Defendants contend. To the extent that Plaintiff contends that a single counter can count matches for multiple references signals, the Court rejects such an argument. However, the claim language is clear that the scope of the claims are not limited to creating only one counter, but instead indicate that a counter can be created for each reference signal. *See, e.g.*, '472 Patent at claim 3 ("creating at least one counter").

3. Court's Construction

In light of the intrinsic evidence, the Court finds that the phrases "**creating at least one counter corresponding to one of said at least one reference signal," "creating at least one counter corresponding to one of said plurality of reference signals," "incrementing the counter….when a match is found,"** and **"first digital reference signal abstract match recorder"** are unambiguous, are easily understandable by a jury, and require no construction. Therefore, the phrases will be given their **plain and ordinary meaning**.

H. "selectable criteria"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"selectable criteria"	"criteria that is selectable"	"Rules available for selection, which create different Abstracts for a particular reference signal"

1. The Parties' Position

The parties dispute whether the term "selectable criteria" should be construed as "rules" for "different Abstracts for a particular reference signal." Plaintiff contends that the term "selectable criteria" can be succinctly construed as "criteria that is selectable." (Dkt. No. 1700 at 19.) Plaintiff argues that this definition allows for criteria that may affect the abstract, or may not. (Dkt. No. 1700 at 20.) Plaintiff further argues that the criteria may be complex rules or simple variable, and may be selected by the user. (Dkt. No. 1700 at 20.) Plaintiff further argues

that Defendants' construction places unnecessary limitations on the term. (Dkt. No. 1700 at 20.) Plaintiff contends that there is no indication in the record that the criteria must be rules rather than variable, or that the criteria must necessarily generate different abstracts. (Dkt. No. 1700 at 20.)

Defendants respond that the claim language explains that the processor uses "selectable criteria" to create an abstract. (Dkt. No. 1751 at 30.) Defendants argue that it necessarily follows that the abstract created by the processor will be different depending on which of the available criteria is selected. (Dkt. No. 1751 at 30.) Thus, according to Defendants, "selectable criteria" can only mean "rules available for selection, which create different abstracts for a particular reference signal." (Dkt. No. 1751 at 30.)

Defendants further argue the Plaintiff's construction does not actually define this term, it only rearranges the claim language. (Dkt. No. 1751 at 30.) Defendants contend that there is no support in the specification or in the prosecution history regarding criteria being selected by a user. (Dkt. No. 1751 at 31.) Defendants further contend that because the processor uses the "selectable criteria" to create the abstract, these criteria are in fact "rules" for the processor to apply, and the processor selects the rules to be applied. (Dkt. No. 1751 at 31) (citing '472 Patent at Abstract, 13:16–22).

Defendants next argue that the specification explains that "if an artist releases a second performance of a previously recorded song, and the two performances are so similar that their differences are almost imperceptible, then the previously selected criteria may not be able to differentiate the two recordings." (Dkt. No. 1751 at 31) (quoting '472 Patent at 11:14–18). Thus, according to Defendants, to make such a differentiation, different criteria must be selected to generate Abstracts that are different from those Abstracts that were created using the previously

selected criteria. (Dkt. No. 1751 at 31.)

Plaintiff replies that Defendants attempt to limit the criteria to "rules" is improper and is not supported by the claim language or the specification. (Dkt. No. 1776 at 13) (citing '472 Patent claims 9, 11, and Abstract). Plaintiff argues that the Abstract recites "[m]oreover, the method by which abstracts are generated can be programmable based upon selectable criteria." (Dkt. No. 1776 at 13.) Plaintiff contends that the patentees did not limit themselves to specific "rules" by the use of "can be programmable" as a modifier. (Dkt. No. 1776 at 13.) Finally, Plaintiff argues that Defendants are incorrect that an abstract will be different based on different criteria. (Dkt. No. 1776 at 13.)

2. Analysis

The term "selectable criteria" appears in claims 9 and 11 of the '472 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court further finds that the claim language recites that the processor "creates an abstract of a signal using selectable criteria." Thus, it is repetitive and unnecessary to include "which create different Abstracts for a particular reference signal" in the construction. Moreover, as Plaintiff notes, the specification states that "the method by which abstracts are generated can be programmable based upon selectable criteria." (Dkt. No. 1776 at 13) (quoting '472 Patent at Abstract). Likewise, the specification states that "means can be derived (and programmed for selectability) to recognize and distinguish these differences." '472 Patent at 13:20–22. Given that the specification discusses that criteria are "programmable" or "programmed," the Court finds that a person of ordinary skill would understand that the recited "selectable criteria" is "criteria that are programmable." The Court agrees with Plaintiff that the term should not be limited to specific "rules." The only mention of "rules" in the specification is regarding an embodiment that can increase efficiency based on the efficiency of the processing

hardware and/or software. '472 Patent at 10:41–46.

3. Court's Construction

In light of the intrinsic evidence, the Court construes the term **"selectable criteria"** to mean **"criteria that are programmable."**

I. "distributing at least one signal based on the comparison step"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"distributing at least one signal based on the comparison step"	No construction required.	"delivering at least one signal resulting from the comparison to multiple recipients"

1. The Parties' Position

The parties dispute whether the phrase "distributing at least one signal based on the comparison step" requires delivery to "multiple recipients." Plaintiff contends that this is another term that is self-explanatory, and that Defendants' construction adds no clarity. (Dkt. No. 1700 at 23.) Plaintiff further argues that there is no indication that "distribution" should be limited to delivery to "multiple recipients." (Dkt. No. 1700 at 23.)

Defendants contends that the specification envisions "methods for faster and more accurate auditing of signals as they are played, distributed or otherwise shared amongst providers (transmitters) and consumers (receivers)." (Dkt. No. 1751 at 37) (quoting '472 Patent at 6:67–7:3). Thus, according to Defendants, "distributing" means delivering of at least one signal to multiple recipients. Defendants also cite to the definition of "signal distributing" provided by the IEEE Standard Dictionary of Electrical and Electronics Terms (6th Ed. 1997)) (Dkt. 1751-10 at 6) ("signal distributing (telephone switching systems) Delivering of signals from a common control to other circuits.").

Plaintiff's reply brief directed the Court to the arguments made in its opening claim

construction brief for this term. (Dkt. No. 1776 at 15.)

2. Analysis

The phrase "distributing at least one signal based on the comparison step" appears in claim 22 of the '494 Patent. The Court finds that the phrase is unambiguous, is easily understandable by a jury, and requires no construction. The intrinsic and extrinsic evidence cited by Defendants does not support requiring the signal to be delivered to "multiple recipients."

3. Court's Construction

In light of the intrinsic and extrinsic evidence, the phrase **"distributing at least one signal based on the comparison step"** will be given its **plain and ordinary meaning**.

J. "related to"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"related to"	No construction required.	"Matches"

1. The Parties' Position

The parties dispute whether the term "related to" requires construction. Plaintiff contends that "related to" by definition implies similarity, not equality. (Dkt. No. 1700 at 14.) As an example, Plaintiff argues that the specification indicates that an abstract of the sun could be created by identifying essential characteristics of the sun (*i.e.*, those "characteristics related to" it). (1700 at 14) (citing '472 Patent at 15:2–8). According to Plaintiff, those characteristics are not the sun itself, but they share a connection with it, and other images would then be matched based on those related characteristics. (Dkt. No. 1700 at 14.) Plaintiff argues that this technique is far from the 1-to-1 matching taught in the prior art. (Dkt. No. 1700 at 14.)

Defendants argue that the Asserted Patents include no description of how one abstract can be "related to" another abstract. (Dkt. No. 1751 at 27.) Defendants argue that the only disclosure in the specification for comparisons of abstracts is for 1-to-1 matching and a match to

different versions of a reference signal using an "index of relatedness." (Dkt. No. 1751 at 27.) Thus, according to Defendants, the only way to potentially preserve the validity of the claims containing the term "related to" is to construe it to mean "matches." (Dkt. No. 1751 at 27.) Defendants also argue that claim is not enabled unless it is construed as "matches" because there is no support in the specification to identify how close something must be to be "related." (Dkt. No. 1751 at 27.)

Plaintiff replies that Defendants are mistaken that there is no support in the specification to identify something that is "close." (Dkt. No. 1776 at 10.) Plaintiff argues that Defendants ignore the entire second embodiment (citing '175 Patent at 14:39–15:4) and the description of abstracts of songs performed by different artists (citing '175 Patent at 7:4–34). (Dkt. No. 1776 at 10.) Plaintiff argues that two matches are further described by an index of relatedness that identifies just how similar they are to the original. (Dkt. No. 1776 at 10.) (citing '472 Patent, claim 11).

2. Analysis

The term "related to" appears in claim 40 of the '700 Patent and claim 11 of the '494 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same meaning in each claim. The Court finds that the disputed phrase "related to" should be construed the same at the disputed "match" terms. A comparison of the claims in the Asserted Patents indicates that it is used interchangeably with "matches." Indeed, the parties make the same arguments that they made to support the disputed "matches" term. Accordingly, for the reasons stated above for the disputed "match" terms, the Court finds the term should be construed as "shares selected criteria with."

3. Court's Construction

In light of the intrinsic evidence, the Court construes the term **"related to"** to mean

"shares selected criteria with."

K. "index of relatedness"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
index of relatedness	No construction required.	Indefinite

1. The Parties' Position

The parties dispute whether the term "index of relatedness" is indefinite. Defendants contend that the term is indefinite because there is no disclosure of what this term is, what it does, or how "relatedness" is measured. (Dkt. No. 1752 at 23.) Defendants further argue that the term "index of relatedness" has no specific meaning in the art, and is a subjective and relative term. (Dkt. No. 1752 at 23.) Defendants contend that "index of relatedness" is used in the patent to describe some type of relationship between a "query signal" and two "abstracts" in a database. (Dkt. No. 1752 at 23.) Defendants argue that the nature or extent of the "relatedness" between an abstract and a query signal is not described in the specification, nor how to measure it. (Dkt. No. 1752 at 23.) Defendants also argue that the terms "index" and "index of relatedness" do not appear in the patent beyond the claim, and that there is no specific meaning of the phrase "index of relatedness" in the art. (Dkt. No. 1752 at 23.) Thus, Defendants contend that one of ordinary skill in the art is left to apply their subjective judgment about what this term may mean. (Dkt. No. 1752 at 24.)

Plaintiff responds that "index of relatedness" describes a relationship between a query signal and two abstracts. Plaintiff argues that an "index" is an "indicator, sign, or measure of something." (Dkt. No. 1785 at 25) (citing Google Dictionary). Plaintiff also argues that at the time of the invention, "relatedness" meant "the state or condition of being related." (Dkt. No. 1785 at 25) (quoting Dkt. 1785-8 at 4) (Oxford English Dictionary (1989)). Plaintiff argues that the term "related" meant "having relation to, or relationship with, something else." (Dkt. No.

1785 at 25) (Dkt. 1785-9 at 4) (Oxford English Dictionary (1989)). Thus, according to Plaintiff, an "index of relatedness" in the context of the claims meant "a measure of the relationship between the signal and its abstract." (Dkt. No. 1785 at 25.) Plaintiff further argues that the specification goes to great lengths to describe the relationship between signal and abstract, a relationship that identifies distinguishing characteristics. (Dkt. No. 1785 at 25.)

Defendants reply that it is clear that even Plaintiff is uncertain what "index of relatedness" means. (Dkt. No. 1803 at 10.) Defendants argue that Plaintiff's entire argument is that "[t]he term is definite despite not appearing in the specification because it is framed by sufficient context." (Dkt. No. 1803 at 10.) Defendants further argue Plaintiff includes no citations, nor any indication at all, as to what that context is because none exists. (Dkt. No. 1803 at 10.)

2. Analysis

The disputed term "index of relatedness" appears in claim 11 of the '472 Patent. Claim 11 recites "wherein the comparing device identifies at least two abstracts in the reference database that match the abstract of said at least one query signal and an index of relatedness to said at least one query signal for each of said at least two matching abstracts." Thus, the claim language indicates that the comparing devices compares the query signal to each of the matching abstracts to determine an index of relatedness. Moreover, the specification discusses differentiating between two recordings and recalibrating the database to further differentiate between two objects stored in the database. '472 Patent at 11:13–24.

In this context, a person of ordinary skill in the art would understand the term "index of relatedness" to mean "an index that provides a degree of differentiation." Thus the "claims, viewed in light of the specification . . ., inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus*, 134 S. Ct. at 2129. Accordingly, for the reasons

stated above, the Court finds the term "index of relatedness" should be construed to mean "an index that provides a degree of differentiation."

3. Court's Construction

In light of the intrinsic and extrinsic evidence, the Court construes the term **"index of relatedness"** to mean **"an index that provides a degree of differentiation."**

VI. CONCLUSION

The Court hereby orders the claim terms addressed herein construed as indicated. Summary charts are attached below as Exhibit A (agreed terms) and Exhibit B (disputed terms).

The parties are further ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual constructions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the constructions adopted by the Court.

SIGNED this 16th day of October, 2014.

CAROLINE M. CRAVEN
UNITED STATES MAGISTRATE JUDGE

EXHIBIT A

Agreed Claim Term	**Construction**
"hashed abstract"	"data that results from performing a Hash on an Abstract"
"perceptible characteristic"	"characteristic perceived by a person"
"cognitive characteristic"	"characteristic understood by a person"
"subjective characteristic"	"characteristic perceived differently by different people"
"perceptual quality"	"quality perceived by a person"
"cognitive feature"	"a feature that is understood by a person"
"digital"	plain and ordinary meaning
"cryptographic protocol"	"procedure for transforming data to secure it and enhance its uniqueness and identification"
"hash"	"a mathematical transform that maps a bit string of arbitrary length to a fixed length bit string to achieve uniqueness"
"reduced in size"	plain and ordinary meaning
"perceptual characteristics representative of parameters to differentiate between versions of the reference signal"	plain and ordinary meaning
"signal characteristic parameters configured to differentiate between versions of said reference signal"	plain and ordinary meaning
"signal characteristic parameters configured to differentiate between a plurality of versions of the reference signal."	plain and ordinary meaning

"signal characteristic parameters configured to differentiate between other versions of that one of said plurality of reference signals"	plain and ordinary meaning
"signal characteristic parameters that differentiate between said plurality of different versions of said visual work and said multimedia work"	plain and ordinary meaning
"reference database"	"a database containing abstracts of reference signals"
"recognizable characteristic"	"characteristic visually or aurally perceived by a person"
"a compare result"	plain and ordinary meaning

EXHIBIT B

Disputed Claim Term	**Court's Construction**
"abstract"	"a data-reduced representation of a signal that retains a perceptual relationship with the signal and differentiates the data-reduced representation from other data-reduced representations"
"match"/"matches"/"matched"/"matching"	"match" – "share selected criteria" "matches" – "shares selected criteria with" "matched" – "shared selected criteria with" "matching" – "sharing selected criteria"
"reference signal"	"original or first signal"
"query signal"	"second signal"
"a comparing device that compares/ a comparing device….that compares/ a comparing device for comparing"	plain and ordinary meaning
"a device configured to determine if a query signal matches any one plurality of reference signals"	plain and ordinary meaning
"versions of [a/the/said/"that one of said plurality of"] reference signal[s]"	plain and ordinary meaning
"similar to"	"retaining a perceptual relationship"
"creating at least one counter corresponding to one of said at least one reference signal" / "creating at least one counter corresponding to one of said plurality of reference signals"	plain and ordinary meaning
"incrementing the counter….when a match is found,"	plain and ordinary meaning
"first digital reference signal abstract match recorder"	plain and ordinary meaning
"selectable criteria"	"criteria that are programmable"
"distributing at least one signal based on the comparison step"	plain and ordinary meaning

"related to"	"shares selected criteria with"
"index of relatedness"	"an index that provides a degree of differentiation"