

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

GRACENOTE, INC.,)	
)	
Plaintiff,)	
)	
v.)	C.A. No. 18-1608-RGA
)	
FREE STREAM MEDIA CORP.,)	
d/b/a SAMBA TV)	
)	
Defendant.)	

**DEFENDANT FREE STREAM MEDIA CORP.'S (d/b/a SAMBA TV)
OPENING BRIEF IN SUPPORT OF ITS MOTION TO
DISMISS FOR FAILURE TO STATE A CLAIM UNDER RULE 12(B)(6)**

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NATURE AND STAGE OF THE PROCEEDING

Gracenote, owned by Nielsen—the audience-measurement monopolist—seeks to stifle Samba’s innovative competitive technology with invalid patents. On October 17, 2018, Gracenote filed a complaint accusing Samba of infringing nine claims in four patents: U.S. Patent Nos. 9,066,114 (claims 1, 8, 10); 9,479,831 (claims 11, 24); 9,407,962 (claims 1, 8, 15); and 8,171,030 (claim 1) (respectively, “’114,” “’831,” “’962,” and “’030” patents). (D.I. 1 at ¶¶ 30, 62, 84, 109.) This motion seeks dismissal with prejudice of Gracenote’s Complaint because the asserted patents claim ineligible subject matter under 35 U.S.C. § 101.

INTRODUCTION

For centuries, families and friends have gathered for plays and concerts—and more recently, for television and radio programming. Most silently observe. But others, often because they are already familiar with the programming, offer commentary: about the director, the actors, or the scenes. Some react to the content in order to enhance it: a lawyer presenting an animation typically offers comments at preplanned moments; or a theater employee may need to adjust lighting or curtains at the conclusion of certain scenes. The process of recognizing parts of a video, song, or other content and reacting—either instantly or at a later time (*e.g.*, during a commercial break)—is not patentable. It is an abstract concept involving the three main stages of memory: processing, storage, and retrieval. *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014) (a “method of organizing human activity” is not eligible for patenting).

Gracenote’s patents claim abstract concepts without contributing any new inventive technology to achieve them. Instead, the claims merely use existing technologies—technologies Gracenote does not even claim to have invented—as tools to carry out the concepts. The ’114, ’831, and ’962 patent claims use identifiers, called fingerprints, to recognize portions of audio or video signals and trigger responsive actions at predetermined times during the playback, such as

providing information about a scene at its conclusion. The patents, however, do not purport to have invented fingerprints or even an improved fingerprinting technique. Using known fingerprinting technology as a tool to perform the abstract concept of signal recognition and reaction is patent-ineligible under 35 U.S.C. § 101.¹

Claim 1 of the '030 patent is patent-ineligible for similar reasons. Though the '030 patent is unrelated to the other three patents, it also uses fingerprints—in particular, video fingerprints, which it calls “robust hashes.” Claim 1 is directed to creating and then storing robust hashes in a database. “This type of activity, *i.e.*, organizing and accessing records through the creation of an index-searchable database, includes longstanding conduct that existed well before the advent of computers and the Internet,” for example, “hardcopy-based classification system[s]” that classify, “organize, and cross-reference” “books, magazines, or the like” “by certain identifiable tags” *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1327 (Fed. Cir. 2017). The claim, therefore, is invalid.

SUMMARY OF ARGUMENT

1. Under 35 U.S.C. § 101, abstract ideas are not patentable. *Alice*, 134 S. Ct. at 2354. The Supreme Court in *Alice* set forth a two-part “framework for distinguishing patents that claim” “abstract ideas from those that claim patent-eligible applications of those concepts.” *Id.* at 2355.

2. The asserted claims of the '114 and '831 patents fail at step one of *Alice* because they are directed to the abstract idea of recognizing portions of a multimedia signal and

¹ See *Elec. Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1351-52, 1355 (Fed. Cir. 2016) (finding that claims reciting an “interconnected electrical power grid” for receiving “data streams” were directed to a patent-ineligible concept because their focus is on “collecting information, analyzing it, and displaying certain results of the collection and analysis”); *Intellectual Ventures*, 850 F.3d at 1328 (using a specific type of encoded data—well-known “XML tags”—does not convert claims into a patent eligible invention).

performing actions in response at a specified time (*e.g.*, providing information about an actor appearing on screen just after the actor appears on the screen or during a commercial break).

3. The asserted claims of the '962 patent are directed to a subset of the abstract recognition concept of the '114 and '831 patents, and thus also fail at step one of the *Alice* framework. In order to recognize and react to portions of a movie or other multimedia content, those portions must first be committed to memory. The '962 patent is directed to storing the portions of the multimedia signal, along with a corresponding responsive action, in a database.

4. The claims of these three patents also fail at step two of *Alice* because they do not recite any inventive concepts sufficient to ensure that the patents amount to significantly more than the abstract concept. Instead, the claims use a known multimedia identifier (a “fingerprint”) and generic computer components (*e.g.*, a “processor” and a “database” comprising a two column lookup table shown in Fig. 4) to perform the same steps that a human performs when watching the same multimedia content. As a result, the asserted claims are invalid under 35 U.S.C. § 101, and the '114, '831, and '962 Patents should be dismissed from Gracenote’s Complaint with prejudice.

5. Claim 1 of the '030 patent also is invalid under 35 U.S.C. § 101. It is directed to the abstract concept of creating identifying data (a robust hash from a video) and storing and indexing the identifiers and other video information in a database. *Intellectual Ventures*, 850 F.3d at 1327. The claim requires that the hash be indexed in a particular type of database (in a “leaf node”). But the patent does not purport to have invented robust hashes or the claimed database structure. The patent’s use of these components as tools to implement the abstract concept of classifying, storing, and indexing data does not transform the method claim into a patent eligible process.

STATEMENT OF FACTS

I. '114, '831, and '962 Patent Background

The '114, '831, and '962 patents—which are related to one another and share a common specification—purport to be directed to the “current trend” of creating “interactive” “television viewing and/or music listening” experiences by providing information to the viewer during or after the playback of parts of the content. (D.I. 1-1, Ex. A, '114 patent at 1:22-32.)² For example, “at the appearance of an actor in a movie, some biographic data of the actor may be made available.” (*Id.* at 1:46-48.) One known way of accomplishing this interactivity was to include marks—such as watermarks—in the signal. (*Id.* at 1:63-2:34.) Detection of the marks during playback triggered responsive actions (*e.g.*, a mark inserted in the scene where an actor first appears triggers biographic data). (*Id.*)

Instead of using watermarks to trigger the responsive actions, the patents use another known technique: “fingerprints,” “also known as ‘(robust) hashes’.” ('114 patent at 3:20.) A fingerprint, which results from audio or video signal processing, is a representation of audio or video content that can be used to recognize future playbacks of the content.³ Processing signals to produce an identifier is not new; indeed, when a person watches a movie, they watch, process/encode, and store the encoded information in their minds.

Fingerprinting is not new either. The patents reference “known” fingerprint algorithms and fingerprint prior art. (*Id.* at 2, 4:53-60.) One of those prior art publications discloses that

² The '114, '831, and '962 patents share a common specification. Therefore, although all citations are to the '114 patent, the cited passages also appear in the '831 and '962 patents.

³ The patents state that a “fingerprint of a multimedia object/content/signal is a representation of perceptual features of the object/content/signal part in question. Such fingerprints are sometimes also known as ‘(robust) hashes’”. More specifically, a fingerprint of a piece of audio or video is an identifier which is computed over that piece of audio or video and which does not change even if the content involved is subsequently transcoded, filtered or otherwise modified.” ('114 Patent at 3:17-24.)

fingerprints can be used as an alternative to watermarks to identify audio or video content in order to “trigger” a “number of different responses” corresponding to the content. (Ex. A, Abstract and ¶¶ [0008], [0009], [0027].) Another discloses that the fingerprints can be used to identify short clips within a movie. (Ex. B at 121, 123.)⁴

That is how the patents use fingerprints. As illustrated below, reference fingerprints 102 are taken of the multimedia signal 101 ('114 patent, Fig. 1b); those reference fingerprints 102 (FP1, FP2, etc.) are indexed in memory and correlated to some corresponding action (A1, A2, etc.), ('114 patent, Fig. 4); then if that signal 101 is played again, fingerprints 104 are extracted and matched to the stored fingerprints, which triggers a corresponding reaction (e.g., providing biographical information). (*Id.* at 3:64-4:30, 5:43-6:24, 7:51-57.)

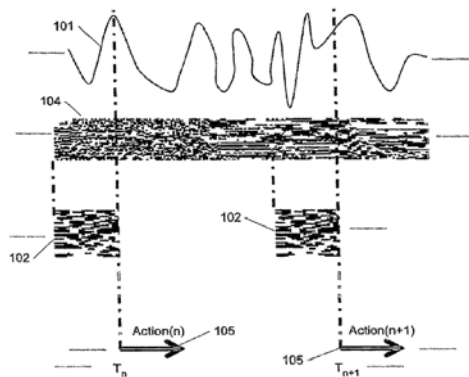


Figure 1b

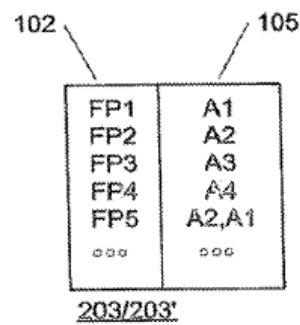


Figure 4

Creation of reference fingerprints 102 that can be matched with fingerprints 104

Storage of Fingerprints 102 in a table

The asserted claims are directed to these encoding, storage, retrieval, and reaction features. For purposes of this motion, claim 11 of the '831 patent is representative of most, if not

⁴ In deciding a Rule 12(b)(6) motion, a court may take judicial notice of the patents' prosecution histories, which are public records. *Sound View Innovations, LLC v. Facebook, Inc.*, 204 F. Supp.3d 655, 658-59 (D. Del. 2016). Exhibits A and B are prior art cited during the examination of the applications leading to the '114 patent ('114 patent at p. 2) and are therefore part of its prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc).

all, of the asserted claims:⁵

11. A method comprising:

playing back multimedia content on a multimedia play back device, including providing at least some of the multimedia content on a display associated with the multimedia playback device;

during the playback of the multimedia content by the multimedia playback device, repeatedly deriving, by the multimedia playback device, fingerprints from respective segments of the multimedia content;

comparing the derived fingerprints to reference fingerprints representing features of the multimedia content, each reference fingerprint associated with one or more actions;

determining that one of the derived fingerprints matches one of the reference fingerprints; and

in response to the determining that the one of the derived fingerprints matches the one of the reference fingerprints, causing execution of an action associated with the one of the reference fingerprints, the action being associated with a time point indicating when, in the multimedia content, the action is to be performed.

This claim uses fingerprints as tools to perform the abstract concept of recognizing and reacting to portions of the content at a specified time. Similar to how a person determines she has already viewed scenes from a movie, the claim recites that the multimedia signal is processed (into fingerprints) and then compared to previously processed signals (“reference fingerprints”) to determine if there is a match (steps [2]-[4]). If there is a match, the claim requires some unspecified action to take place at a specified time.

Claims 1, 8, and 10 of the ‘114 patent are similar. Like claim 11 of the ’831 patent, claim 1 of the ’114 patent uses fingerprints to recognize multimedia content, and if there is a match the claim requires some unspecified action to take place at a specified time, which this claim refers

⁵ Claim 11 is representative of at least asserted claims 1, 8, and 10 of the ’114 patent. It also is representative of claim 24 of the ’831 patent and claims 1, 8, and 15 of the ’962 patent. In the alternative, claim 24 of the ’831 patent can be treated as representative for claims 1, 8, and 15 of the ’962 patent.

to as a “trigger time point.” (’114 patent at 8:9-12.). The claim calls the fingerprints that are matched to previously-derived fingerprints “trigger fingerprints.” (*Id.*) Claim 10 of the ’114 patent is identical to claim 1, except it is directed to a “non-transitory machine readable storage medium” and it is not a method claim. Claim 8 is nearly identical, except it claims a system rather than a method and also adds a “fingerprint detector,” which appears to refer to a general purpose computer “that derives a fingerprint steam or segments thereof and determines if there are any matches with fingerprints stored in the database” (’114 patent at 7:33-37.)

In order to recognize and react to portions of a previously-viewed movie or other multimedia content—as occurs in claim 11 of the ’831 patent—those portions must first be processed and committed to memory. This is true irrespective of whether a fingerprint or the human mind is used to identify the content. In addition to using fingerprints as tools to recognize and react to portions of multimedia content (like claim 11 of the ’831 patent), claim 24 of the ’831 patent explicitly recites that the “reference fingerprints” used for the matching must first be created and associated with the corresponding reaction. The asserted claims of the ’962 patent are directed to this initial step of creating and storing reference fingerprints—and storing them in a database for later use.⁶

Although claim 11 of the ’831 patent does not explicitly recite the creation and storage of the reference fingerprints it uses to recognize content, it still is representative of the ’962 patent claims that do require this step because that creation and storage is a necessary and implied requirement for claim 11. But even if not, then claim 24 of the ’831 patent—which does explicitly recite the creation and storage of reference fingerprints and the corresponding

⁶ Claims 1, 8, and 15 are almost identical. Claim 1 is a method claim; claims 8 and 15 are directed to a system and non-transitory machine-readable medium, respectively.

actions—is representative of the '962 patent claims.⁷

II. '030 Patent Background

Though the '030 patent is unrelated to the other three patents in suit, it also is directed at identifiers for multimedia, which it refers to as “robust hashes.” ('030 patent at 15:32.) The sole claim asserted by Gracernote, claim 1, is a method claim directed to storing robust hashes and other data associated with a video in a database with “leaf nodes”:

1. A method of organization of a multi-dimensional video database using a robust hash of a multi-dimensional vector signature as a traversal index, the method comprising:
generation of a robust hash value as a traversal index from multiple parameters extracted from a region of interest in a frame of a video sequence; and
storing data associated with the video sequence at a leaf node addressed by the robust hash value, wherein the leaf node is a member of a plurality of leaf nodes in a multi-dimensional video database.

The claim includes a mere two steps: one involving the generation of the “robust hash value”; and one involving the storage of the hash value and other video data in “leaf nodes” in a database. As to the first step, like the other three patents in suit, the '030 does not purport to have invented “robust hash” identifiers for videos. Indeed, the '030 patent application’s filing date is June 18, 2008—several years after the filing of the original application that led to the issuance of the other three patents. Those patents explain that “fingerprints” are “also known as ‘(robust) hashes’.” ('114 patent at 3:20.) Though the first step includes language in addition to “robust hash” (*e.g.*, “multiple parameters”), Gracernote alleges that those features of the “hash” arise whenever a “video fingerprint” is generated to match content: “because video fingerprints are based on multiple parameters extracted from a region of interest in a frame of a video

⁷ Gracernote does not accuse Samba of infringing the remaining claims in those patents; but claims 8 and 24 of the '831 patent are representative of the remaining claims.

sequence, the Infringing Product generates a robust hash value from multiple parameters extracted from a region of interest in a frame of a video sequence.” (D.I. 1 at ¶ 111.)

As to the second step, the patent does not purport to have invented the storage of information in leaf nodes in a database. (’030 patent at col. 5:14-16 (referring to a “typical video database” as including “leaf nodes.”).

LEGAL STANDARDS

Because this Court is familiar with and has issued several opinions summarizing the standards for ruling on a Rule 12(b)(6) based patent ineligibility grounds, we do not provide an extensive legal summary. *See IPA Techs., Inc. v. Amazon.com, Inc.*, C.A. No. 16-1266-RGA, 2019 WL 259100, at **4-5 (D. Del. Jan. 18, 2019); *IPA Techs., Inc. v. Amazon.com, Inc.*, 307 F. Supp.3d 356, 360-62 (D. Del. 2018); *Sound View Innovations, LLC v. Facebook, Inc.*, 204 F. Supp.3d 655, 658-60 (D. Del. 2016). Instead, we focus on key principles relevant to patent eligibility, which is “a question of law suitable for resolution on a motion to dismiss.” *IPA*, 2019 WL 259100, at *4.

The Supreme Court set forth a two-step framework to distinguish patents claiming “abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. First, the Court determines whether the claims are directed to a patent-ineligible concept, such as an abstract idea. *Id.* A patent can be directed to an abstract idea even its claims include tangible features and are limited to a particular field or application.⁸

⁸ *See, e.g., Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1329 (Fed. Cir. 2016) (claims directed to virus screening); *In re TLI Commc’n s LLC Patent Litig.*, 823 F.3d 607 (Fed. Cir. 2016) (claims directed to collecting and storing information about a digital image and transmitting to a server where the information can be accessed by a user); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015) (avoiding data loss); *Affinity Labs of Texas, LLC v. Amazon.com, Inc.*, 838 F.3d 1266, 1269 (Fed. Cir. 2016) (delivering user-selected media content to portable devices).

Second, the court must decide whether the claims add an “inventive concept” transforming the claims into a patent-eligible application—“an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [concept] itself.’” *Alice*, 134 S. Ct. at 2355 (citation omitted). Unless these additional elements add something significant to the abstract idea, the claim is ineligible. *Id.* Implementing an abstract idea using well-known computer components or functions, limiting the idea to a particular technological environment, or adding other token steps, is insufficient. *Id.* at 2357-59; *see also, e.g., Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014). “In a situation where the specification admits the additional claim elements are well-understood, routine, and conventional, it will be difficult, if not impossible, for a patentee to show a genuine dispute.” *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1371 (Fed. Cir. 2018) (Moore, J.) (denial of rehearing en banc).

ARGUMENT

I. Gracenote’s ’114, ’831, and ’962 Infringement Claims Should Be Dismissed with Prejudice Because the Patents are Invalid under 35 U.S.C. § 101.

A. *Alice* Step One: The Claims Are Directed to an Abstract Idea.

Step one examines the claim to determine whether its “character as a whole” or “focus” is an abstract idea. *Elec. Power Group*, 830 F.3d at 1353. The inquiry examines whether the claims are directed to “‘a specific means or method that improves the relevant technology’ or are ‘directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.’” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016) (quoting *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016)).

Here, four asserted claims focus on the abstract idea of recognizing portions of a multimedia signal and performing actions in response at a specified time (*e.g.*, communicating

the names of the songs or actors in a scene, either during or after the scene). (*See* '831 patent, claim 11; '114 patent, claims 1, 8, and 10.) Three asserted claims are directed to a subset of this abstract concept: storing those portions of the multimedia signal and actions. (*See* '962 patent, claims 1, 8, and 15.)⁹ And one claim combines the two. (*See* '831 patent, claim 24).

All claims use known generic techniques to carry out the idea:

- Processing and Storage: Just as when a person sees or hears audio or video, the patents process the signals and store them as well as corresponding actions to take at a particular time. When done by a computer, the processing results in identifiers, called fingerprints.
- Recognition: Portions of incoming signals are matched to what is in memory.
- Reaction: If there is a match, some action is taken at a specified time.

(*See* '831 patent, claims 11 and 24.) The patents do not purport to have created a new technology for processing, recognizing, storing, or reacting to audio or video. They admit that fingerprints are “known,” and cite to prior art that uses fingerprints *to identify content and trigger reactions* in response to a match. ('114 patent at 2, 4:53-60; Ex. A, at Abstract, ¶¶ [0008], [0009], [0027]; Ex. B at 121, 123.)¹⁰ And they characterize the fingerprints as “algorithms.” *Elec. Power*, 830 F.3d at 1354 (“we have treated analyzing information . . . by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category”); *see also RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1326 (Fed. Cir. 2017)

⁹ *See* Statement of Facts section for a more detailed description of the claims. Claim 11 of the '831 patent is representative of most, if not all, of the claims—at a minimum, asserted claims 1, 8, and 10 of the '114 patent. Although claim 11 does not explicitly recite the creation and storage of the reference fingerprints it uses to recognize content, it still is representative of the '962 patent claims that do require this step because that creation and storage is a necessary and implied requirement for claim 11. But even if not, then claim 24 of the '831 patent—which does explicitly recite the creation and storage of reference fingerprints and the corresponding actions—is representative of the '962 patent claims.

¹⁰ The precise construction of “fingerprint” is not material to this motion because the patents admit that the fingerprinting described in the motion was known. The '114 patent describes features of a fingerprint at column 3, lines 17-24.

(claims “directed to the abstract idea of encoding and decoding image data” are ineligible).

As to the storage and matching of the fingerprints, and the triggering of reactions in response to a match, the patent specifications disclose an ordinary lookup table. (’114 patent at 7:5-17, Fig. 4 (reproduced below and to the right).) And the claims do not even specify that a generic lookup table even needs to be used.

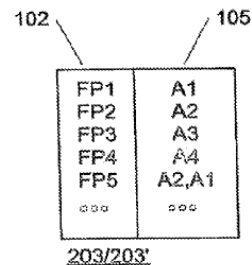


Figure 4

The Federal Circuit has repeatedly found similar claims invalid. In *Electric Power*, the claims focused on “collecting,” “analyzing,” and “displaying certain results of the collection and analysis.” *Elec. Power*, 830 F.3d at 1353. They also were directed to a narrow field: “real time” detection of events on “an interconnected electric power grid” *Id.* at 1351. The incoming “data streams” included “time stamped synchronized phasor measurements.” *Id.* Limiting the collecting, processing, and reacting steps to a particular environment (power grid) using particular “time-stamped” data streams did not convert the patent’s abstract concept into a non-abstract concept. *Id.* at 1353-54.

In *Content Extraction*, the claims related to extracting processed (digitized) data from paper documents, using that processed data to recognize portions of the paper documents, and storing that information in memory. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1345 (Fed. Cir. 2014). The Federal Circuit found the claims directed to the abstract idea of “1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory” to be abstract because “humans have always performed these functions.” *Id.* at 1347. Here, the asserted claims are similarly directed to recognizing certain data within a collected data set (*i.e.* “reference” fingerprints are derived to

identify portions of multimedia signals).¹¹

“Another helpful tool used by courts in the abstract idea inquiry is consideration of whether the claims have an analogy to the brick-and-mortar world, such that they cover a ‘fundamental ... practice long prevalent in our system....’” *Twilio, Inc. v. Telesign Corp.*, 249 F. Supp. 3d 1123, 1138 (N.D. Cal. 2017) (quoting *Alice*, 134 S. Ct. at 2356 and citing other cases); *see also Symantec Corp.*, 838 F.3d at 1317 (comparing ineligible email software program to a “brick-and-mortar” post office). The claims here do nothing more than use fingerprints and multimedia equipment as tools to perform the same concepts and tasks performed at theaters around the world for centuries:

Claim 11 of the '831 Patent	Theater
11. A method comprising:	
playing back multimedia content on a multimedia play back device, including providing at least some of the multimedia content on a display associated with the multimedia playback device	Shakespeare’s “Romeo and Juliet” is being performed at a local theater.
during the playback of the multimedia content by the multimedia playback device, repeatedly deriving, by the multimedia playback device, fingerprints from respective segments of the multimedia content;	A crew member responsible for raising and lowering the curtain watches the performance; the crew member’s mind processes and stores the information.
comparing the derived fingerprints to reference fingerprints representing features of the multimedia content, each reference fingerprint associated with one or more actions;	The crew member has been given instructions to lower the curtain at the end of certain acts and scenes, including at the end of the scene when Juliet dies.
determining that one of the derived fingerprints matches one of the reference fingerprints; and	Because the crew member has been to dress rehearsals and live performances, she recognizes the portions of the play that trigger the lowering of the curtain.
in response to the determining that the one of the derived fingerprints matches the one of the reference fingerprints, causing execution of an action associated with the one of the reference fingerprints, the action being associated with a time point indicating when, in the multimedia content, the	
	When Juliet dies in the play, the crew member recognizes the scene and lowers

¹¹ *See also In re TLI*, 823 F.3d at 611 (Fed. Cir. 2016) (classifying image data and storing it based on its classification is abstract under *Alice* step one); *Intellectual Ventures*, 850 F.3d at 1327 (use of a specific type of processed data—XML tags—to build a searchable database an abstract and patent ineligible concept).

action is to be performed.	the curtain.
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Claim 24 of the '831 patent is similar to claim 11, but it makes explicit what is implicit in claim 11: in order to match fingerprints, a reference fingerprint must be created. Again, these added limitations do nothing more than use known generic computing tools to perform the same concepts and tasks performed at theaters around the world for centuries:

Claim 24 of the '831 Patent	Theater
24. A method comprising:	
generating, by a processor, a plurality of reference fingerprints from respective segments of multimedia content, each of the reference fingerprints being associated with a corresponding action;	A crew member for a production of "Romeo and Juliet" is instructed to lower the curtain at the end of certain acts and scenes, including at the end of the scene when Juliet dies.
storing, by the processor, the plurality of reference fingerprints and the associations in a memory;	The crew member reads the script, attends rehearsals, and attends live performances of the play. As a result, the crew member's mind processes and stores the performance, including the portions of the play where she must lower the curtain. She associates those portions of the play with the instruction to lower the curtain.
<i>[Remaining limitations are not reproduced here because they are substantially similar to claim 11.]</i>	

Finally, the claims' inclusion of a few generic tangible components (*e.g.*, "playback device," "processor," "database") and focus on multimedia signals does not transform them into patentable subject matter. The Federal Circuit has "consistently held . . . that claims are not saved from abstraction merely because they recite components more specific than a generic computer." *BSG Tech. LLC v. Buyseasons, Inc.*, 899 F. 3d 1281, 1286 (Fed. Cir. 2018); *see also In re TLI Communications LLC Patent Litigation*, 823 F. 3d 607, 611 (Fed. Cir. 2016) (inclusion of "tangible components" that "merely provide a generic environment in which to carry out the abstract idea" do not save claims). Similarly, an "abstract idea does not become nonabstract by limiting the invention to a particular field of use or technological environment, such as the Internet." *Intellectual Ventures*, 850 F.3d at 1330.

B. *Alice* Step Two: The Claims Do Not Involve “Significantly More” That Would Render the Abstract Idea Patentable.

Because Gracenote’s patent claims are directed to abstract concepts, the Court must “determine whether [they] contain[] an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 134 S. Ct. at 2357 (citation omitted). Neither “generic” computer technology, nor “‘well-understood, routine, conventional’” or “‘purely functional’” elements can supply the required inventive concept. *Id.* at 2358-60 (citation omitted). The abstract “concept to which [the claimed invention] is directed” also “cannot supply the inventive concept” *BSG*, 899 F.3d at 1290. “It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept.” *Id.*

Nothing in the claims transforms their abstract concept—recognizing portions of a multimedia signal and performing actions in response at a specified time—into patentable subject matter. For example, the asserted claims collectively recite a mere five tangible components: a “multimedia playback device” (‘831 patent, claim 11; *see also* ‘114 patent, claims 1, 8, and 10 (“playback device”)); a “fingerprint detector” (‘114 patent, claim 8); a processor (‘114 patent, claims 1 and 8; ‘962 patent, claims 1, 8, and 15); “memory” (‘831 patent, claim 24); and a database (‘114 patent, claims 1, 8 and 10; ‘962 patent, claims 1, 8 and 15). The patents describe these general purpose machines in functional terms.

Specifically, Figure 3 shows a generic “schematic block diagram” of a “playback device,” and the corresponding description is in functional terms of receiving multi-media content (‘114 patent at 7:29-33), deriving/computing a fingerprint (*id.* at 7:33-34), determining if there any matches in the database (*id.* at 7:34-37); and performing the associated action. (*Id.* at 7:37-40.) The claims merely require that it “play[] back multimedia content” and derive

“fingerprints from respective segments of the multimedia content,” (‘831 patent, claim 11), or “perform[] a reference action that corresponds to the reference fingerprint.” (‘114 patent, claims 1, 8, 10) Nothing in the claims describes how the playback device performs any of these steps in a new or unconventional way. Similarly, the “fingerprint detector” is identified as part of the playback device. (*Id.* at 7:21-22.) It is also described functionally: it “derives a fingerprint stream or segments thereof and determines if there are any matches with fingerprints stored in the database as explained in connection with FIG. 1b. If a match is found then a representation of the associated action(s) is also retrieved.” (*Id.* at 7:33-38.) In the claims, it is merely “configured to determine a plurality of trigger fingerprints from content being played back on a playback device.” (‘114 patent, claim 8.) Neither the playback device nor the fingerprint detector is sufficiently inventive. *See In re TLI*, 823 F.3d at 614 (“telephone unit” and “server” not transformative because the components “simply provide[] the environment in which the abstract idea of classifying and storing digital images in an organized manner is carried out”). Such references to generic and existing multimedia identification technology cannot supply an inventive concept. *Apple, Inc.*, 842 F.3d at 1245 (finding claims that “refer[red] to the use of . . . voice capture technologies without providing how these elements were to be technologically implemented” were non-inventive).

The “processor” in the claims perform basic computer tasks, such as “determining,” “deriving,” “accessing,” “identifying,” and “performing” (‘114 patent, claims 1 and 8; ‘962 patent, claims 1, 8, and 15). Stating that a processor performs the functional steps that comprise an abstract idea is insufficient. *Elec. Power Grp.*, 830 F.3d at 1355 (computers, networks, and display components not inventive).

The database is a routine conventional database. It is shown in Figure 4 as a simple

lookup table. (*Id.* at 3:46-47, 7:8-10 (“As shown in FIG.4, the database (203) comprises fingerprints ‘FP1’, ‘FP2’, ‘FF3’, ‘FP4’, ‘FF5’, etc. and respective associated actions ‘A1’, ‘A3’, ‘A4’, ‘A2’, ‘A1’, etc.”).) In the claims, the database merely holds data and stores a relationship between two things (a reference fingerprint and an action), is accessed to update records and “obtain[]matches.” (‘114 patent, claims 1, 8 and 10; ‘962 patent, claims 1, 8 and 15). These are no more than the “performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Content Extraction*, 776 F.3d at 1347–48 (citation omitted).

Finally, deriving fingerprints for multimedia signals is routine and conventional process. (*Id.* at 3:19-20; 4:53-60.) The patent does not purport to provide—or more importantly, claim—an improvement to the conventional approaches, and instead references other patents for further description of those algorithms. (*Id.* at 6:29-42.) As noted above, the claim does not provide any detail about how the fingerprints are derived or how they are matched in the database.

The fingerprints also do not change or alter the recited database. The claims here are similar to those in *Intellectual Ventures*, where the Federal Circuit “fail[ed] to see how the patentee’s use of a well-known tag, *i.e.*, XML tag—to form an index—sufficiently transforms the claims into a patent eligible invention.” 850 F.3d at 1328. The court reasoned that, “[w]hile limiting the index to XML tags certainly narrows the scope of the claims, in this instance, it is simply akin to limiting an abstract idea to one field of use or adding token post solution components that do not convert the otherwise ineligible concept into an inventive concept.” *Id.* at 1328-29. Just as limiting the index to the use of XML tags was insufficient, so too is the limiting of the identifier to fingerprints of the multimedia signal insufficient to transform the claims here into an inventive concept.

C. The Claims Also Lack Any Inventive Ordered Combination.

Nor do the claims recite any inventive combination of steps or components. The recited

functional steps are inherent in the basic concept of recognizing a portion of a multimedia signal and performing an associated action. The portion of the multimedia signal must first be identified, then an action must be associated with it, and finally when the device is played back, the portion that is playing must be identified and compared to the portion that was previously stored and associated with the action. These steps are conventional both individually and as an ordered combination. And the concept of generic processors and databases being used to perform those functions is inherent in any computer or network configuration. There is nothing specific about the arrangement of these generic components in the claims. The Gracenote patents do not claim any inventive ordered combination. *Content Extraction*, 776 F.3d at 1348 (finding that “well understood, routine, and conventional activities commonly used in industry” do not provide an “inventive concept”). Gracenote’s patent claims fail step two of the *Alice* test.

II. Gracenote’s ’030 Infringement Claim Should Be Dismissed with Prejudice Because Asserted Claim 1 Is Invalid under 35 U.S.C. § 101.

Claim 1 is directed to the abstract concept of creating identifying data (a robust hash from a video) and storing and indexing the identifiers and other video information in a database.

Irrespective of whether the claims are limited to a certain field or type of data, the Federal Circuit has consistently found these types of claims to be abstract and patent ineligible.¹²

The claim also does not add an inventive concept sufficient to transform the claimed abstract idea into patentable subject matter. It includes only two steps:

1. Creating identifying data: by generating “a robust hash value as a traversal index

¹² See *Intellectual Ventures*, 850 F.3d at 1327 (claims directed to use of XML tags to create and index and use the index to search for and retrieve data); *In re TLI*, 823 F.3d at 611 (claims directed to classifying and storing digital images in an organized manner); see also *Elec. Power*, 830 F.3d at 1353 (claims directed to collecting, analyzing, and displaying results from real time collection of data streams containing “time stamped” measurements for “interconnected power grid[s]”); *Content Extraction*, 776 F.3d at 1347 (claims directed to data collection, recognition, and storage of digitized paper documents).

from multiple parameters extracted from a region of interest in a frame of a video sequence;” and

2. Storing and indexing: by “storing data associated with the video sequence at a leaf node addressed by the robust hash value, wherein the leaf node is a member of a plurality of leaf nodes in a multi-dimensional video database.”

(’030 patent, claim 1.)

The patent does not purport to have invented either robust hashes or a database with leaf nodes. Indeed, it was filed in 2008—years after the 2004 filing date of the application that led to the other three patents in suit. (See ’114 patent, cover page, under “Related U.S. Application Data.”) Those patents disclose “fingerprints,” which are “also known as ‘(robust) hashes’.”

(’114 patent at 3:20.) And those robust hashes are used to index associated information and actions—such as the presentation of information about the video, (’114

patent, at 3:64-67)—as illustrated in Figure 4 of the patents. Though the first step includes language in addition to “robust hash” (e.g., “multiple parameters”), Gracernote alleges in its Complaint that those features of the

“hash” arise whenever a “video fingerprint” is generated to match

content: “because video fingerprints are based on multiple parameters extracted from a region of interest in a frame of a video sequence, the Infringing Product generates a robust hash value from multiple parameters extracted from a region of interest in a frame of a video sequence.” (D.I. 1 at ¶ 111.) In short, nowhere in Gracernote’s complaint or its patent does it contend that the claimed “robust hashes” are anything but well-known. The use of known robust hashes to index data does not transform the claims into a patent-eligible invention. *Intellectual Ventures*, 850 F.3d at 1328 (“we fail to see how the patentee’s use of a well-known tag, i.e., XML tag—to form an index—sufficiently transforms the claims into a patent eligible invention.”).

As to the second step of the claim, the patent admits that a video database with leaf nodes

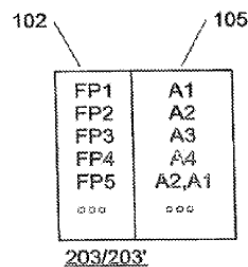


Figure 4

was known, stating that “typical video database is indexed as a hierarchy and the nodes of interest are traversed from top root to the *leaf nodes*.” (’030 patent at 5:14-16.) That database organization combined with the use of known robust hashes stored in the leaf nodes also does not convert the claims from abstract to patent-eligible. In *Intellectual Ventures*, the patentee argued that its particular database structure, which used a particular type of tag (XML tags) to navigate the index, “improves how computer databases function.” 850 F.3d at 1327. The Federal Circuit nevertheless found that “the recitation of an index employing XML tags to navigate a computerized database is simply not enough to transform the patent-ineligible abstract idea here into a patent eligible invention.” *Id.* at 1328.

Claim 1 fails both steps of the *Alice* test and are invalid.

CONCLUSION

For the reasons set forth herein, Samba respectfully requests that the Court dismiss Gracenote’s Complaint with prejudice.

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