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Paper 10
Entered: February 5, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU, INC.,
Petitioner,

v.

ANONYMOUS MEDIA RESEARCH HOLDINGS, LLC,
Patent Owner.

IPR2024-01056
Patent 10,572,896 B2

Before ELIZABETH M. ROESEL, FREDERICK C. LANEY, and MICHAEL T. CYGAN, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Roku, Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–11 of U.S. Patent No. 10,572,896 B2 (Ex. 1001, "the '896 Patent"). Anonymous Media Research Holdings, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2024); 37 C.F.R. § 42.4(a) (2024). An *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons that follow, we determine that Petitioner does not meet the reasonable likelihood standard, and we do not institute an *inter partes* review.

II. BACKGROUND

A. Related Matters

The parties identify the following civil actions as related matters: *Anonymous Media Research Holdings LLC v. Samsung Electronics Co. Ltd.*, No. 2:23-cv-00439 (E.D. Tex.); *Anonymous Media Research Holdings LLC v. Roku, Inc.*, No. 3:24-cv-04171 (N.D. Cal.). Pet. 86–87; Paper 9, 2 (Patent Owner's Third Updated Mandatory Notices).

B. Priority Date

The '896 Patent was issued February 25, 2020, based on an application filed May 3, 2019, that asserts the benefit of a series of nonprovisional applications, the earliest of which was filed May 26, 2005, and a provisional application filed May 27, 2004 (hereinafter "the 2004 provisional application"). Ex. 1001, codes (22), (45), (54), (60), (62).

Petitioner contends that the ’896 Patent claims are not entitled to priority based on the 2004 provisional application (Ex. 1007), and consequently, the earliest effective priority date is May 26, 2005. Pet. 1, 15. Patent Owner does not dispute Petitioner’s contention about the priority date. *See* Prelim. Resp. 7 n.1 (acknowledging that Patent Owner does not address the priority date of the ’896 Patent). For purposes of this Decision, we accept Petitioner’s contention about the priority date.

C. The ’896 Patent (Ex. 1001)

The ’896 Patent discloses a media usage monitoring and measurement system and method, including “a method in which play-altering activity of an audience member is deduced from content offset values of identifications corresponding to captured samples.” Ex. 1001, codes (54), (57).

Figure 1 is reproduced below.

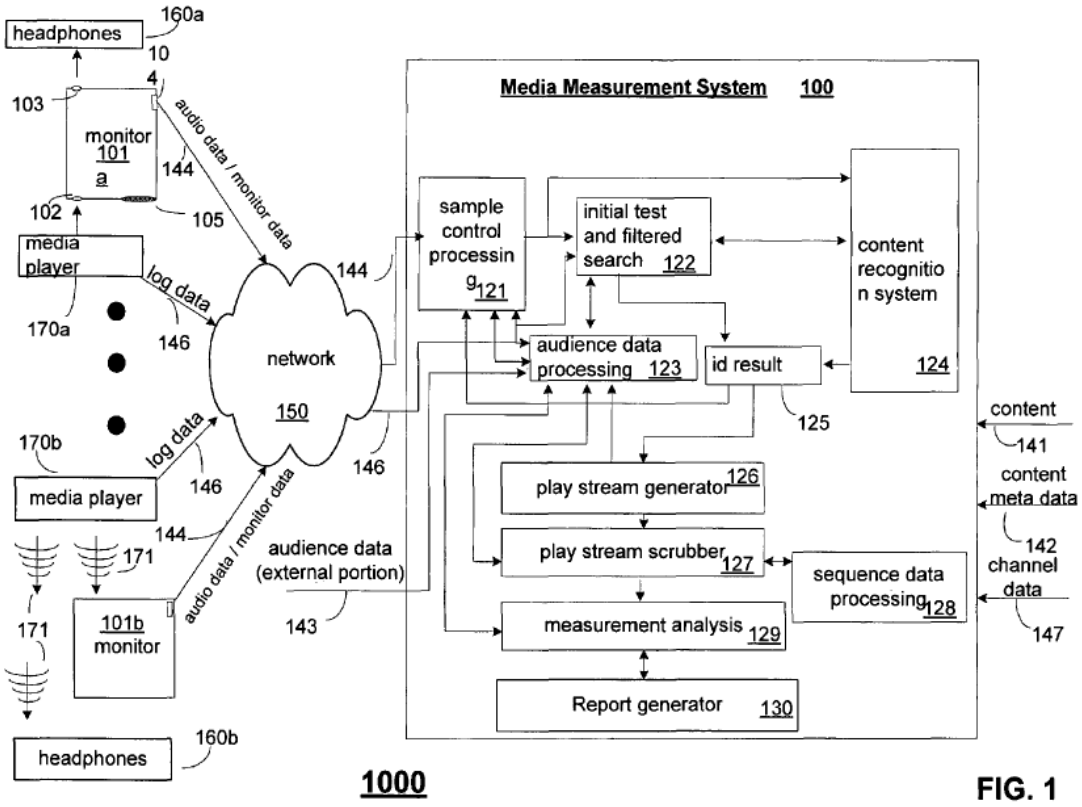

FIG. 1

Figure 1 shows a media usage monitoring and measurement system, including monitoring devices 101, which capture audio/monitor data 144 from media player 170 and upload the data through network 150 to media measurement system 100, where the data is received at sample control processing module 121. Ex. 1001, 2:30–32, 3:5–24, 3:45–50, 4:58–60. The audio data is divided into samples, either at monitor 101 or at module 121. *Id.* at 4:62–67. Module 121 submits a sample either to initial test and filtered search module 122 or to content recognition system 124. *Id.* at 5:3–5. Module 122 conducts an initial identification attempt. *Id.* at 5:6–7. If no identification is made, then content recognition system 124 performs a search using a larger portion of the sample, applying "known content recognition methods that identify content by extracting parameters from a media signal and applying an algorithm to those parameters to search for a content match." *Id.* at 5:43–46, 5:48–52. The identification result is passed to ID result module 125, which in turn passes the result to play stream generator 126, which generates a raw play stream relating a sequence of samples to content identification results. *Id.* at 5:39–43, 5:46–48, 6:24–27, 8:13–15, Fig. 2 (step 207), Fig. 4 (illustrating raw play stream 410). The raw play stream is then processed by play stream scrubber 127 which uses sequence data processing module 128 to generate a clean play stream and clean play list, which can then be used by measurement analysis module 129 and report generator 130. *Id.* at 6:27–37, 8:15–34, Fig. 2 (steps 209–212).

Figure 5 is reproduced below.

510

Clean Playstream

row	log time	content ID	content offset
1	t_0	TVprgm 27	(0)
2	t_0+1	TVprgm 27	(0)+1
3	t_0+2	none	n/a
4	t_0+3	none	n/a
5	t_0+4	none	n/a
6	t_0+5	TVprgm 27	(0)+2
7	t_0+6	TVprgm 27	(0)+3
8	t_0+7	TVprgm27	(0)+9
9	t_0+8	TVprgm27	(0)+10
10	t_0+9	TVprgm27	(0)+9
11	t_0+10	TVprgm27	(0)+10
12	t_0+11	none	n/a
13	t_0+12	TVprgrm27	(0)+29
14	t_0+13	TVprgrm27	(0)+30
15	t_0+14	ad23	(0)
16	t_0+15	none	n/a
17	t_0+16	ad25	(0)+2
18	t_0+17	TVprgm28	(0)
19	t_0+18	TVprgm28	(0)+1
20	t_0+19	TVprgrm28	(0)+2

560

Clean Play List

row	start log time	end log time	content ID	content offset
1	t_0	t_0+2	TVprgrm27	(0)
2	t_0+2	t_0+5	none	n/a
3	t_0+5	t_0+7	TVprgrm27	(0)+2
4	t_0+7	t_0+9	TVprgrm27	(0)+9
5	t_0+9	t_0+11	TVprgrm27	(0)+9
6	t_0+11	t_0+12	none	n/a
7	t_0+12	t_0+14	TVprgrm27	(0)+29
8	t_0+14	t_0+15	ad23	(0)
9	t_0+15	t_0+16	none	n/a
10	t_0+16	t_0+17	ad25	(0)+2
11	t_0+17	t_0+20	TVprgrm28	(0)

570

Channel Data for TV C4

row	start time	end time	content ID
1	C(0)	C(0)+31	TVprgrm27
2	C(0)+31	C(0)+34	ad23
3	C(0)+34	C(0)+37	ad24
4	C(0)+37	C(0)+40	ad25
5	C(0)+40	C(0)+50	TVprgrm28

590

Clean Play List with Deduced Actions

row	log time	end log time	content ID and <deduced action>	content offset
1	t_0	t_0+2	TVprgrm27	(0)
2	t_0+2	t_0+5	<pause for 3 units>	n/a
3	t_0+5	t_0+7	TVprgrm27	(0)+2
4	t_0+7	t_0+7	<skip frwrd 5 units>	n/a
5	t_0+7	t_0+9	TVprgrm27	(0)+9
6	t_0+9	t_0+9	<skip bckwrd 2 units>	n/a
7	t_0+9	t_0+11	TVprgrm27	(0)+9
8	t_0+11	t_0+12	<fast frwrd 18 units>	n/a
9	t_0+12	t_0+14	TVprgrm27	(0)+29
10	t_0+14	t_0+15	ad23	(0)
11	t_0+15	t_0+16	<fast frwrd 7 units>	n/a
12	t_0+16	t_0+17	ad25	(0)+2
13	t_0+17	t_0+20	TVprgrm28	(0)

FIG. 5

Figure 5 illustrates a clean play stream, a clean play list, channel data, and a clean play list showing deduced play-altering actions. Ex. 1001, 2:45–47, 11:8–10. As shown in Figure 5, clean play stream 510 presents a series of log times; content IDs, and content offsets, where "[e]ach log time indicates a time at which capture of the analyzed sample began," "[e]ach content ID indicates an identifier of the content that has been identified as corresponding to the captured sample," and "[e]ach content offset value represents a time offset from the beginning of a particular piece of content." *Id.* at 11:29–43. Play-altering actions, such as pausing, reversing, fast forwarding, and skipping back or forward, may be identified by comparing the progression of sample log times to the progression of corresponding content offset times in play stream 510. *Id.* at 11:14–25, 11:47–58.

D. Illustrative Claim

Petitioner challenges claims 1–13 of the ’896 Patent, of which claims 1 and 9 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

> 1. A media measurement method comprising:
>
> [1.1] using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to video data samples captured at a monitoring device associated with a monitored audience member;
>
> [1.2] using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member,
>
> [1.3] the sample sequence data corresponding to a sequence of the content identification results,
>
> [1.4] the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content,
>
> [1.5] wherein to utilize comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results; and
>
> [1.6] using one or more computers to utilize deduced play altering actions of the monitored audience member to generate a media measurement report.

Ex. 1001, 15:12–35 (bracketed designations added). Claim 9 is nearly identical to claim 1, with one additional limitation, “wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream.” *Id.* at 16:21–23.

E. Asserted Challenges and Evidence

Petitioner asserts the following challenges to patentability.

Claims Challenged	35 U.S.C.[1] §	Reference(s)/Basis
1, 3–6, 9–11	103(a)	Feininger[2]
1–4, 7–13	103(a)	Ramaswamy,[3] Conklin[4]
2, 7, 12, 13	103(a)	Feininger, Conklin

Pet. 7. Petitioner submits the Declaration of Samuel H. Russ, Ph.D. Ex. 1003. Patent Owner submits the Declaration of William Leo Hoarty. Ex. 2001.

[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") amended 35 U.S.C. §§ 102 and 103 with an effective date of March 16, 2013. Because the '896 Patent issued on an application filed before March 16, 2013, we refer to the pre-AIA versions of §§ 102 and 103.

[2] Ex. 1005, US 7,248,777 B2, issued July 24, 2007 ("Feininger"). Petitioner asserts that Feininger is prior art under 35 U.S.C. § 102(e) based on its PCT filing date of April 17, 2003, regardless of the '896 Patent's priority date. Pet. 1–2.

[3] Ex. 1006, US 2007/0271300 A1, published November 22, 2007 ("Ramaswamy"). Petitioner asserts that Ramaswamy is prior art under 35 U.S.C. § 102(e) based on its provisional filing date of November 22, 2004, and a May 26, 2005 priority date for the '896 Patent. Pet. 2.

[4] Ex. 1010, WO 2004/051997 A1, published June 17, 2004 ("Conklin"). Petitioner asserts that Conklin is prior art under 35 U.S.C. § 102(e) based on its PCT filing date of November 27, 2002, regardless of the '896 Patent's priority date. Pet. 2.

III. ANALYSIS

A. Legal Standards

In an *inter partes* review, "the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); *see also* 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim"); 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art relied upon).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when presented, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")). Petitioner cannot satisfy its burden of proving obviousness

by employing "mere conclusory statements," but "must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art ("POSA") would have had "a bachelor's degree in electrical engineering, computer engineering, computer science, or equivalent degree with at least two years of relevant industry experience, including in digital media content delivery." Pet. 2 (citing Ex. 1003 ¶ 31). Petitioner asserts that its declarant, Dr. Russ, is a POSA. *Id.* (citing Ex. 1003 ¶¶ 6–14).

Patent Owner argues that Petitioner's definition of a POSA is "unduly narrow" because it excludes persons having relevant industry experience, but "no formal degree." Prelim. Resp. 7 (citing Ex. 2001 ¶ 45). Patent Owner asserts that its declarant, Mr. Hoarty, qualifies as a POSA despite lacking a formal degree. *Id.* (citing Ex. 2001 ¶ 47). Patent Owner criticizes Petitioner's definition for failing to require industry experience designing and implementing automated content recognition ("ACR") systems. *Id.* at 8. Patent Owner argues that Dr. Russ lacks such experience. *Id.*

We agree with Patent Owner that a person can qualify as a POSA based on relevant industry experience in lieu of a formal degree. We also agree that ACR systems are relevant to the subject matter of the '896 Patent. We disagree, however, that industry experience with ACR systems is required to qualify as a POSA. The '896 Patent describes a media usage monitoring and measurement method that relies on "known content recognition methods." Ex. 1001, code (54), 5:48–52. The claimed invention

relates to deducing play-altering actions of a monitored audience member using certain data, including content identification results. *Id.* at code (57), 15:12–35. The '896 Patent does not claim a new method of content recognition.

For these reasons, we determine that a POSA would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or an equivalent degree, with two years of relevant industry experience in digital media content delivery or designing or implementing ACR systems. A person may qualify as a POSA based on more than two years of relevant industry experience in lieu of a bachelor's degree.

Based on the declarants' qualifications and the level of ordinary skill in the art articulated above, both Dr. Russ and Mr. Hoarty qualify as a POSA. Ex. 1003 ¶¶ 10–14; Ex. 2001 ¶¶ 45–47; *see Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1376–77 (Fed. Cir. 2022) ("To offer expert testimony from the perspective of a skilled artisan in a patent case—like for claim construction, validity, or infringement—a witness must at least have ordinary skill in the art. Without that skill, the witness' opinions are neither relevant nor reliable.").

C. Claim Construction

In an *inter partes* review, we apply the same claim construction standard as would be used by a district court to construe a claim in a civil action involving the validity or infringement of a patent. 37 C.F.R. § 42.100(b). Under that standard, claim terms are given their ordinary and customary meaning, as would have been understood by a POSA at the time of the invention, in light of the language of the claims, the specification, and the prosecution history of record. *Id.*; *Phillips v. AWH Corp.*, 415 F.3d

1303, 1312–19 (Fed. Cir. 2005) (en banc); *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012). "The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes no explicit claim constructions. Pet. 18. Patent Owner proposes express constructions for several claim terms. Prelim. Resp. 10–22. Both parties address the meaning of "content offset" in the context of discussing the prior art. Pet. 40–41, 66–67; Prelim. Resp. 43. Aside from "content offset," we determine that no other claim terms require express construction for purposes of this Decision.

content offset

Claim elements 1.2 and 9.2 each recite: "using one or more computers to utilize sample sequence data and *content offset data* to deduce play-altering actions of the monitored audience member." Ex. 1001, 15:18–21, 16:17–19 (emphasis added). Claim elements 1.4 and 9.5 each recite: "the content offset data including *content offsets* associated with the content identification results, *a content offset indicating a time position of a content identification result within identified content*." *Id.* at 15:22–26, 16:23–27 (emphasis added).

Neither party proposes a formal construction for "content offset." Petitioner contends that "a *content offset* is determined in relation to the beginning time of reference content (as opposed to the consumed content)." Pet. 41, 66–67. Elsewhere, Petitioner contends that "[t]he claim language does not require the *content offset* to be relative to any specific start time,

such as zero." Pet. 68 (citing Ex. 1001, 10:10–19; Ex. 1003 ¶ 263). Patent Owner argues that a "content offset . . . is . . . the offset or difference between the beginning time of a sample within a particular piece of content from the beginning time of that specific content." Prelim. Resp. 43. In the above-quoted excerpts, the parties' characterizations of a "content offset" are similar, and the parties agree that a "content offset" is relative to the beginning time or start time of an item of media content. Pet. 41, 66–67; Prelim. Resp. 43.

Nevertheless, Petitioner also contends that a "content offset" is "characterized broadly" and "would encompass at least using absolute times, as opposed to arbitrary reference times." Pet. 41, 66–67 (citing Ex. 1001, 10:10–19; Ex. 1003 ¶¶ 153, 259, 260). Patent Owner disputes that contention, arguing that a content offset is "wholly relative." Prelim. Resp. 43. We agree with Patent Owner.

The claims and Specification are consistent with defining "offset" as relative, rather than absolute. Claim elements 1.4 and 9.5 each recite: "a content offset indicating a time position of a content identification result *within identified content*." Ex. 1001, 15:24–26, 16:25–27 (emphasis added). In our view, "a time position . . . within identified content" means the time position is relative to a reference point within the identified content. Our understanding of the claim language is reinforced by the Specification.

According to the '896 Patent, content offset data are shown in Figure 5, but not Figure 4. Ex. 1001, 9:22–26. Figures 4 and 5 both show a series of log times and corresponding content IDs, where the log time indicates when a sample began to be captured. *Id.* at 9:29–32, 9:40–45, 11:32–35, Figs. 4, 5. Figure 5 additionally includes a "content offset" column, as illustrated below.

510 Clean Playstream			
row	log time	content ID	content offset
1	t_0	TVprgm 27	(0)
2	t_0+1	TVprgm 27	(0)+1
3	t_0+2	none	n/a
4	t_0+3	none	n/a
5	t_0+4	none	n/a
6	t_0+5	TVprgm 27	(0)+2
7	t_0+6	TVprgm 27	(0)+3
8	t_0+7	TVprgm27	(0)+9
9	t_0+8	TVprgm27	(0)+10
10	t_0+9	TVprgm27	(0)+9
11	t_0+10	TVprgm27	(0)+10
12	t_0+11	none	n/a
13	t_0+12	TVprgrm27	(0)+29
14	t_0+13	TVprgrm27	(0)+30
15	t_0+14	ad23	(0)
16	t_0+15	none	n/a
17	t_0+16	ad25	(0)+2
18	t_0+17	TVprgm28	(0)
19	t_0+18	TVprgm28	(0)+1
20	t_0+19	TVprgrm28	(0)+2

Id. at Fig. 5 (excerpt). According to the '896 Patent,

> Each content offset value represents a time offset from the beginning of a particular piece of content. For example, row 8 of Play Stream 510 corresponds to a sample whose beginning is located 9 time units from the beginning of TV program 27, thus the content offset is referenced as (0)+9.

Id. at 11:41–46. Although both the log time and content offset are expressed in relative terms in the Figure 5 example, only the content offset is relative to a reference point within the identified content, in this case the beginning of the content. *Id.* at 9:40–45, 11:41–46.

As support for its broader characterization of a "content offset" Petitioner cites a passage from the '896 Patent that describes channel data, not content offsets. Pet. 41, 66–68 (repeatedly citing Ex. 1001, 10:10–19).

Channel data pertains to "CD albums, broadcasts, or other particular storage or transmission media" and does not include content offsets. Ex. 1001, 10:2–7, Figs. 4, 5 (showing channel data 470, 490, 570 with information for "radio 35," "album 12," and "TV C4," respectively).

For these reasons, we determine that the term "content offset" does not encompass using absolute times. For purposes of this Decision, it is unnecessary to provide any further construction for "content offset," particularly in view of the express language of the claim, "a content offset indicating a time position of a content identification result within identified content." Ex. 1001, 15:24–26, 16:25–27.

D. Petitioner's First Challenge

Petitioner challenges claims 1, 3–6, and 9–11 as unpatentable over Feininger. Pet. 34–56. Patent Owner opposes. Prelim. Resp. 22–35. We begin our analysis with an overview of Feininger.

1. Feininger (Ex. 1005)

Feininger discloses a method to detect content skipping by a consumer of a recorded program. Ex. 1005, codes (54), (55). Feininger discloses that a digital recording device may include "apparatus 50 to detect portions of a recorded program that were not played back in real time (e.g., that were skipped, fast forwarded, paused, and/or rewound)." *Id.* at 4:4–7, 13:49–54, Fig. 1. Apparatus 50 includes time stamper 52 that records the times at which sections of a broadcast program are received and stored in memory 54 of the digital recording device. *Id.* at 4:15–23, Fig. 2. Apparatus 50 also includes presentation time retriever 56 that retrieves the recording times of the sections of the program being played back and stores them in association

with the playback time of the corresponding sections of the program. *Id.* at 4:49–61, Fig 2.

When a recorded program is played back from memory, presentation time retriever 56 "creates a running list of log entry data structures 58," as illustrated in Figure 3A–3C reproduced below. *Id.* at 4:61–64.

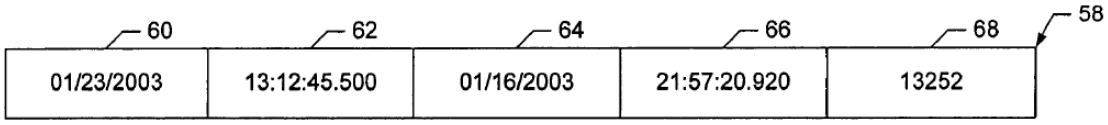

FIG. 3A

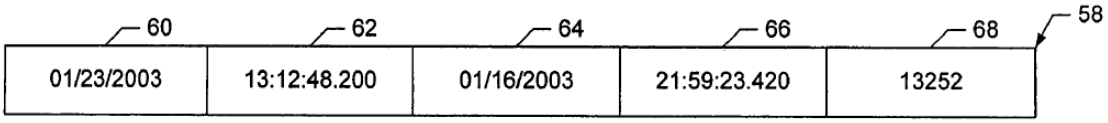

FIG. 3B

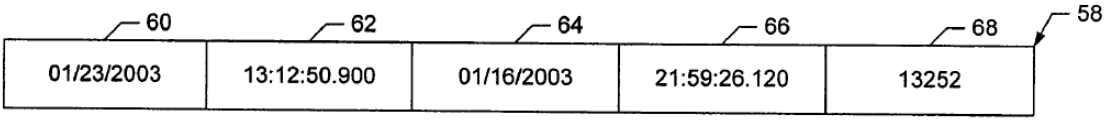

FIG. 3C

Ex. 1005, 4:61–64. Figures 3A–3C show example log entry data structures 58 that may be created by apparatus 50. *Id.* at 1:64–65. Each log entry 58 includes playback date field 60, playback time field 62, recording date field 64, recording time field 66, and program identification field 68. *Id.* at 5:3–16, 5:28–32. Field 68 stores a program identifier, e.g., a "universal program identifier," retrieved "from the packet header of the section of the recorded program currently being played back." *Id.* at 5:28–39, 16:56–17:2.

Apparatus 50 further includes interval detector 90, difference detector 92, and non-real time content identifier 94. Ex. 1005, Fig. 2. Interval detector 90 and difference detector 92 are used "to determine if the audience has played a portion of the recorded program back in something other than real time." *Id.* at 8:53–56. Interval detector 90 computes the recording intervals and playback intervals between successive log entries 58, and difference detector 92 determines the difference between corresponding intervals. *Id.* at 8:56–62, 9:13–18, 9:25–30. If there is a non-zero difference, non-real time content identifier 94 responds "by searching a database to determine the identities of the program segments that were skipped, fast forwarded, and/or rewound." *Id.* at 9:61–10:1.

2. Claim Elements 1.1, 9.1, 1.3, and 9.3

Claim elements 1.1 and 9.1 each recite: "using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member." Ex. 1001, 15:13–17, 16:11–16. Claim elements 1.3 and 9.3 each recite: "the sample sequence data corresponding to a sequence of the content identification results." *Id.* at 15:21–22, 16:19–21.

Addressing claim element 1.1, Petitioner contends that Feininger's running list of log entry data structures 58 is a "play stream" and that program identifier 68 is "content identification results." Pet. 36 (citing Ex. 1005, 4:61–5:2, 5:28–42, 16:56–17:2). Addressing claim element 1.3, Petitioner contends that Feininger's running list of log entry data structures 58 provides "a sequence of the content identification results."

Pet. 39–40 (citing Ex. 1003 ¶ 150); *see also* Pet. 48 (addressing claim elements 9.1 and 9.3 and cross-referencing sections of the Petition that address elements 1.3 and 1.3).

Patent Owner argues that Feininger does not teach or suggest content identification results corresponding to a sequence of submitted data samples (claim elements 1.1, 9.1) or sample sequence data corresponding to a sequence of the content identification results (claim elements 1.3, 9.3). Prelim. Resp. 22–25. According to Patent Owner, Feininger's program identifiers "are not *content identification results* and cannot *correspond to a sequence of submitted data samples* because they are not results of any content identification process, and because no data samples are ever submitted for content identification." *Id.* at 24 (citing Ex. 2001 ¶ 86).

After considering both parties' arguments and evidence, we determine that Petitioner's showing for claim elements 1.1, 1.3, 9.1, and 9.3 based on Feininger does not meet the threshold for institution of an *inter partes* review.

We agree with Patent Owner that Petitioner has not shown that Feininger's program identifiers 68 are "content identification results corresponding to a sequence of submitted data samples," as claimed, and has not shown that Feininger's running list of log entry data structures 58 provides a sequence of such content identification results. Prelim. Resp. 22–25; Ex. 1001, 15:14–15, 16:12–13. As Petitioner concedes, Feininger's program identifiers 68 are extracted from the packet headers of a recorded program. Pet. 36; Ex. 1005, 5:28–42, 16:56–17:2. Petitioner does not show that Feininger's program identifiers 68 result from content identification.

Petitioner and Dr. Russ implicitly agree that "content identification results," as claimed, are the results of some process for identifying media content. Pet. 36; Ex. 1003 ¶ 138. For example, content identification may involve "extracting parameters from a media signal and applying an algorithm to those parameters to search for a content match." Pet. 8 (citing Ex. 1001, 5:48–62); Ex. 1003 ¶ 41 (citing Ex. 1001, 5:48–66). As such, the term "content identification results" must be given patentable weight. *In re DiStefano*, 808 F.3d 845, 851 (Fed. Cir. 2015) (finding where the origin of a data element is claimed, and is not merely part of the information content of the content of the data, that origin must be given patentable weight).

Addressing claim element 1.1, Petitioner contends that "content identification results" is taught by Feininger's program identifier 68, "such as a universal program identifier known in the art." Pet. 36 (citing Ex. 1005, 4:61–5:2, 5:28–42, 16:56–17:2). Feininger states that "a universal program identifier is a program code that identifies a program based on a pre-defined, standardized code arrangement." Ex. 1005, 5:39–42. Petitioner does not explain how a such "pre-defined" code is the result of an identification of the content of the program.

Petitioner contends that "Feininger's program identifier is obtained by (e.g., is the result of) investigating/examining the packet data of the program being played to extract the program identifier information." Pet. 36 (citing Ex. 1003 ¶¶ 137, 138; Ex. 1005, 4:61–5:2, 5:28–42, 16:56–17:2). Petitioner does not show that the claim term "content identification" is broad enough to encompass investigating or examining packet data to extract program identifier information from the packet header, or that the claim term "content identification results" is broad enough to encompass program identifier

information extracted from the packet header of a section of a recorded program.

We have considered Dr. Russ's testimony pertaining to claim elements 1.1 and 9.1 and Feininger. Ex. 1003 ¶¶ 136–142, 179. Dr. Russ testifies that Feininger's "[p]resentation time retriever 56 . . . retrieves a 'program identifier [(*content identification results*)] from the packet header of the section of the recorded program currently being played back and store[s] that identifier in one or more program identification fields 68.'" Ex. 1003 ¶ 137 (citing Ex. 1005, 5:28–42). Like Petitioner, Dr. Russ does not take into account the description of "content identification" provided earlier in his testimony. Ex. 1003 ¶ 41 (citing Ex. 1001, 5:48–66). Dr. Russ does not assert that Feininger discloses content identification. Without content identification, there can be no content identification results.

Dr. Russ further testifies that Feininger's apparatus 50 "generates the '*play stream of content identification results*' based on the data samples submitted to data logging device 26." Ex. 1003 ¶ 139 (citing Ex. 1005, 4:4–13). Missing from this testimony is any opinion about whether Feininger's apparatus 50 or data logging device 26 performs content identification. Dr. Russ does not point to any teaching or suggestion in Feininger that extracted program identifiers 68 result from content identification.

Addressing claim element 1.3 and Feininger's Figures 3A–3C, Petitioner contends that "[e]ach of the log entry data structures 58 in the running list identifies content based on a program identification field 68 . . . (*content identification result*)" and "[t]his running list provides a *sequence of the content identification results*." Pet. 39–40 (citing Ex. 1003 ¶ 150; Ex. 1005, 5:28–42). Dr. Russ's testimony (Ex. 1003 ¶¶ 149, 150) is similar

to Petitioner's contentions. Petitioner's arguments and evidence for claim elements 1.3 and 9.3 do not remedy the deficiencies in Petitioner's showing for claim elements 1.1 and 9.1, as discussed above.

3. Conclusion for Petitioner's First Challenge

For these reasons, we determine that Petitioner's challenge to independent claims 1 and 9 based on Feininger does not meet the threshold for institution of an *inter partes* review. Petitioner's arguments and evidence for dependent claims 3–6, 10, and 11 do not remedy the deficiencies in Petitioner's showing for independent claims 1 and 9.

E. Petitioner's Second Challenge

Petitioner challenges claims 1–4 and 7–13 as unpatentable over Ramaswamy and Conklin. Pet. 56–83. Patent Owner opposes. Prelim. Resp. 35–65. We begin our analysis with overviews of Ramaswamy and Conklin.

1. Ramaswamy (Ex. 1006)

Ramaswamy discloses a method for media source identification and time shifted media consumption. Ex. 1006, codes (54), (57), ¶ 18.

In Ramaswamy's method, first signature information is generated at a media presentation device, e.g., a television, and second signature information is generated at a media source, e.g., a set-top box ("STB"), personal video recorder ("PVR"), or game console, and stored in a library. Ex. 1006, code (57), ¶¶ 4, 28, 29, 34, claim 1, Figs. 2, 3. Signature information includes a time stamp, a signature, and a source ID. *Id.* ¶¶ 36, 48, Fig. 4. A signature is a series of digital values or a waveform that substantially uniquely represents the media content. *Id.* ¶ 31. A source ID

represents a media source, e.g., the STB, PVR, or game console. *Id.* ¶¶ 34, 36, 37.

First signature information is compared with second signature information from the library to generate a matcher collection. Ex. 1006 ¶¶ 32, 33, 38, 53–59, claim 1, Fig. 4 (example library); Fig. 5 (flow diagram of process for updating signature library); Fig. 6 (flow diagram of process for matching signature information); Fig. 7 (example matcher collection). The matcher collection identifies a source of the media presented via the media delivery device. *Id.* ¶¶ 39, 60, claim 1. Matcher collections are sent to a time shift analyzer, which determines whether the matcher collection includes time shifted information. *Id.* ¶¶ 40, 46, 61, Fig. 8 (flow diagram of example process for analyzing time shifted information). If the matcher collection includes time shifted information, a Boolean flag is set in a time shift analysis data structure. *Id.* ¶¶ 40, 61–66, Fig. 9 (example time shift analysis data structure from a time shift analyzer).

2. Conklin (Ex. 1010)

Conklin discloses a method for tracking a sequence of events associated with a digital recording device. Ex. 1010, codes (54), (57).

In Conklin's method, a digital information monitor/analyzer monitors data transfers within a digital recording device and generates a sequence of events record in response to write and read operations corresponding to record and playback operations, respectively, of the recording device. Ex. 1010 ¶¶ 22, 27–33, 42–45, 68–70, Figs. 1, 2, 8, Tables 3, 4. The sequence of events record is indexed by memory storage location and can be used to ascertain audience behaviors, such as recording and playback habits of those using the digital recording device. *Id.* ¶¶ 34, 46, 70–76, Figs. 9–13

(graphic examples of various operations and viewing behavior associated with a digital video recorder).

3. Claim Elements 1.2, 1.4, 9.2, and 9.5

Claim elements 1.2 and 9.2 each recite "using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member." Ex. 1001, 15:18–21, 16:17–19. Claim elements 1.4 and 9.5 each recite "the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content." *Id.* at 15:22–26, 16:23–27.

Petitioner contends that Ramaswamy, alone or in combination with Conklin, teaches claim element 1.2 (Pet. 62–65), and that Ramaswamy teaches claim element 1.4 (Pet. 66–68). For the "content offset data" aspect of claim element 1.2, Petitioner relies on Ramaswamy, asserting that "the data in Ramaswamy's matcher collections includes both the claimed *sample sequence data* and the claimed *content offset data*." Pet. 63–64 (cross-referencing section of Petition that addresses claim element 1.4); *see also* Pet. 66–68 (discussing claim element 1.4); Pet. 80–81 (addressing claim elements 9.2 and 9.5 and cross-referencing sections of the Petition that address elements 1.2 and 1.4).

Patent Owner argues that Ramaswamy does not disclose or suggest the use of content offset data, as recited in claim elements 1.2, 1.4, 9.2, and 9.5. Prelim. Resp. 42–49. According to Patent Owner, Ramaswamy's time stamps are absolute times, "not *content offset data*, which is relative." *Id.* at 44.

After considering both parties' arguments and evidence, we determine that Petitioner's showing for claim elements 1.2, 1.4, 9.2, and 9.5 based on Ramaswamy and Conklin does not meet the threshold for institution of an *inter partes* review.

As discussed above, we determine that the term "content offset" does not encompass using absolute times. Under our claim construction, Petitioner's assertion that Ramaswamy's matcher collection includes "content offset data" (Pet. 68) is not supported by the reference. An example matcher collection is shown in Ramaswamy Figure 7, reproduced below.

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SOURCEID	TIME STAMP
ID1	TS1
ID2	TS2
ID3	TS3

FIG. 7

Ramaswamy's Figure 7 is a tabular representation of a matcher collection. Ex. 1006 ¶ 14. The table includes a source ID attribute and a time stamp attribute. *Id.* ¶ 53; *see* Pet. 65 (relying on Ramaswamy's Figure 7 as "an example of a matcher collection" that includes "at least a source identifier and a time stamp"). Ramaswamy's time stamp is an absolute time, not a relative time. Ex. 1006 ¶ 50 ("The time stamp is a well-known technique for representing a time (e.g., a current time) at which an event occurs.").

Accordingly, Ramaswamy's time stamps are not content offset data or content offsets, as recited in claim elements 1.2, 1.4, 9.2, and 9.5.

Petitioner contends that,

> the difference between the time stamp of an identified segment of the broadcast (e.g., a match included in a matcher collection) and the time stamp of the beginning of that broadcast corresponds to the claimed *content offset indicating a time position of a content identification result within identified content* for that particular identified segment.

Pet. 68. Petitioner's contention lacks support in Ramaswamy, which does not disclose the time stamp of the beginning of broadcast. Ramaswamy also does not disclose the difference between the time stamp of an identified segment of the broadcast and the time stamp of the beginning of that broadcast. Accordingly, to the extent Petitioner's contention applies a correct claim construction, it is not supported by the asserted prior art reference.

Petitioner further contends that "[w]hen considering the broadcast time for that particular piece of reference signature information 220 relative to the broadcast of the recorded program as a whole, the time position of that section (*content identification result*) within the content as a whole (*identified content*) can be determined." Pet. 68. We understand Petitioner to be arguing that a "content offset" can be determined from Ramaswamy's time stamps. But the claims require utilizing content offset data to deduce play-altering actions of the monitored audience member. Ex. 1001, 15:18–21, 16:17–19. Petitioner does not point to any disclosure or suggestion in Ramaswamy of determining a content offset. Petitioner also does not point to any disclosure or suggestion in Ramaswamy of utilizing content offset data to deduce play-altering actions of the monitored audience

member. Even if Petitioner is correct that a "content offset" can be determined from Ramaswamy's time stamps, Petitioner provides no rationale for modifying the reference's teachings to determine or use content offsets.

We have considered Dr. Russ's testimony pertaining to content offsets and Ramaswamy. Ex. 1003 ¶¶ 246, 258–265. Dr. Russ relies upon an incorrect claim construction, parroting Petitioner's assertion that "the claimed *content offset* would encompass at least using absolute times, as opposed to arbitrary reference times, for broadcast channels." *Id.* ¶ 263. Dr. Russ's testimony about Ramaswamy (*id.*) is the same as the corresponding portion of the Petition (Pet. 67–68) and suffers from the same shortcomings.[5]

4. Claim Elements 1.5 and 9.6

Claim elements 1.5 and 9.6 each recites, in relevant part, "comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results." Ex. 1001, 15:28–32, 16:29–33.

Petitioner contends that Ramaswamy, alone or in combination with Conklin, teaches claim element 1.5. Pet. 68–73. Petitioner contends that the comparison recited in claim element 1.5 would have been obvious in view of

[5] Our analysis of claim elements 1.2, 1.4, 9.2, and 9.5 is by itself sufficient to support our determination that Petitioner's Ramaswamy-Conklin challenge fails to meet the threshold for institution of an *inter partes* review. Our discussion of claim elements 1.5 and 9.6 below provides additional reasons for denying institution.

either reference. Pet. 70, 72–73; *see also* Pet. 81 (addressing claim element 9.6 and cross-referencing section of the Petition that addresses elements 1.5).

Patent Owner argues that Ramaswamy does not disclose or suggest the use of content offsets, as recited in claim elements 1.5 and 9.6. Prelim. Resp. 49–51. Patent Owner argues that Petitioner does not assert that Conklin discloses content offsets or the use of them and does not show that determining content offsets would have been obvious. Pet. 52–58.

After considering both parties' arguments and evidence, we determine that Petitioner's showing for claim elements 1.5 and 9.6 based on Ramaswamy and Conklin does not meet the threshold for institution of an *inter partes* review.

Addressing claim element 1.5 and Ramaswamy, Petitioner contends that "the claimed *content offsets of the corresponding content identification results* are determined based on the time stamps in the reference signature information 220." Pet. 69. Petitioner's contention is not supported by Ramaswamy, which does not disclose or suggest determining content offsets. *See* section III.E.3. *supra.* Although Ramaswamy discloses a comparison of first signature information with second signature information to generate a matcher collection (Ex. 1006, code (57), ¶¶ 33, 38, 45), Petitioner does not point to any disclosure or suggestion of comparing a progression of log times with a progression of content offsets, as recited in claim element 1.5.

Next, Petitioner argues that "it would have been obvious to a POSA that a *progression* of such comparisons will be made because a single comparison would not be useful in the context of Ramaswamy's system." Pet. 69–70. We agree with Patent Owner that "Petitioner's 'progression of comparisons' does not meet the claim language, which requires a

comparison of progressions." Prelim. Resp. 51. Ramaswamy discloses comparing first signature information with second signature information, one signature at a time. Ex. 1006 ¶¶ 45, 57 ("a hash table, database, etc. having a time stamp attribute configured as the primary key and a signature attribute configured as the secondary key may be used to enable quick lookup based on a time stamp value and a signature value"). Although Ramaswamy may suggest making a series of such comparisons (*id.* ¶¶ 32, 33, 38, 45), the claim requires something different, namely a comparison between a progression of log times and a progression of content offsets.

Next, Petitioner contends that "[b]ecause Ramaswamy teaches comparing time stamps of consumed signature information 217 (*log times*) and time stamps in the reference signature information 220 (which correlate to *content offsets*), it would have been obvious to compare the *log times* to the *content offsets* as recited in element [1.5]." Pet. 70. According to Petitioner, "[t]he difference is merely comparing the collected data in a slightly different way." *Id.* Petitioner's contention falls short. Petitioner admits there is a difference between the comparison disclosed in Ramaswamy and the comparison recited in the claim. *Id.* In light of that difference, it is Petitioner's burden to "articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *Magnum Oil*, 829 F.3d at 1380. Neither Petitioner nor Dr. Russ provides reasoning sufficient to support modifying Ramaswamy's teachings in a way that would satisfy the claim. Dr. Russ asserts that it was well known to compare time stamps to detect fast-forward or rewind behavior (Ex. 1003 ¶ 274), but he does not say that it was well known to compare log times to content offsets, as recited in claim element 1.5. When discussing the technology background, Dr. Russ asserts that content identification,

generating play streams, and deducing play-altering actions were all well known (*id.* ¶¶ 41–50), but he does not say the same about using content offsets.

Petitioner presents an alternative contention for claim element 1.5 based on Conklin. Pet. 70–73. Petitioner asserts that "the claimed *content offsets of the corresponding content identification results* are a function of Conklin's record time." Pet. 72. According to Petitioner, "[i]t would have been obvious, knowing the start time of the full program and the broadcast/record time of the identified segment of content, to determine the *content offset* therefor, e.g., the amount of time the segment is located from the beginning of the full program." *Id.* Petitioner contends that "Conklin's record times . . . render obvious the claimed *a progression of content offsets of the corresponding content identification results*." *Id.* (citing Ex. 1003 ¶ 278). The cited testimony adds nothing to these contentions. Ex. 1003 ¶ 278.

Petitioner's contentions about Conklin are deficient. Petitioner does not assert that Conklin discloses content offsets or the use of them. Instead, Petitioner contends that content offsets "are a function of Conklin's record time," and it would have been obvious to determine content offsets *if* the start time of the program were known. Pet. 72. Petitioner does not show that the start time of a program is known in Conklin's system or method. Moreover, Petitioner and Dr. Russ do not provide reasoning sufficient to support modifying Conklin's teachings to include a determination of content offsets or to use them to deduce play-altering actions. We agree with Patent Owner (Prelim. Resp. 54) that Conklin already teaches how to deduce play-altering actions without the use of content offsets. Ex. 1010 ¶¶ 46, 70. In the absence of reasoning sufficient to support modification of the prior art to

arrive at the claimed invention, we are left with only the hindsight bias that *KSR* warns against. *KSR*, 550 U.S. at 421 ("A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning."); *Metalcraft of Mayville, Inc. v. Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) ("[W]e cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention.").

5. Conclusion for Petitioner's Second Challenge

For these reasons, we determine that Petitioner's challenge to independent claims 1 and 9 based on Ramaswamy and Conklin does not meet the threshold for institution of an *inter partes* review. Petitioner's arguments and evidence for dependent claims 2–4, 7, 8, and 10–13 do not remedy the deficiencies in Petitioner's showing for independent claims 1 and 9.

F. Petitioner's Third Challenge

Petitioner challenges dependent claims 2, 7, 12, and 13 as unpatentable over Feininger and Conklin. Pet. 83–85. Patent Owner opposes. Prelim. Resp. 65–66.

Petitioner's combination of Feininger and Conklin does not remedy the deficiencies in Petitioner's showing for independent claim 1, as discussed above.

IV. ORDER

It is ORDERED that institution of an *inter partes* review is *denied*.

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