

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNIFIED PATENTS, LLC,  
Petitioner,

v.

VL COLLECTIVE IP LLC,  
Patent Owner.

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IPR2022-01086  
Patent 8,605,794 B2

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Before KARL D. EASTHOM, JEFFREY S. SMITH, and  
PATRICK M. BOUCHER, *Administrative Patent Judges*.

BOUCHER, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining Some Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

In response to a Petition (Paper 2, “Pet.”) filed by Unified Patents, LLC (“Petitioner”), we instituted an *inter partes* review of claims 1, 3, 5, 9, 12, 13, 15, 20, and 21 of U.S. Patent No. 8,605,794 B2 (Ex. 1001, “the ’794 patent”). Paper 8 (“Dec.”). VL Collective IP LLC (“Patent Owner”) filed a Response (Paper 20, “PO Resp.”), to which Petitioner filed a Reply (Paper 23, “Reply”), and Patent Owner filed a Sur-reply (Paper 26, “Sur-reply”). An oral hearing was held with the parties, and a copy of the transcript was entered into the record. Paper 36 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Based on the record before us, Petitioner has shown, by a preponderance of the evidence, that claims 1, 3, 5, 9, 12, 13, and 15 are unpatentable, but has not shown, by a preponderance of the evidence, that claims 20 and 21 are unpatentable.

## I. BACKGROUND

### *A. The ’794 Patent*

#### *1. Overview*

The ’794 patent describes methods and devices that “enable[] content-related first and second data segments to be synchronized.” Ex. 1001, 2:24–27. Figure 1 of the ’794 patent is reproduced below.

FIG 1

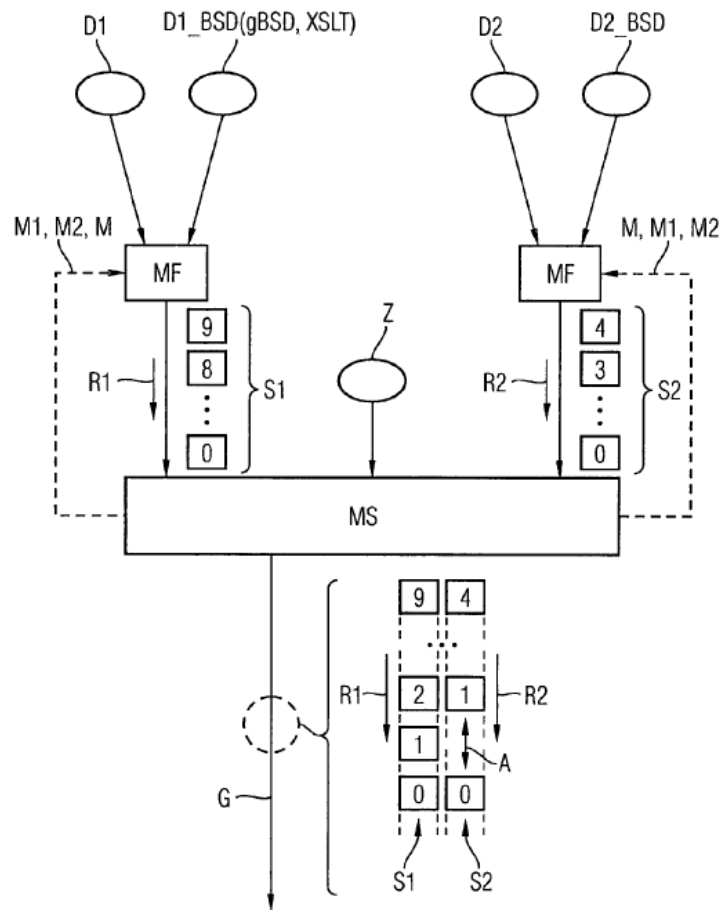


Figure 1 illustrates video and audio data streams meant to be synchronized. *Id.* at 3:65–4:1. In the drawing, D1 represents the video data stream, which is illustrated as segmented into ten data segments S1. *Id.* at 4:3–5. Similarly, D2 represents the audio data stream, which is illustrated as segmented into five data segments S2. *Id.* at 4:6–8.

The video and audio segments are synchronized by synchronization module MS “on the basis of a predefinable assignment rule Z.” *Id.* at 5:10–13. In the illustrated example, where the number of video data segments is twice the number of audio data segments, assignment rule Z outputs each audio data segment with every second video data segment (as indicated in

the lower right portion of the drawing). *Id.* at 5:38–58. The ’794 patent describes other examples of assignment rules that may be applied. *Id.* at 5:59–6:42.

## *2. Illustrative Claim*

Challenged independent claim 1 is representative of the challenged claims, and is reproduced below.

1. A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:  
sequentially outputting, by a device for synchronizing content-related data, the content-related first data segments and the content-related second data segments according to their chronological sequence in such a way that each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of an assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments.

Ex. 1001, 7:45–57.

## *3. Prosecution History*

The ’794 patent originated from a PCT application that claimed priority to an earlier-filed German application. Ex. 1001 at codes (22), (30), (86), (87). When entering the U.S. national stage, the claim that ultimately matured into representative claim 1 was amended by preliminary amendment “solely to place the claim[] in proper form for U.S. practice,” such that the claim as initially examined took the following form:

1. A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:  
    sequentially outputting the first and second data segments according to their chronological sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for the first and second data segments.

Ex. 1002, 80 (cleaned up), 84. The issued version of the claim differs from this version in three respects: (1) the “sequentially outputting” is performed “by a device for synchronizing content-related data”; (2) the recited “first and second data segments” are recited specifically as “content-related”; and (3) the “assignment rule” is “for assigning each one of the content-related second data segments to one of the content-related first data segments.”

*Compare* Ex. 1001, 7:45–57 *with* Ex. 1002, 80.

The issued version of the claim resulted from various amendments made in response to Office Actions during the course of prosecution. In a first Office Action, the Examiner rejected the claim as unpatentable under 35 U.S.C. § 103(a) over EP 1494430 (“Shin”<sup>1</sup>) and U.S. Patent No. 5,661,523 (“Yamane”). Ex. 1002, 229–230. When responding to this first Office Action, the Applicant amended the claim to recite that the assignment rule is for “assigning each second data segment to a first data segment,” but emphasized that “[t]his amendment is for clarity purposes only.” *Id.* at 253, 259. According to the Applicant, Shin nevertheless did not disclose the recited “assignment rule” because, in Shin, “[s]egments of one type of data are not assigned to segments of the other type; rather, a synchronization time

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<sup>1</sup> Patent Owner filed a copy of U.S. Patent No. 7,428,696 B2, which is a U.S. counterpart to Shin, as Exhibit 2011.

is calculated.” *Id.* at 259. That is, the Applicant characterized Shin as relying on time synchronization of segments such that “Shin at best determines a point in time in content and metadata so that [segments] are synchronized.” *Id.*

In a second (final) Office Action, the Examiner withdrew the rejection involving Shin and instead rejected the claim as unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,598,352 (Ex. 2012, “Rosenau”) and Yamane. *Id.* at 276–278. After a telephonic interview in which “[n]o agreement with respect to the claim was reached” with the Examiner, the Applicant filed a Request for Continued Examination with a further amendment to recite that the first and second data segments are “content-related.” *Id.* at 324. In doing so, the Applicant again argued that the art cited by the Examiner failed to disclose the recited “assignment rule.” *Id.* at 334–335. Specifically, the Applicant characterized Rosenau as disclosing “a system that synchronizes a video display with audio playback . . . by utilizing a system time clock.” *Id.* at 334. Because the video data may, over time, lag the audio data, Rosenau teaches skipping one or more video frames to resynchronize. *See id.* at 335. The Applicant argued:

However, the skipping and/or repeating of frames for resynchronization is not “an **assignment rule** for assigning each one of the content-related second data segments to one of the content-related first data segments,” as required by Claim 1 (emphasis added). Instead, *Rosenau* merely discloses that when outputted audio data and video data fall out of sync, they may be resynchronized by skipping one or more video frames.

*Id.*

The claim was subsequently allowed after the Applicant added the recited “device for synchronizing content-related data” to address rejections

under 35 U.S.C. § 101 that had also been made by the Examiner throughout prosecution. *See id.* at 227–228 (§ 101 rejection in first Office Action), 274 (§ 101 rejection in second Office Action), 343–344 (§ 101 rejection in a third Office Action), 375 (Applicant amendment), 381 (Applicant remarks), 387–390 (Notice of Allowance). In a Notice of Allowability, the Examiner made certain statements of reasons for allowance. With respect to Rosenau, the Examiner explained that pertinent disclosures of Rosenau

*can be summarized as the frame synchronization is based on the timing information parsed from a data stream, which is loaded into a system time clock counter and incremented according to the clock frequency. And also the frame may be skipped in order to resynchronize the frame with audio data. Therefore, synchronizing the frame and skipping the frame to resynchronize is not the equivalent to the “sequentially outputting data segments on the basis of an assignment rule for assigning one of the content-related second data segments for assigning each one of the content-related second data segment to one of the content-related first data segment”.*

*Id.* at 396 (emphases by Examiner). With respect to Yamane, the Examiner noted that “frames are displaying in the chronological order,” and explained that “[t]he display of the chronological order of the f[r]ame is not equal to sequentially outputting data segments on the basis of an assignment rule for assigning one of the content-related second data segments for assigning each one of the content-related second data segment to one of the content-related first data segments.” *Id.* (underlined emphasis by Examiner).

The Applicant provided comments on these reasons: “Although Applicants agree that the various claimed limitations mentioned in the claims are not taught or suggested by the prior art taken either singly or in combination, Applicants wish to emphasize that it is each claim, taken as a

whole, including the interrelationships and interconnections between various claimed elements which is allowable over the prior art of record.” *Id.* at 500.

*B. Evidence*

Petitioner relies on the following references:

Sonohara	US 5,627,656	May 6, 1997	Ex. 1003
Abbott	US 6,654,933 B1	Nov. 25, 2003	Ex. 1004

In addition, Petitioner relies on Declarations by Immanuel Freedman, Ph.D. Exs. 1005, 1016. Dr. Freedman was cross-examined by Patent Owner, and transcripts of his depositions were entered into the record. Exs. 2008, 2014. Patent Owner relies on a Declaration by Michael T. Goodrich, Ph.D. Ex. 2007. Dr. Goodrich was cross-examined by Petitioner, and a transcript of his deposition was entered into the record. Ex. 1017.

*C. Instituted Grounds of Unpatentability*

Petitioner challenges, and we instituted review of, claims 1, 3, 5, 9, 12, 13, 15, 20, and 21 on the following grounds. Pet. 3–4; Dec. 24.

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §<sup>2</sup></b>	<b>References</b>
1, 3, 5, 9, 12, 13, 15, 20, 21	102(a), 102(b)	Abbott
1, 3, 5, 9, 12, 13, 15, 20, 21	103(a)	Abbott

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<sup>2</sup> The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C § 103(a). The ’794 patent resulted from a PCT application filed on March 16, 2006, and that entered the national stage on January 21, 2009. Ex. 1001 at codes (22), (86). We accordingly apply the pre-AIA version of § 103(a) herein.

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §<sup>2</sup></b>	<b>References</b>
1, 3, 5, 9, 12, 13, 15, 20, and 21	102(a), 102(b)	Sonohara
1, 3, 5, 9, 12, 13, 15, 20, and 21	103(a)	Sonohara

#### *D. Real Parties in Interest*

Petitioner identifies only itself as a real party in interest. Pet. 1. In addition to itself, Patent Owner identifies its parent, VL IP Holdings LLC, and VideoLabs, Inc., which is a parent of VL IP Holdings LLC, as real parties in interest. Paper 19, 2.

#### *E. Related Matters*

Both parties identify the following related matters as involving the '794 patent: (1) *Starz Entertainment, LLC v. VL Collective IP, LLC*, No. 1:21-cv-01448 (D. Del.) (“the Starz litigation”); (2) *VideoLabs, Inc. v. Amazon.com, Inc.*, No. 6:22-cv-00079 (W.D. Tex.); and (3) *VideoLabs, Inc. v. Netflix Inc.*, No. 1:22-cv-00229 (D. Del.). Pet. 1; Paper 19, 2–3. Patent Owner additionally identifies *VideoLabs, Inc. v. Apple Inc.*, No. 23-cv-01307 (N.D. Cal.) as involving the '794 patent. Paper 19, 2.

## II. ANALYSIS

### *A. Legal Principles*

Petitioner makes both anticipation and obviousness challenges. To establish anticipation under 35 U.S.C. § 102, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed.

Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). While the elements must be arranged in the same way as is recited in the claim, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990). Identity of terminology between the anticipatory prior art reference and the claim is not required. Prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) 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 on the basis of 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 skill in the art; and (4) when in evidence, objective indicia of nonobviousness, i.e., secondary considerations.<sup>3</sup> *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

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<sup>3</sup> The parties do not address objective indicia of nonobviousness, which accordingly do not form part of our analysis.

reasoning with some rational underpinning to support the legal conclusion of obviousness”)); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

### *B. Level of Ordinary Skill in the Art*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The “person of ordinary skill in the art” is a hypothetical construct, from whose vantage point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). “This legal construct is akin to the ‘reasonable person’ used as a reference in negligence determinations” and “also presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Petitioner proposes that a person of ordinary skill in the art “would have had a bachelor’s degree in electrical or computer engineering, or a closely related scientific field such as computer science, and two years of work experience with streaming multimedia.” Pet. 6. Petitioner adds that “[a] lack of experience can be remedied with additional education (e.g., a Master’s degree), and likewise, a lack of education can be remedied with

additional work experience (e.g., 4-5 years). *Id.* Dr. Freedman supports this articulation. Ex. 1005 ¶ 43.

Patent Owner's expert, Dr. Goodrich, proposes what Patent Owner characterizes as "a somewhat different level," namely "an individual with at least a bachelor's degree in Computer Science or related area and two years of experience developing software tools and/or computer systems for use in the area of audio or video creation, encoding, and/or distribution." PO Resp. 13; Ex. 2007 ¶ 50. Although we agree that the respective articulations are "somewhat different," they are generally similar, and our Decision does not depend on nuanced distinctions regarding the level of ordinary skill. Indeed, Dr. Goodrich describes his proposed articulation as "approximate," such that "more work experience could compensate for less education or more education could compensate for less work experience." Ex. 2007 ¶ 50.

Because we find Petitioner's proposal reasonable, consistent with the level of skill reflected by the prior art, and supported by Dr. Freedman's testimony, we adopt it for this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art). We nevertheless note that we would reach the same ultimate conclusion that claims 1, 3, 5, 9, 12, 13, and 15 (but not claims 20 and 21) have been shown to be unpatentable by a preponderance of the evidence were we to adopt Patent Owner's proposal. *See* PO Resp. 13 ("this Response establishes that Petitioner's arguments fail even under its preferred definition of the level of ordinary skill").

### *C. Claim Construction*

The Board uses “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b) (2019); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). The specification may reveal a special definition given to a claim term by the patentee. *Phillips*, 415 F.3d at 1316. If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998).

Although “Petitioner submits that no claim term requires construction beyond their plain and ordinary meaning,” the parties address three aspects of claim construction in light of arguments advanced by Patent Owner. *See* Pet. 9; PO Resp. 14 (“Patent Owner offers three constructions.”). We address each of these aspects below.

#### *1. Preambles*

Patent Owner raises two claim-construction issues related to the preambles of independent claims 1 and 9: “(1) whether the preambles are limiting; and (2) whether the ‘first data file’ and the ‘second data file’ must be different files.” PO Resp. 21. With respect to the former issue, Patent Owner notes that, in two related district court cases that include the Starz litigation, “all parties agreed that the preamble is limiting.” *Id.* at 27 (citing Ex. 2003, 2; Ex. 2004, 22); Ex. 2009, 2 (district court in Starz litigation

adopting parties' agreement that the preambles are limiting). With respect to the latter issue, the district court also determined that, "[i]n addition to the other limitations set forth in the preamble, the referenced first data file and second data file cannot be the same data file." Ex. 2009, 2 (emphasis omitted). Petitioner conversely contends that the preambles are not limiting and that the recited "first data file" and "second data file" can be the same data file. Reply 10–15.

We need not resolve this dispute because we reach the same ultimate conclusion that Petitioner shows, by a preponderance of the evidence, that claims 1, 3, 5, 9, 12, 13, and 15 are unpatentable, but not that claims 20 and 21 are unpatentable, even if we apply Patent Owner's proposed construction that the preambles are limiting and the first and second data files must be different. *See* Reply 15 (Petitioner asserting that "there is no need to construe the preambles as the prior art meets them even if construed"); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

For purposes of this Decision, we accordingly treat the preambles of independent claims 1 and 9 as limiting, and with the recited “first data file” and “second data file” as distinct data files.<sup>4</sup>

2. “*content-related . . . data segments*”

Challenged independent claims 1 and 9 respectively recite a method and a device “for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file.” Ex. 1001, 7:45–47, 8:26–28. Recitations involving “content-related first data segments” and “content-related second data segments” also appear in the bodies of the claims. *Id.* at 7:48–57, 8:29–37.

Patent Owner proposes that the term “content-related . . . data segments” be construed as “data segments ordered in a file such that they will present the file’s contents in their intended presentation order when rendered sequentially.” PO Resp. 14. According to Patent Owner, such a construction “reflects” that “[t]he inventors acted as their own lexicographers and set forth a definition of ‘content-related . . . data segments’” in the specification of the ’794 patent. *Id.* Specifically, Patent

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<sup>4</sup> In the Institution Decision, we “note[d] that claim 5, which depends from independent claim 1, recites that “media data are represented by at least one of the first data file and the second data file.” Dec. 9. We indicated that “[t]his recitation appears to add a limitation that the first and second data files are distinct, potentially suggesting that such a requirement is not part of the underlying independent claim.” *Id.* at 9–10 (citation omitted). We recognize merit in Patent Owner’s response that “[c]laim 5 instead limits claim 1, from which it depends, solely by specifying that at least one of the first and second data files is ‘media data’” and “does not add a limitation that the first and second data files are distinct.” PO Resp. 29–31.

Owner draws our attention to the following paragraph of the '794 patent's written description:

For every first and second data file D1, D2 there exists in each case a fragmentation description file D1\_BSD, B2\_BSD. Said fragmentation description file D1\_BSD, B2\_BSD specifies how content-related first and content-related second data segments S1, S2 can be obtained from the respective first and second data file D1, D2. *The term "content-related" is understood to mean that first and second data segments have a syntactical meaning within the respective data file*, such as e.g. a plurality of succeeding second data segments represent the speech signal of a specific speaker within a dialog sequence. Furthermore, sections of the data file can also be understood thereby, such as e.g. individual images of a video sequence. In the following description data segments always refer to content-based data segments.

Ex. 1001, 4:9–22 (emphasis added); *see* PO Resp. 14–15.

We agree with Patent Owner's contention that the emphasized sentence defines the term "content-related." *See* PO Resp. 15–16 (Patent Owner arguing that "[t]here are thus three strong indications of lexicography: (1) 'content-related' is set off by quotation marks; (2) the patentee used the word 'is' to describe the term 'content-related'; and (3) the patentee states what 'content-related' is 'understood to mean.'" Nor does Petitioner disagree that the sentence is definitional. *See* Tr. 8:15–16 (referring to the "term content-related as it's defined in the specification"). Indeed, in the Starz litigation, the district court also treated the sentence as definitional, a fact that we find significant as a matter of comity. *See* Ex. 1018, 111:24–112:1 (district court judge stating at *Markman* hearing, "I'm going to adopt . . . the express definition provided in the specification").

But like the district court, we discern insufficient reason to adopt the additional gloss that Patent Owner seeks to apply to the definition of “content-related.” That is, Patent Owner proposes that we additionally construe the phrase “syntactical meaning” within the definitional statement to arrive at Patent Owner’s proposed construction. PO Resp. 16–20. According to Patent Owner, “[t]he specification makes clear, through its use of consistent and repeated examples, that ‘syntactical meaning’ requires a specific relationship between the data segments within a data file: *succeeding* data segments within a data file must be ordered so as to present the content in its intended *sequence* when rendered.” *Id.* at 17 (citing *VirnetX Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1317–19 (Fed. Cir. 2014); *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1368–71 (Fed. Cir. 2003)). Patent Owner adds that the claims, the context provided by the problems solved by the ’794 patent, and the cross-examination testimony of Petitioner’s expert, Dr. Freedman, all support this additional aspect of Patent Owner’s proposed construction. *Id.* at 18–20.

Relying on additional direct testimony by Dr. Freedman, Petitioner counters this position as “improperly import[ing] limitations from the specification that are not required by the claims” and “render[ing] other portions of claim 1 superfluous.” Reply 3 (citing Ex. 1016 ¶ 22); *see* Tr. 10:18–20 (Petitioner explaining at oral hearing that “the syntax information is simply just identification information which is used to find out what the order of the files is. But the identification information does not by itself indicate the order. It’s just an identifier.”). We agree with Petitioner that it would be imprudent to adopt Patent Owner’s additional gloss because, “[w]hile claims must be construed in light of the

specification, . . . limitations from the specification are not to be read into the claims, . . . for “[i]t is the claims that measure the invention.” *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327 (Fed. Cir. 2004) (quoting *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (other citations omitted). It is apparent that the Applicant for the ’794 patent understood how to define terminology recited in the claims, but chose to limit its definition of “content-related” in terms of the broader phrase “syntactical meaning” rather than through narrower specific reference to presentation order. In addition, claims 1 and 9 already specify “sequentially outputting the first and second data segments according to their chronological sequence,” which supports Petitioner’s observation that requiring an additional sequential order to “content-related . . . data segments” renders other portions of claim 1 superfluous. *See* Reply 3.

We accordingly adopt the definitional construction provided by the specification and construe “content-related . . . data segments” as “segments of content data that have a syntactical meaning,” as Patent Owner generally argues.<sup>5</sup> *See* PO Resp. 20–21 (Patent Owner advocating that, “if the Board is not inclined to resolve what it means for data segments to have a ‘syntactical meaning’ within a data file, then the Board should construe this term as ‘data segments that have a syntactical meaning within the respective data file’”); Reply 6 (Petitioner advocating that, “[i]f the Board construes

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<sup>5</sup> Patent Owner argues that “content-related . . . data segments” as “segments of content data that have a syntactical meaning *within the respective data file*.” PO Resp. 20–21 (emphasis added). However, as indicated above in the discussion of the preamble, it is not necessary to decide if the preamble is limiting, and therefore the data segments may or may not be within a respective data file.

‘content-related . . . data segments,’ the Board should adopt the same definitional construction the district court adopted.”).

### 3. “assignment rule”

Challenged independent claim 1 recites that “each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of *an assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments.*” Ex. 1001, 7:51–57 (emphasis added). Challenged independent claim 9 includes a similar recitation. *Id.* at 8:32–37.

Patent Owner proposes that the emphasized phrase in claim 1 (and similarly for claim 9) be construed as an “assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments, *wherein the assignment is not performed by using exact timing information for the content-related data segments.*” PO Resp. 32–41 (emphasis added). That is, Patent Owner proposes that a negative limitation be added to the independent claims because, “[d]uring the prosecution of the ’794 patent, two prior art references were overcome based on arguments by the patentee that the claimed ‘assignment rule’ did not encompass the techniques for synchronizing data segments disclosed in the references.” *Id.* at 32. According to Patent Owner, “[b]y distinguishing the references in this manner, the patentee disclaimed certain subject matter. Namely assignment rules in which the content-related data segments are assigned to one another using exact timing information (such as timestamps).” *Id.* at 32–33. Patent Owner explains that its proposed negative limitation “reflects this disclaimer.” *Id.* at 33.

“As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s reliance on *definitive statements* made during prosecution.” *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed Cir. 2003) (citing *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998)) (emphasis added). As such, a statement during prosecution qualifies as a disavowal of claim scope only if it is “so clear as to show reasonable clarity and deliberateness” and “so unmistakable as to be unambiguous evidence of disclaimer.” *Id.* at 1325 (citations omitted). “Consequently, for prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.” *Id.* at 1325–26. “The party seeking to invoke prosecution history disclaimer bears the burden of proving the existence of a clear and unmistakable disclaimer that would have been evident to one skilled in the art.” *Mass. Inst. of Tech. v. Shire Pharms., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016). And “[s]tatements by the patent owner are not considered in a vacuum; rather, the skilled artisan would look at the record as a whole in assessing claim scope.” *Galderma Lab’s v. Amneal Pharma*, 806 F. App’x 1007, 1010 (Fed. Cir. 2022) (citing *Wang Labs., Inc. v. Toshiba Corp.*, 993 F.2d 858, 867 (Fed. Cir. 1993) (“The prosecution history must be examined as a whole in determining whether estoppel applies.”)).

We have reviewed the prosecution history, which we summarize *supra* § I.A.3., and we have particularly reviewed those portions highlighted by Patent Owner. *See* PO Resp. 32–40. We reach the same conclusion as the district court in the Starz litigation that the standard for attachment of

prosecution disclaimer is not met. *See* Ex. 1018, 109:15–22 (district court stating at *Markman* hearing, “I’ve also carefully reviewed the portions of the prosecution history relied on by VideoLabs, including the patentee’s arguments regarding the *Shin* and *Rosenau* references, and I’m up [*sic*: not<sup>6</sup>] persuaded there was a clear and unmistakable disclaimer of all assignment rules that perform assignments by using exact timing information”).

Consistent with its proposed negative limitation, Patent Owner characterizes the prosecution history as distinguishing *Shin* and *Rosenau* as not “using exact timing information.” PO Resp. 35–36 (“[When discussing *Shin*, b]y asserting that the claimed ‘assignment rule’ does not encompass aligning the content-related data segments using exact timing information, the patentee triggered prosecution disclaimer”), 37 (“The patentee distinguished *Rosenau* because it synchronized using exact timing information, which should not be considered part of the claimed ‘assignment rule’”). But the phrase “exact timing information” is used nowhere in the prosecution history, inconsistent with the requisite “existence of a clear and unmistakable disclaimer.” *See generally* Ex. 1002. Rather, we agree with Petitioner that the prosecution history is more fairly characterized as “the applicant argu[ing] that claim 1 was distinguishable over *Shin* (EX2011) and

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<sup>6</sup> Patent Owner acknowledges that the “district court did not adopt the disclaimer at the claim construction stage.” Sur-reply 13. We additionally note that Patent Owner correctly observes that the district court’s decision is “in no way binding on the Board,” but we disagree that the relevant portion of the record for evaluating prosecution disclaimer was “much more limited” before the district court. *See id.* Whether the requisite “clear and unmistakable” statements were made during prosecution relies most heavily on exactly the same prosecution record before the district court and before the Board.

Rosenau (EX2012) because these references consider time information for synchronization, rather than using an assignment rule for synchronization.” Reply 10 (citing Ex. 1002, 259–260, 334–335; PO Resp. 33–39); *see also* PO Resp. 32 (Patent Owner stating that, “[d]uring prosecution of the ’794 patent, two prior art references were overcome based on arguments by the patentee that the claimed ‘assignment rule’ did not encompass the techniques for synchronizing data segments disclosed in the references”). As Petitioner states, “the applicant never argued, nor did the examiner suggest, that the assignment rule in the ’794 patent is ‘not performed by using exact timing information.’” Reply 10.

While this is sufficient for us to decline to adopt Patent Owner’s proposed negative limitation in construing the recited “assignment rule,” we additionally note our general agreement with Petitioner that the doctrine of claim differentiation better supports Petitioner’s position than Patent Owner’s. *See id.* at 8–9. Claims 20 and 21 of the ’794 patent depend respectively from independent claims 1 and 9, and recite that “the assignment rule is not based on a timestamp,” which Patent Owner identifies as an example of “exact timing information.” Ex. 1001, 9:1–4; PO Resp. 33. “[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898 (Fed. Cir. 2004). According to Petitioner, this doctrine prevents independent claims 1 and 9 from “be[ing] construed to require a negative limitation that is already recited in claims 20–21.” Reply 9 (citing *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006), pre-AIA 35 U.S.C. § 112 ¶ 4; Ex. 1016 ¶ 38).

Patent Owner responds to this argument by observing that the “based on” language of the negative limitation recited in claims 20 and 21 differs from the “using” language of its proposed negative limitation for independent claims 1 and 9. PO Resp. 39–40; Sur-reply 13. Relying on this distinction, Patent Owner contends that “[t]he negative limitation in claims 20 and 21 is broader, and so more limiting, than Patent Owner’s construction.” PO Resp. 39–40. Petitioner disputes that this is the case. *See* Tr. 14:11–15:9 (Petitioner discussing the negative limitation of claims 20 and 21 at oral hearing). Although “any presumption created by the doctrine of claim differentiation ‘will be overcome by a contrary construction dictated by the written description or prosecution history,’” we see insufficient statements in the prosecution history to “dictate” a “contrary construction.” *See Retractable Techs., Inc. v. Becton, Dickinson and Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (quoting *Seachange Int’l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005)).

Moreover, even if we credit Patent Owner’s position, that means only that the claim scope allegedly disclaimed during prosecution is the scope lying between an assignment rule “using” exact timing information and an assignment rule “based on” exact timing information. We discern nothing in the prosecution history that supports such a subtle disclaimer. Certainly, Patent Owner’s more general reliance on arguments that Shin and Rosenau teach the use of synchronization techniques provides neither “clear” nor “unmistakable” support.

We accordingly decline to adopt a construction that imports Patent Owner’s proposed negative limitation into the recited “assignment rule.”

*D. Scope and Content of the Prior Art*

*1. Abbott*

Abbott describes “a system and method for implementing interactive media delivery,” particularly “for media stream indexing and synchronization.” Ex. 1004, 1:8–13. Abbott uses an “object hierarchy” that includes “atoms,” “segments,” “series,” and groups,” and which “provides for sequentially ordering data (concatenating in an ordered sequence) for transmission serially in time, and grouping data in a parallel manner for transmission simultaneously.” *Id.* at 5:47–55. For example “a movie can be partitioned into two atoms, one atom for video, and another atom for audio.” *Id.* at 5:59–61. A segment identifies a portion of an atom between two points in time (which may or may not include the beginning or end of the program material). *Id.* at 6:33–42. “A series is a set of one or more segments that are joined or concatenated for sequential delivery of the corresponding data.” *Id.* at 7:8–10. And “[a] group is formed by joining or grouping series in parallel for parallel, simultaneous delivery of the corresponding data.” *Id.* at 7:16–18.

Abbott describes “a system and method for allowing a viewer to control delivery of the program material to jump or skip (either forward or backward) to selected points in the program material.” *Id.* at 12:57–61. Some program material is divided into frames, and Abbott notes that some encoding protocols, such as MPEG-1, group frames into units that Abbott calls “Groups of Pictures” or “GOPs,” so that “[a] GOP is comprised of one or more frames.” *Id.* at 15:65–66, 17:3–6. In such an environment, “an index file is preferably constructed that allows a viewer to skip only to the

beginning of a GOP, not simply to the beginning of a frame within the GOP.” *Id.* at 17:6–9.

Figure 9 of Abbott is reproduced below.

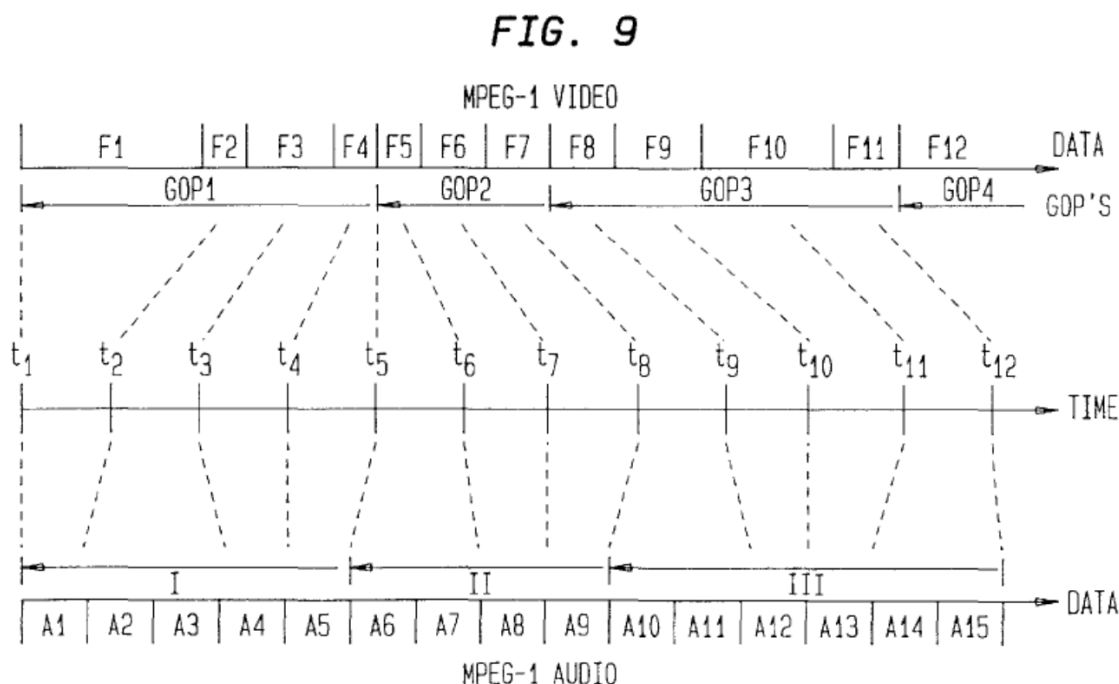


Figure 9 illustrates indexing and synchronization methods described by Abbott. *Id.* at 4:30–34. In this illustration, MPEG-1 video data are divided into twelve frames, shown as F1, F2, . . . , F12, and these twelve frames are grouped into four GOPs, shown as GOP1, GOP2, GOP3, and GOP4. *Id.* at 17:9–13. That is, frames F1–F4 are in GOP1; frames F5–F7 are in GOP2; frames F8–F11 are in GOP3; and frame F12 is in GOP4. *Id.* at 17:13–16.

The time axis is marked at regular intervals  $t_1$ – $t_{12}$ , generally approximating  $1/30$  of a second to correspond to the natural video frame rate of 30 frames/second. *Id.* 17:16–19. “Dashed lines correlate the beginning of each frame with the corresponding time. Frame F1 begins at time  $t_1$ , frame F2 begins at time  $t_2$ , frame F3 begins at time  $t_3$ , etc.” *Id.* at 17:18–20. Although frames F1–F12 all have the same duration, they have varying

sizes, with frame F1 larger than frame F2, for example, because frame F1 contains more data than frame F2. *Id.* at 17:23–26.

MPEG-1 audio has only a single grouping level so that audio frames are not further grouped into GOPs. *Id.* at 17:27–28. Thus, the MPEG-1 audio data shown in Figure 9 are broken down into fifteen audio frames A1–A15, each of which has a fixed frame size so that there is the same amount of data in each audio frame. *Id.* at 17:28–32. Abbott observes that, in this example, “GOP1 spans the time interval from  $t_1$  to  $t_5$ . Audio frames A1, A2, A3, A4, and A5 (set I shown in FIG. 9) come closest to spanning this same time interval.” *Id.* at 19:18–20. Abbott’s synchronization method assigns unique index numbers to each of audio frames A1–A5, but “each of these index numbers points to the same atom-relative byte position that is the beginning of audio frame A1.” *Id.* at 19:21–25. With such synchronization, “the offset or ‘out of sync’ time between audio and video is generally held to be within one frame duration, typically approximately 1/30 sec,” which is considered “tolerable” because “a decoder that receives program material from a media provider is typically capable of resynchronizing such an offset.” *Id.* at 19:40–46. Thus, when a user jumps to various points in an item of program material, this indexing method ensures that a jump is made to the beginning of a GOP with tolerable synchronization of video and audio, and playback resumes according to the object hierarchy configurations described above. *See id.* at 18:66–19:4.

## 2. Sonohara

Sonohara describes “a motion picture reproducing apparatus.” Ex. 1003, 1:11–14. In particular, Sonohara addresses a situation in which

frames of digital image data are recorded in an image file and simultaneously collected audio data are recorded in an audio file. *Id.* at 1:19–28. Rendering such content is “intricate,” Sonohara says, “because the audio data and the image data are read out independently from the two files.” *Id.* at 1:36–38. “Namely, it is necessary to adjust timings for synchronism between the video data and audio data,” which increases “a load imposed on a microprocessor.” *Id.* at 1:39–42.

Figure 1 of Sonohara is reproduced below.

FIG. 1

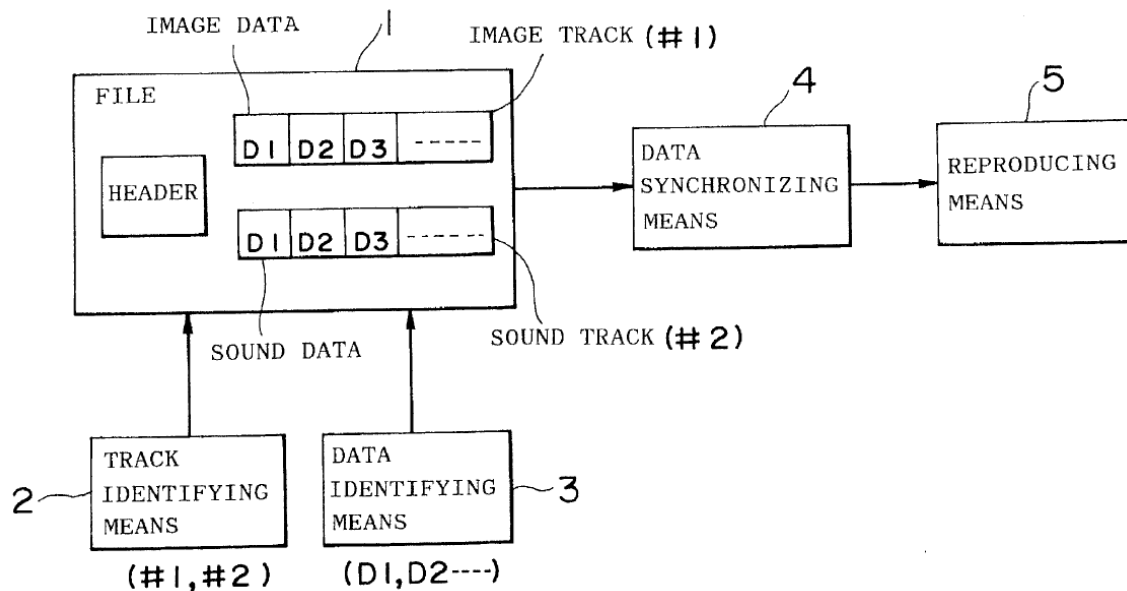


Figure 1 illustrates a “concept” for addressing synchronism of the video and audio data with a “motion picture reproducing apparatus.” *Id.* at 1:44–51. File 1 has an image track that includes (1) “a plurality of frames for a unit time, [] recorded for a predetermined period of time,” (2) a sound track with sound data “recorded for a predetermined period of time corresponding to the image data,” and (3) a header “including control information for

controlling the image data and the sound data.” *Id.* at 1:51–58. Track identifying means 2 imparts track identifying numbers “to the image data and the sound data for every unit time.” *Id.* at 1:59–62. Data identifying means 3 imparts data identifying numbers “representative of an order of data within the image track and the sound track” “to the image data and the sound data for every unit time.” *Id.* at 1:62–65. Data synchronizing means 4 reads “in order, the image data and the sound data in the file 1 based on the control information of the header,” and, at the same time, synchronously outputs the image data and the sound data. *Id.* at 1:66–2:3.

Figure 4 of Sonohara is reproduced below.

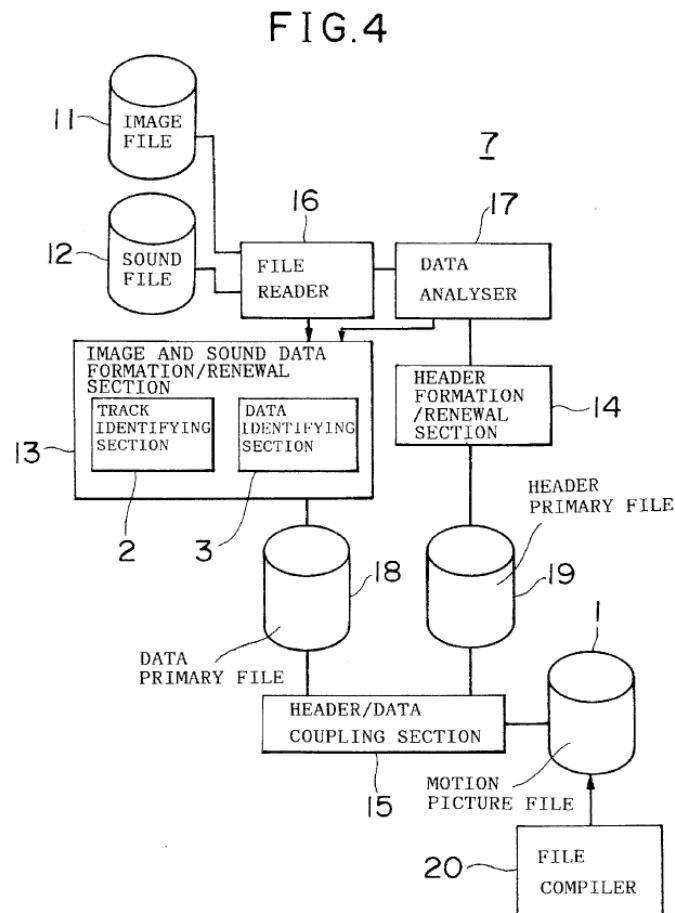


Figure 4 is a block diagram showing a structure for production processing device 7, which produces file 1 of Figure 1. *Id.* at 4:12–13. The apparatus is provided with image and sound files 11, 12 onto which image and audio data for a motion picture have been respectively recorded. *Id.* at 4:13–19. File reader 16 reads the image and audio data, supplying them to data analyzer 17 or image/sound data formation/renewal section 13. *Id.* at 4:21–24. Data analyzer 17 analyzes the image and audio data, providing the analysis result to header formation/renewal section 14 and image data and sound data formation/renewal section 13. *Id.* at 4:25–29.

Image and sound data formation/renewal section 13 “renews and forms the image and sound data from the file reader 16 on the basis of the analysis result of data analyzer 17, and includes a track identifying section 2 and a data identifying section 3,” discussed above in connection with Figure 1. *Id.* at 4:31–35. Header formation/renewal section 14 forms or renews a header, including control information, to form header primary file 19, which is coupled (by header/data coupling section 15) with image and sound data of data primary file 18 to form file 1. *Id.* at 4:55–63.

### *E. Challenges over Abbott*

Petitioner challenges claims 1, 3, 5, 9, 12, 13, 15, 20, and 21 as anticipated by, or unpatentable for obviousness over, Abbott. Pet. 10–36.

#### *1. Independent Claim 1*

In addressing its anticipation challenge against independent claim 1, Petitioner draws the following correspondences between elements recited in the claim and disclosure by Abbott: (1) the recited “content-related first data

segments” and Abbott’s GOPs; (2) the recited “first data file” and Abbott’s video atom file; (3) the recited “content-related second data segments” and Abbott’s audio frames; (4) the recited “second data file” and Abbott’s audio atom file; (5) the recited “device for synchronizing content-related data” and Abbott’s computer system; and (6) the recited “assignment rule” and Abbott’s index files. Pet. 10–13, 14–17, 27–28. For its obviousness challenge, Petitioner contends that Abbott’s “index files at least render obvious the recited *assignment rule*,” and additionally argues that, if not explicitly disclosed by Abbott, it would have been obvious to output Abbott’s video data segments and audio data segments “sequentially” and “together,” as the claim requires. *Id.* at 27–30.

Patent Owner disputes the sufficiency of Petitioner’s analysis as failing to show that “Abbott describes outputting ‘each’ of the second data segments together with an associated first data segment based on an ‘assignment rule,’” as the claim requires. PO Resp. 41. According to Patent Owner, “Abbott at most discloses creating indexes (the alleged assignment rule) that correlate groups of audio frames with video GOPs, using the correlations to synchronize a *single* audio frame with a *single* video GOP when a user jumps to a different point in the media.” *Id.* Patent Owner adds that “processing the subsequent audio frames and video GOPs [is] without any further use of the indexes.” *Id.*

In the Institution Decision, we “agree[d] with Patent Owner’s characterization of Abbott’s disclosure.” Dec. 17. We also “agree[d] that ‘[a] single use of the purported assignment rule, applied to just one audio frame and one video GOP, is plainly insufficient to meet the claim limitation,’ which requires that ‘*each* of the content-related second data

segments is *output together* with an associated one of the content-related first data segments *on the basis of an assignment rule.*” *Id.* (quoting Paper 7 (Preliminary Response) at 27; Ex. 1001, 7:51–54 (limitation of claim 1 with emphases added)); *see* PO Resp. 41 (substantially repeating statement). During the trial, the parties further developed their respective positions. In doing so, Petitioner filed additional supporting testimony by Dr. Freedman. Ex. 1016 ¶¶ 61–68. Patent Owner did not file any supporting expert testimony in support of its position. *See* Reply 27 & n.5 (Petitioner stating that, “[i]n its Response, [Patent Owner] again relied only on attorney argument,” and noting that “Dr. Goodrich’s declaration (EX2007) does not address the *Abbott*-based grounds.”).

The dispute between the parties is ultimately subtle. But even crediting Dr. Freedman’s testimony and recognizing the lack of contrary expert testimony supporting Patent Owner’s position, we continue to conclude that Patent Owner has the better position.

To define the precise dispute, we note that the parties largely agree on how Abbott operates. First, the parties agree that Abbott discloses the creation of indexes that correlate audio segments with a video GOP (which may include multiple video segments). *See* PO Resp. 41 (Patent Owner stating that “Abbott . . . discloses creating indexes that correlate groups of audio frames with video GOPs”); Reply 31 (Petitioner stating that “an index file . . . correlates audio segments with a GOP”).

Second, the parties also agree that, in Abbott, after a user jumps to a different point in the media, playback begins with one of the audio frames and the initial video frame of the index-correlated GOP. *See* PO Resp. 42–43 (Patent Owner noting that “Abbott states this expressly: ‘*When jumping*

to various points in an item of program material, the indexing method of the present invention ensures that a jump is made to the beginning of a GOP” (emphasis by Patent Owner); Reply 31 (Petitioner stating that “*Abbott* explains that ‘synchronization is done by correlating audio frames of the audio data with GOPs of the video data’”).

Third, the parties further agree that, thereafter, normal playback resumes by playing sequential video and audio segments. PO Resp. 43 (Patent Owner stating that, “[f]ollowing this singular use of the indexes, standard playback of content resumes”); Reply 30 (Petitioner discussing that “audio segment A1 is output at the beginning of GOP1,” with “audio frames A2 and A3 . . . output sequentially with frame F2 of GOP1, “audio frame A4 . . . output with frame F3 of GOP1,” and “audio frame A5 . . . output with frame F4 of GOP1”); *see also* Tr. 31:22–32:19 (Petitioner agreeing that “A4 is played because it follows A3, not because it has been assigned to F4” when stating that “yes, they are played out, but they are still assigned to GOP1”).

Nevertheless, despite this substantial factual agreement, the parties disagree whether Petitioner’s identification of Abbott’s index with the recited “assignment rule” is legally sufficient for Abbott’s disclosure to meet the claim requirement that “each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of an assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments.” Reply 28; Ex. 1001, 7:51–57. Because the dispute is legal rather than factual, Dr. Freedman’s factual opinions are of limited evidentiary value in resolving the dispute.

Petitioner reasons that the limitation is met because Abbott’s index correlates multiple audio segments to a single GOP such that there is “assignment” of each of the recited “second data segments” with the associated one of the “first data segments.” Pet. 24–25; Reply 32. The deficiency in Petitioner’s reasoning lies in its position that such assignment is “all that the claim requires.” *See* Tr. 32:5; *see also* Reply 32 (“Claim[] 1 *only* require[s] assignment of each second data segment . . . to one of the first data segments.”).

In contrast, Patent Owner points out that “[c]laim 1 is a method claim that requires the step of ‘outputting’ each of the data segments together based on an assignment rule.” PO Resp. 42. More specifically, Patent Owner contends that “the sequential and chronological ‘outputting’ of the data segments . . . is an active step in claim 1 [and] is expressly required to involve the assignment rule (and ‘each’ data segment).” Sur-reply 18.

We disagree with Patent Owner’s implication that claim 1 requires the act of outputting content-related data segments be based on the assignment rule for *every* second data segment of the second data file (i.e., for every audio frame in the context of Abbott). This implication appears based on Patent Owner’s position that “[d]ata files are . . . central to the invention” because “[t]he term ‘data file’ is part of every disclosed embodiment and appears in the ’794 patent 60 times.” *See* PO Resp. 31–32. Contrary to this argument, the specification of the ’794 patent states that, “[b]y way of the method according to at least one embodiment of the invention, it is made possible in a simple manner to synchronize content-related first and second data segments.” Ex. 1001, 2:36–39. This “embodiment of the invention” does not mention data files. Even treating the preamble as limiting, the

claim requires only that “content-related first data segments of a first data file” be synchronized with “content-related data segments of a second data file.” *Id.* at 7:45–47. Claim 1 does not specify how many content-related data segments the method synchronizes. Even if term “each” means “every,” the phrase “each of the content-related second data segments” refers to “the content-related second data segments” introduced earlier in the body of the claim, which in turn refers to the phrase “content-related second data segments” in the preamble, neither of which specifies a number of second data segments. Therefore, it is possible for this recitation to be met even if only a *plural number* of the respective content-related data segments from the respective data files are synchronized.

Nevertheless, despite this disagreement with what we understand to be Patent Owner’s position, we determine that Petitioner makes an insufficient showing because, as Patent Owner correctly asserts, “Abbott at most discloses creating indexes (the alleged assignment rule) that correlate groups of audio frames with video GOPs, using the correlations to synchronize a *single* audio frame with a *single* video GOP when a user jumps to a different point in the media.” PO Resp. 41. That is, although we disagree with Patent Owner that the claim requires that content-related data segments be output based on the assignment rule for *every* second data segment of the second data file, we find that the claim still requires that they be so output for a *plural number* of second data segments. *See generally* Ex. 1001, 7:45–57 (claim 1 reciting “data segments” in the plural throughout, specifically requiring that “each of the content-related second data segments *is output together* with an associated one of the content-related first data segments *on*

*the basis of* an assignment rule,” Ex. 1001, 7:51–54 (emphases added).<sup>7</sup>) Abbott does not meet this plural aspect of the claim because Abbott discloses synchronizing only a single audio frame with a single video GOP on the basis of Abbott’s index files.

Petitioner’s obviousness theory does not address this deficiency in its anticipation theory. *See* Pet. 27–30 (Petitioner arguing that the recited “assignment rule” is obvious in view of Abbott’s index files, and that it would have been obvious to output Abbott’s video data segments and audio data segments “sequentially” and “together”). That is, Petitioner does not contend that it would have been obvious to output a plural number of the second data segments together with an associated first data segment based on an assignment rule, as the claim requires. Because we determine that Petitioner does not adequately demonstrate that this aspect of the claim is disclosed by Abbott, we conclude that Petitioner does not show, by a preponderance of the evidence, that independent claim 1 is anticipated by Abbott under 35 U.S.C. § 102(a) or 102(b), or is unpatentable under 35 U.S.C. § 103(a) over Abbott.

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<sup>7</sup> In the Institution Decision, we found “instructive” an example presented by Patent Owner in which audio and video index files are followed sequentially for each audio frame. Dec. 18. That example proves to have been more distracting than helpful during the trial. We see little point in discussing the example in this Final Written Decision at length. Nonetheless, we note that Petitioner’s discussion of the example makes clear that Petitioner agrees that, in Abbott, normal playback resumes after a user jumps to a different media point by playing sequential video and audio segments. Reply 29–31.

## 2. *Independent Claim 9*

Petitioner’s analysis of independent claim 9 relies on its analysis of independent claim 1, adapted to account for the fact that claim 9 is directed to a “device” rather than to a “method.” Pet. 33–35. For the limitation requiring that “each of the content-related second data segments be[] output together with an associated one of the content-related first data segments based upon an assignment rule,” Petitioner specifically relies on its analysis of independent claim 1. *Id.* at 35 (“*Abbott* discloses limitation [9.2] for the same reasons set forth with respect to limitation [1.2]”). We agree with Petitioner that this limitation is “substantively identical” to the corresponding limitation recited in independent claim 1. *See id.*

Because we determine in the context of independent claim 1 that Petitioner does not sufficiently demonstrate that this limitation is disclosed by, or would have been obvious over, *Abbott*, we reach the same determination for independent claim 9. That is, we conclude that Petitioner does not show, by a preponderance of the evidence, that independent claim 9 is anticipated by *Abbott* under 35 U.S.C. § 102(a) or 102(b), or is unpatentable under 35 U.S.C. § 103(a) over *Abbott*.

## 3. *Dependent Claims*

Each of claims 3, 5, 12, 13, 15, 20, and 21 depends directly or indirectly from one of independent claims 1 or 9. Ex. 1001, 7:64–8:3, 8:9–11, 8:48–52, 8:56–57, 9:1–4. Petitioner’s analysis of these claims does not address or otherwise remedy the deficiency discussed above with respect to the independent claims. *See* Pet. 30–33, 36. We accordingly conclude that Petitioner does not show, by a preponderance of the evidence, that claims 3,

5, 12, 13, 15, 20, or 21 is anticipated by Abbott under 35 U.S.C. § 102(a) or 102(b), or is unpatentable under 35 U.S.C. § 103(a) over Abbott.

*F. Challenges over Sonohara*

Petitioner challenges claims 1, 3, 5, 9, 12, 13, 15, 20, and 21 as anticipated by, or unpatentable for obviousness over, Sonohara. Pet. 37–57.

*1. Independent Claim 1*

Petitioner’s anticipation challenge against independent claim 1 draws the following correspondences between the recited claim elements and Sonohara’s disclosure: (1) the recited “content-related first data segments” and Sonohara’s time-segmented image data; (2) the recited “first data file” and Sonohara’s image file; (3) the recited “content-related second data segments” and Sonohara’s time-segmented sound data; (4) the recited “second data file” and Sonohara’s sound file; (5) the recited “device for synchronizing content-related data” and Sonohara’s motion picture reproducing apparatus; and (6) the recited “assignment rule” and the control information in Sonohara’s header. Pet. 38, 40–42, 45–45, 48–49.

Petitioner reasons that the data segments are output “sequentially,” as the claim requires, “because, for example, the image data portion #1-02 and sound data portions #2-02 are shown as being output together after the output of image data portion #1-01 and sound data portion #2-01.” *Id.* at 42 (citing Ex. 1005 ¶ 135; Ex. 1003, Fig. 8). With respect to the claim’s further requirement that the data segments be output “according to their chronological sequence,” Petitioner contends that a person of ordinary skill in the art would recognize that this limitation is met because Sonohara

depicts time-segmented data with sequential cardinal numbers. *Id.* at 43–45 (citing Ex. 1005 ¶¶ 133–135; Ex. 1003, Fig. 7). For the recited “assignment rule,” Petitioner directs our attention to Sonohara’s header, which “includ[es] control information for controlling transfer of said image data and said sound data . . . said control information **indicating a relationship between said image data and said sound data . . .**” *Id.* at 48–49 (quoting Ex. 1003, 5:43–44 (alterations by Petitioner)). Dr. Freedman’s testimony supports these positions. Ex. 1005 ¶¶ 133–137, 148–153.

In its alternative obviousness challenge, Petitioner contends that, to the extent not explicitly disclosed by Sonohara, it would have been obvious to output segments according to their chronological sequence and for an assignment rule to have been obvious in light of the control information in Sonohara’s header. Pet. 45, 48–49, 51. Dr. Freedman’s testimony also supports these positions. Ex. 1005 ¶¶ 155–156.

Patent Owner disputes two principal aspects of Petitioner’s analysis for reasons that Petitioner contends “are based entirely on [Patent Owner’s] improper claim constructions.” *See* Reply 15. First, Patent Owner contends that “Petitioner fails to show, and cannot show, that Sonohara describes ‘synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file’ or ‘sequentially outputting . . . the content-related first data segments and the content-related second data segments.’” PO Resp. 47 (citing Ex. 1001, claims 1, 9). This is so, Patent Owner says, because “[t]he single data file disclosed in Sonohara cannot meet the claim requirement of two, different data files.” *Id.* at 50.

But as Petitioner observes, “the ‘single data file’ 1 in Figure 1 [of Sonohara] was created by the file production processing device 7 from the

distinct image file 11 and sound file 12.” Reply 18–19 (citing Ex. 1016 ¶¶ 50–51) (text coloring omitted). Petitioner relies on these distinct files as providing the recited “content-related first data segments” and “content-related second data segments.” Pet. 40; Reply 17–18. Specifically, Petitioner observes that Sonohara describes imparting track identifying numbers for the image and sound tracks, such that “[e]ach portion of data for a unit of time corresponds to a *segment* as recited.” Pet. 38. Patent Owner’s argument that, in making this observation, “Petitioner improperly alternates between relying on the single data file and then relying on the two source data files” is not persuasive. *See* PO Resp. 51. The fact that Sonohara imparts track identifying numbers in its process for producing single data file 1 does not undermine Petitioner’s reliance on segments provided by the originating distinct files. That is, we see nothing improper in Petitioner bolstering its argument with information Sonohara provides in describing its processing to understand the content of the originating files. *See* Reply 19.

In this context, Patent Owner also contends that Petitioner does not adequately show that the segments Petitioner identifies in the originating files are “content-related.” PO Resp. 48–49, 51–53. Although we agree with Patent Owner that the Petition does not specifically address the definitional requirement of “content-related” as having syntactical meaning, we disagree that this “necessarily means that Sonohara does not anticipate any claims.” *Id.* at 48–49; *see also* Sur-reply 19 (“there is a straightforward failure of proof that precludes a finding that Sonohara anticipates or renders obvious any petitioned claim”).

Petitioner replies to Patent Owner’s argument regarding this aspect to explain why its identification of Sonohara’s originating files meets the

requirement. Reply 19–23. In doing so, Petitioner does not alter its theory, such that we disagree with Patent Owner’s characterization of Petitioner’s reply as “a new argument [that] should not be considered by the Board.” *See* Sur-reply 20. Rather, we find Petitioner’s elaboration in its Reply to be properly responsive to Patent Owner’s argument. *See Ericsson Inc. v. Intellectual Ventures I LLC*, 901 F.3d 1374, 1380 (Fed. Cir. 2018) (“[T]he Board has discretion to determine whether a petition for *inter partes* review identified the specific evidence relied on in a reply and when a reply contention crosses the line from the responsive to the new.”).

Specifically, Patent Owner argues that “Petitioner’s mapping fails” because, in Sonohara, the “syntactical meaning is completely different in the single data file than it would be in the source data files.” PO Resp. 51. Patent Owner justifies this position by noting that each of the originating files “only contains audio or image data” and that “[t]he two files also do not have headers with additional syntax information.” *Id.* “Thus,” Patent Owner concludes, “any mapping of the ‘content-related . . . data segments’ to the unit times in Sonohara’s single data file necessarily fails, because the syntactical meaning of its alleged data segments is different than the syntactical meaning of the audio and image data within the separate image and sound files.” *Id.* at 51–52 (citing Ex. 2007 ¶¶ 69–74).

In replying to this argument, Petitioner again uses information Sonohara provides in describing its production of a single file to understand the content of the originating files, and we discern nothing improper in doing so. Reply 19–23. In apparent agreement with Patent Owner, Petitioner observes that, as Sonohara’s Figure 4 (reproduced above) shows, “[t]he file 1 has the syntaxes (e.g., header and track identification numbers)

assigned by the image and sound data formation/renewal section 13 and the header formation/renewal section 14 of the file production processing device 7, which produces the file 1 containing the image and audio data segments shown in Figure 1.” *Id.* at 19–20 (citing Ex. 1003, 4:25–67, Ex. 1016 ¶ 52) (text coloring omitted); *see* PO Resp. 52–53. Where Petitioner departs from Patent Owner’s in inferring syntactical meaning in the originating files from this process. *See* Reply 22 (“the file 1 is created from the image and sound portions of the distinct image file 11 and sound file 12, as shown in Figures 3–4, and the file 1 includes syntax information including header information with track and data identifiers identifying the relationship between the image and audio portions of the file 1, as shown in Figures 1, 3, and 7”). This inference is supported by Dr. Freedman’s testimony, which we credit. Ex. 1016 ¶¶ 52–55. We find Petitioner persuasively shows that Sonohara discloses “content-related . . . data segments” in its originating image and audio files.

Second, Patent Owner contends that Petitioner’s showing with respect to the recited “assignment rule” is insufficient. PO Resp. 57–63. As we note above, Petitioner relies on the control information in Sonohara’s header to meet this limitation. Pet. 48–49. Patent Owner disputes this “[b]ecause Sonohara uses exact timing information to align the first and second content-related data segments.” PO Resp. 57. But this argument relies on Patent Owner’s proposed negative limitation, which we do not adopt. *See supra* § II.C.2; *see also* Reply 26 (Petitioner asserting that Patent Owner’s “theories are incorrectly based on its disclaimer arguments and improperly import limitations not required by the claims”). Patent Owner’s argument does not undermine the Petition under our adopted construction of

“assignment rule” and, as we explain above, Petitioner persuasively shows that the assignment rule reads on Sonohara’s header control information, as supported by Dr. Freedman’s testimony. *See* Ex. 1005 ¶¶ 148–153.

For these reasons, we conclude that Petitioner shows, by a preponderance of the evidence, that independent claim 1 is anticipated by Sonohara under 35 U.S.C. § 102(a) and 102(b), and is unpatentable under 35 U.S.C. § 103(a) over Sonohara.

## *2. Independent Claim 9*

Petitioner presents an analysis of independent claim 9 that adapts its analysis of independent claim 1 to account for claim 9’s recitation of a “device” rather than a “method.” Pet. 55–56. Patent Owner similarly relies on the same reasoning for disputing the sufficiency of Petitioner’s showing under both its anticipation and obviousness theories. PO Resp. 47–63; Sur-reply 19–23. Indeed, Patent Owner addresses claims 1 and 9 collectively in presenting each of its arguments. *See, e.g.*, PO Resp. 47, 49, 50, 53, 55 (referring in each instance to both challenged independent claims).

For the same reasons we discuss for claim 1, we conclude that Petitioner shows, by a preponderance of the evidence, that independent claim 9 is anticipated by Sonohara under 35 U.S.C. § 102(a) and 102(b), and is unpatentable under 35 U.S.C. § 103(a) over Sonohara.

## *3. Dependent Claim 3*

Challenged claim 3 depends from independent claim 1 and recites that “the assignment rule is formed in such a way that, for each of the content-

related second data segments, the content-related first data segments are assigned by specification of a number, the number representing a position of the content-related first data segments within the order of content-related first data segments.” Ex. 1001, 7:67–8:3. For this limitation, Petitioner observes that Sonohara’s header control information (which Petitioner relies on for the “assignment rule” in addressing underlying independent claim 1) includes numerical segment identifiers. Pet. 52–53 (citing Ex. 1003, 5:17–23, 5:41–67, 7:33–50).

Petitioner specifically draws our attention to Sonohara’s explanation of such numerical identifiers in contending that they “represent[] a position of the content-related first data segments within the order of content-related first data segments.” *Id.* For example, in describing Sonohara’s Figure 8, Sonohara explains that “data identifying section 3 gives data identifying numbers 01, 02, 03, . . . for representing the order of the data within the image track 22 or the sound track 23 to the image data and the sound data per unit time.” Ex. 1003, 4:45–48 (ellipsis in original). Sonohara further explains, when describing the same drawing, that “at the time t1, the sound data #2-01 [and] image data #1-01 . . . are read in synchronism” and that “at time t2, the sound data #2-02 [and] image data #1-02 . . . are read in synchronism.” *Id.* at 7:33–50. Petitioner reasons, and we agree, that Sonohara’s numerical identifiers thus represent “a position of the content-related first data segments within the order of content-related first data segments” as the claim recites. Pet. 51–52. Patent Owner does not dispute Petitioner’s showing for claim 3 outside of its arguments directed at underlying independent claim 1.

We conclude that Petitioner shows, by a preponderance of the evidence, that claim 3 is anticipated by Sonohara under 35 U.S.C. § 102(a) and 102(b), and is unpatentable under 35 U.S.C. § 103(a) over Sonohara.

*4. Dependent Claims 5, 12, 13, and 15*

Challenged claim 5 depends from independent claim 1 and recites that “media data are represented by at least one of the first data file and the second data file.” Ex. 1001, 8:9–11. Challenged claim 13 depends from independent claim 1 and (somewhat more broadly than claim 5) recites that “at least one of media data and metadata are represented by at least one of the first data file and the second data file.” *Id.* at 8:50–52. Challenged claims 12 and 15 depend respectively from claims 5 and 13, each reciting that “the media data include at least one of video and audio data.” *Id.* at 8:48–49.

Petitioner addresses these limitations by noting that Sonohara explicitly discloses video data contained in an image file and a sound file, which are examples of “media data.” Pet. 53–54 (citing Ex. 1005 ¶¶ 161–163). Patent Owner does not dispute these showings outside of its arguments directed at underlying independent claim 1.

Petitioner’s showing is persuasive, and we conclude that Petitioner shows, by a preponderance of the evidence, that claims 5, 12, 13, and 15 are anticipated by Sonohara under 35 U.S.C. § 102(a) and 102(b), and are unpatentable under 35 U.S.C. § 103(a) over Sonohara.

5. *Dependent Claims 20 and 21*

Challenged claims 20 and 21 depend respectively from independent claims 1 and 9, each reciting that “the assignment rule is not based on a timestamp.” Ex. 1001, 9:1–4. Petitioner contends that “*Sonohara* discloses, or at least renders obvious, this limitation” because “*Sonohara*’s assignment rule (i.e., the synchronization information in the header), uses ‘data identifying numbers,’ and does not use a timestamp.” Pet. 54–55, 57 (citing Ex. 1005 ¶¶ 166–169, 178). In doing so, Petitioner relies on Dr. Freedman’s testimony that a “timestamp” as recited in the claim “would be understood to be an absolute time or time range, i.e., 0:00.00–0:01.00.” Ex. 1005 ¶ 73. According to Dr. Freedman, “*Sonohara* does not use absolute times or time ranges, but instead uses the data identifying numbers, which are not limited to alignment with time units.” *Id.*

Patent Owner disputes Petitioner’s reasoning:

*Sonohara* does not meet this claim limitation because the ‘assignment rule’ that Petitioner alleges relies on is based on two timestamps: (1) the unit times of audio data and image data, which are all the same exact time duration, and (2) the specific points in time at which corresponding unit times are reproduced.

PO Resp. 63–64. In evaluating the parties’ respective arguments, we find Dr. Goodrich’s testimony particularly helpful. *See* Ex. 2007 ¶¶ 92–94 (cited by PO Resp. 65). For example, he directs our attention to *Sonohara*’s discussion of Figure 8, in which *Sonohara* explains that, “at the time  $t_1$ , the sound data #2-01 for one second and the new image data #1-01 for 0.5 seconds and the image data #1-01 for 0.5 seconds are read in synchronization.” *Id.* ¶ 92; Ex. 1003, 7:33–36. This and other examples

provided by Sonohara support Dr. Goodrich's opinion that a person of ordinary skill in the art "would understand that the number and duration header information disclosed in Sonohara [] correspond to a timestamp." *See* Ex. 2007 ¶ 92 (citing Ex. 1003, 5:57–65, 6:53–67, 7:33–65). We also agree with Dr. Goodrich that Dr. Freedman's testimony is consistent with this understanding. *See id.* ("Further, Dr. Freedman apparently agrees with this understanding of a [person of ordinary skill in the art] with respect to timestamps, in that he states, 'In the context of the '794 Patent, a *timestamp* or "time code" would be understood to be an absolute time or time range.' EX1005 (Freedman Decl.) at 167 citations omitted.").

Dr. Goodrich's testimony thus adequately supports Patent Owner's contention that, "[a]pplying [Dr. Freedman's] understanding of a timestamp, which Petitioner adopts (Pet., 55 n.2), the alleged 'assignment rule' is based on two different timestamps." *See* PO Resp. 64. Specifically, Patent Owner notes that "Sonohara discloses outputting corresponding unit times . . . that have a predetermined, constant time duration . . . at specific, pre-set times . . . to assign the alleged content-related data segments to one another," such that "[t]he unit times correspond to a time range, which is a timestamp," and "the pre-set times correspond to absolute times, and so are also time stamps." *Id.* It appears that Petitioner's arguments may be the result of applying an unduly narrow understanding of the "based on" language in the claim, but Petitioner does not clearly explain what meaning it is using for that phrase. *See* Pet. 54–55, 57; Reply 26–27.

We conclude that Petitioner does not show, by a preponderance of the evidence, that claim 20 or 21 is anticipated by Sonohara under 35 U.S.C.

§ 102(a) or 102(b), nor than claim 20 or 21 is unpatentable under 35 U.S.C.  
§ 103(a) over Sonohara.

### III. CONCLUSION<sup>8</sup>

The table below summarizes our conclusions as to the challenged claims.

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>Reference(s) /Basis</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
1, 3, 5, 9, 12, 13, 15, 20, 21	102(a), 102(b)	Abbott		1, 3, 5, 9, 12, 13, 15, 20, 21
1, 3, 5, 9, 12, 13, 15, 20, 21	103(a)	Abbott		1, 3, 5, 9, 12, 13, 15, 20, 21
1, 3, 5, 9, 12, 13, 15, 20, 21	102(a), 102(b)	Sonohara	1, 3, 5, 9, 12, 13, 15	20, 21
1, 3, 5, 9, 12, 13, 15, 20, 21	103(a)	Sonohara	1, 3, 5, 9, 12, 13, 15	20, 21
<b>Overall Outcome</b>			1, 3, 5, 9, 12, 13, 15	20, 21

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<sup>8</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

#### IV. ORDER

It is

ORDERED that, based on a preponderance of the evidence, claims 1, 3, 5, 9, 12, 13, and 15 of U.S. Patent No. 8,605,794 B2 have been shown to be unpatentable;

ORDERED that, based on a preponderance of the evidence, claims 20 and 21 of U.S. Patent No. 8,605,794 B2 has not been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-01086  
Patent 8,605,794 B2

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