

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC.,
Petitioner,

v.

VELOS MEDIA, LLC,
Patent Owner.

IPR2019-00757
Patent 9,930,365 B2

Before MONICA S. ULLAGADDI, JASON W. MELVIN, and
AARON W. MOORE, *Administrative Patent Judges*.

ULLAGADDI, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining None of the Challenged Claims to be Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Unified Patents Inc.¹ (“Petitioner”) requested an *inter partes* review of claims 1–20 (the “challenged claims”) of U.S. Patent No. 9,930,365 B2 (Ex. 1001, “the ’365 patent”). Paper 2 (“Petition” or “Pet.”). Velos Media, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

On September 11, 2019, we entered a Decision on Institution (“Institution Decision” or “Inst. Dec.,” Paper 7) instituting an *inter partes* review as to all of the challenged claims on all of the grounds set forth in the Petition.

After institution of trial, Patent Owner filed a Patent Owner Response (“PO Resp.,” Paper 18), to which Petitioner filed a Reply (“Pet. Reply,” Paper 26).² Patent Owner filed a Sur-reply (“Sur-Reply,” Paper 31).³ A hearing was held on June 16, 2020. The transcript of the hearing has been entered into the record. Paper 39 (“Transcript” or “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This final written decision is issued pursuant to 35 U.S.C. § 318(a). As explained below, we determine Petitioner has not shown by a preponderance of the evidence that claims 1–20 of the ’365 patent are unpatentable.

II. BACKGROUND

A. *Related Proceedings*

Petitioner and Patent Owner indicate that the ’365 patent is not asserted in any related district court proceedings. In particular, Petitioner

¹ Petitioner has informed the Board that it has changed its name to Unified Patents, LLC. Paper 20.

² Ex. 1024 is the redacted version of the Patent Owner’s Response. Ex. 1023 is the redacted version of the Petitioner’s Reply.

³ Ex. 1038 is the redacted version of Patent Owner’s Sur-reply.

states that it “is unaware of any law suits in which the ’365 Patent is asserted or challenged” (Pet. 64), and Patent Owner states that, at the time of the Preliminary Response, it “has not filed a patent infringement lawsuit” (Prelim. Resp. 1).

Although Patent Owner states that “Petitioner has now filed thirteen IPRs against Velos patents,” specifically, IPR2019-00194, IPR2019-00635, IPR2019-00660, IPR2019-00670, IPR2019-00707, IPR2019-00710, IPR2019-00720, IPR2019-00749, IPR2019-00757, IPR2019-00763, IPR2019-00806, IPR2019-00883, and IPR2019-01130, other than the instant proceeding (IPR2019-00757), none of these proceedings appear to concern either the ’365 patent or a patent related to the ’365 patent. *Id.* at 1–2 n.1.

B. The ’365 Patent (Ex. 1001)

The ’365 patent issued on March 27, 2018, based on application No. 15/696,263, which claims priority to, among other applications, provisional application Nos. 61/102,787 filed October 3, 2008, 61/144,357 filed January 13, 2009, and 61/166,631 filed April 3, 2009. Ex. 1001, codes (21), (45), (60). The ’365 patent concerns techniques for encoding and decoding digital video data using macroblocks. *Id.* at code (57). Figure 12 of the ’365 patent is reproduced below.

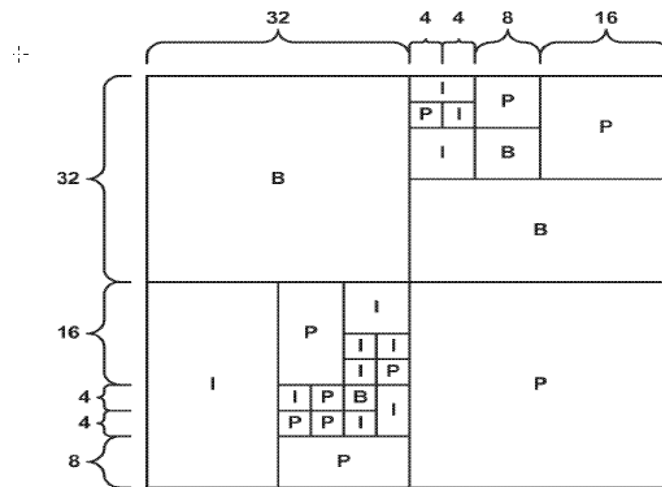


Figure 12 of the '365 patent illustrates a 64×64 pixel macroblock that has been partitioned into sub-partitions of varying sizes, each of which has an encoding mode. *Id.* at 6:22–24

“[V]ideo encoder 20 may receive a set of various-sized blocks for a coded unit,” which “may comprise a video frame, a slice, or a group of pictures (also referred to as a ‘sequence’),” and includes a macroblock or a partition of a macroblock. *Id.* at 12:19–21, 38:45–47, 52–54. As shown in Figure 12, a large, 64×64 pixel macroblock has different sub-block partitions within the same large macroblock; these sub-blocks have different coding modes for each partition. *Id.* at 33:35–37, 33:47–49. The differently coded sub-blocks include, for example, a 32×32, B-coded partition and an 8×8, I-coded partition. *Id.* at 34:26–31. The encoder “generate[s] block-type syntax information that . . . identifies the partitions and the encoding modes used to encode the partitions.” *Id.* at 13:56–58. The syntax information further “includes values corresponding to the largest block in the coded unit and the smallest block in the coded unit.” *Id.* at 39:21–24.

A video decoder receives the “coded unit and the syntax information for the coded unit from the video encoder.” *Id.* at 39:27–28. The video decoder “determine[s] when a block does not have further separately encoded sub-partitions based on the indication in the coded unit syntax information of the smallest encoded partition.” *Id.* at 39:37–41. For example, when “the largest block is 64×64 pixels and the smallest block is also 64×64 pixels, then it can be determined that the 64×64 blocks are not divided into sub-partitions smaller than the 64×64 size.” *Id.* at 39:41–44. Alternatively, when “the largest block is 64×64 pixels and the smallest block is 32×32 pixels, then it can be determined that the 64×64 blocks are divided into sub-partitions no smaller than 32×32.” *Id.* at 39:44–48.

Using syntax information that identifies the encoding mode, the decoder “decode[s] the video block based on the block-type syntax information” that identifies the encoding mode. *Id.* at 14:19–21.

C. Challenged Claims

Challenged claims 1, 7, and 15 are independent. Challenged claims 2–6, 8–14, and 16–20 depend from claims 1, 7, and 15. Independent claim 1 is illustrative and is reproduced below.

1. A method of decoding video data, the method comprising:

decoding a first syntax element associated with a sequence of pictures of the video data, the first syntax element representing a minimum size of blocks of the sequence of pictures;

decoding a second syntax element, separate from the first syntax element, associated with the sequence of pictures, the second syntax element representing a maximum size of the blocks of the

sequence of pictures, wherein the maximum size is greater than 16×16 pixels;

determining that a current block of a plurality of blocks of the sequence of pictures has a starting size equal to the maximum size using the second syntax element;

partitioning the current block to obtain a plurality of sub-blocks for the current block, wherein partitioning comprises determining that a sub-block of the sub-blocks of the current block does not include further separately encoded sub-partitions when the size of the sub-block is equal to the minimum size indicated by the first syntax element;

decoding a third syntax element, separate from the first syntax element and the second syntax element, the third syntax element representing an encoding mode used to encode the sub-block, wherein the encoding mode comprises one of an intra-prediction mode and an inter-prediction mode; and

decoding the sub-block according to the encoding mode, without further partitioning the sub-block, based on the determination that the block does not include further separately encoded subpartitions.

Ex. 1001, 40:28–59.

D. Proposed Grounds of Unpatentability

Petitioner supports the following challenges with the Declaration of

Dr. Immanuel Freedman (Ex. 1009).

Reference(s)	Basis ⁴	Claims Challenged
U.S. Patent No. 5,999,655 ⁵ to Kalker et al. (“Kalker,” Ex. 1006) and U.S. Publication No. 2005/0123282 A1 ⁶ to Novotny et al. (“Novotny,” Ex. 1007)	§ 103	1–4, 6–10, 12–18, 20
Kalker, Novotny, and U.S. Patent No. 6,084,908 ⁷ to Chiang et al. (“Chiang,” Ex. 1008)	§ 103	5, 11, 19

III. ANALYSIS

A. *Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented 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;

⁴ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16, 2013. Because the effective filing date of the ’365 is before that date, our citations to Title 35 are to its pre-AIA version. *See* Ex. 1001, codes (22), (60), (63).

⁵ Kalker issued on December 7, 1999. Ex. 1006, code (45). Kalker’s issue date predates the earliest possible priority date of the ’365 patent. *See* Ex. 1001, codes (60), (63).

⁶ Novotny published on June 9, 2005. Ex. 1007, code (45). Novotny’s publication date predates the earliest possible priority date of the ’365 patent. *See* Ex. 1001, codes (60), (63).

⁷ Chiang issued on July 4, 2000. Ex. 1008, code (45). Chiang’s issue date predates the earliest possible priority date of the ’365 patent. *See* Ex. 1001, codes (60), (63).

(2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“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) (citing 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”)). The burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in an *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Thus, to prevail in an *inter partes* review, Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham*, 383 U.S. at 17. Petitioner contends that the ordinarily skilled artisan would have had at least

[A] person having, as of October 3, 2008: (1) at least an undergraduate degree in electrical engineering or closely related scientific field, such as physics, computer engineering, or computer science, or similar advanced post-graduate education in this area; and (2) two or more years of experience with video or image processing systems.

Pet. 12 (citing Ex. 1009 ¶¶ 30–32). Patent Owner does not propose a definition for the level of ordinary skill in the art. *See generally* PO. Resp.

We determine that the level of ordinary skill proposed by Petitioner is consistent with the '365 patent and the asserted prior art and we adopt that definition. We note, however, the conclusions and findings rendered in this decision do not turn on selecting the particular level of ordinary skill in the art that Petitioner proposes.

C. Claim Construction

We apply the same claim construction standard used by Article III federal courts and the ITC, both of which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51340, 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). Accordingly, we construe each challenged claim of the '365 patent to generally have 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.

Petitioner does not propose particular constructions for any claim terms. Pet. 13–14 (“At this time, Petitioner proposes that the claims be

construed pursuant to their plain and ordinary meaning in light of the specification of the '365 Patent.”). In its Preliminary Response, Patent Owner proposed constructions for four claim limitations, “a first syntax element,” “a second syntax element,” “a third syntax element,” and “a second syntax element, separate from the first syntax element.” We preliminarily construed these terms in our Institution Decision. Dec. 8–15.

In its Response, Patent Owner does not allege error with our preliminary constructions or propose constructions for any other term. *See generally* PO Resp. Petitioner does not address these terms in its Reply. *See generally* Pet. Reply. Having reviewed the complete record developed during trial, we do not discern a dispute between the parties regarding these terms and we do not need to construe these terms to decide the issues before us. *See, e.g., 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))).

D. Obviousness over Kalker and Novotny

Petitioner contends that claims 1–4, 6–10, 12–18, and 20 are unpatentable under 35 U.S.C. § 103 as obvious over Kalker and Novotny. Pet. 14–59. For the reasons that follow, we are not persuaded that the evidence supports Petitioner’s arguments and Dr. Freedman’s testimony. Accordingly, we are not persuaded that Petitioner establishes unpatentability of claims 1–4, 6–10, 12–18, and 20 by a preponderance of the evidence.

1. Overview of Kalker (Ex. 1006)

Kalker concerns a video encoding and decoding technique which “encod[es] [a] segmentation map” of a video picture by “assigning a block-size code to each block size . . . to obtain a one-dimensional series of block-size codes.” Ex. 1006, 1:46–50; *see id.* at 6:10–25 (Claim 1).

Figure 9 of Kalker is reproduced below.

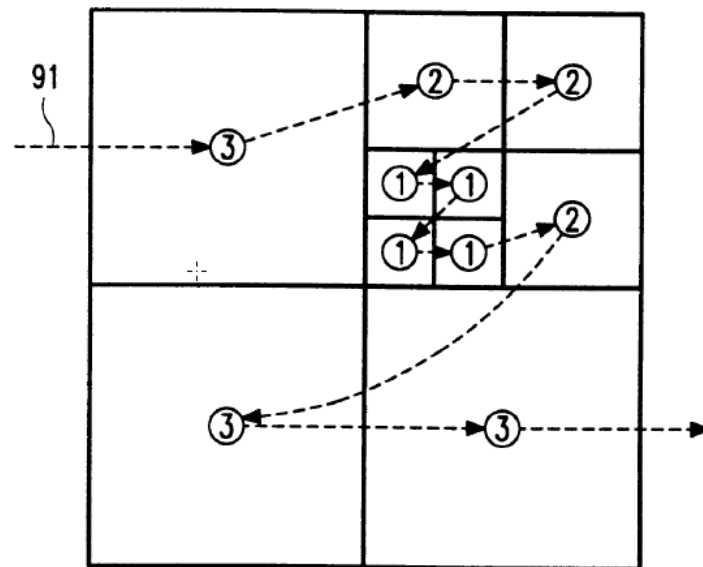


Figure 9 shows a segmentation map of a video picture. *Id.* at 2:36–37.

As shown in Figure 9, a “plurality of variable-size blocks of a picture constitute a ‘segmentation map.’” *Id.* at 2:66–67. In the segmentation map, “[e]ach block size is represented by a block-size code S,” for example, “S=1 for 4*4 blocks, S=2 for 8*8 blocks and S=3 for 16*16 blocks.” *Id.* at 3:30–33. The block sizes in the segmentation map are represented by a bit stream representing a sequence of block sizes. *See id.* at 5:58–60. The sequence of block sizes is generated via a “scanning circuit [that] scans the segmentation map on the basis of a grid corresponding to the smallest block size,” as shown by scanning pattern 91. *Id.* at 3:22–24; 5:36–38. For example:

First, the top left 16*16 block is analyzed. As this block is not further divided into smaller blocks, the block size code S=3 is generated. Then, the next (top right) 16*16 block is analyzed. This block is segmented into smaller blocks and will now completely be scanned before proceeding to the next 16*16 block. More particularly, the top left 8*8 block is now analyzed. As it is not further divided, the block size code S=2 is generated. Similarly, the block size code S=2 is generated for the next (top right) 8*8 block. Then the bottom left 8*8 block is analyzed. It is segmented into smaller blocks and will thus be scanned before proceeding to the next 8*8 block. Accordingly, an S=1 block size code is generated for the top left 4*4 block, the top right 4*4 block, the bottom left 4*4 block and the bottom right 4*4 block, successively.

Id. at 5:38–52. The scanning of the segmentation map of Figure 9 “yields the following sequence of block size codes: 3,2,2,1,1,1,1,2,3,3,EOS[end-of-scan code].” *Id.* at 5:58–60. The sequence of block code sizes is decoded via a corresponding segmentation map-decoding circuit and a segmentation map reconstruction circuit in which “an element is extracted from the sequence” to assign “the value S to each grid location within said block.”

Id. at 4:36–37, 43–45, 53–59.

2. Overview of Novotny (Ex. 1007)

Novotny concerns video encoding and decoding techniques. Ex. 1007 ¶ 22. In particular, Novotny describes “a picture (e.g., an image, a frame, a field, etc.) 70i may be divided (e.g., segmented, partitioned, etc.) into a number of macroblocks 86.” *Id.* ¶ 31 (referring to Fig. 3, not reproduced). Novotny further describes that encoded video includes macroblock syntax elements “that may include but are not limited to: macroblock type[s]” (*id.* ¶ 37) which “generally include, but are not limited to, Intra16×16 [and] Intra4×4” (*id.* ¶ 50).

3. *Independent Claim 1*

Independent claim 1 recites “decoding a first syntax element associated with a sequence of pictures of the video data, the first syntax element representing a minimum size of blocks of the sequence of pictures.” Claim 1 further recites “partitioning the current block to obtain a plurality of sub-blocks for the current block, wherein partitioning comprises determining that a sub-block of the sub-blocks of the current block does not include further separately encoded sub-partitions when the size of the sub-block is equal to the minimum size indicated by the first syntax element.”

a) *Petitioner’s Contentions*

According to Petitioner, “Kalker teaches an encoding-side transmitting station that *assigns* particular size values to multiple block-size codes (i.e., *syntax elements*) for an entire coded unit (e.g., a picture or frame *in Kalker*)” and transmits these block-size codes to a decoding-side receiving station, which “decode[s] the data and reconstruct[s] the image.” Pet. 26–27 (citing Ex. 1006, 3:8–18, 1:20–24, 3:31–35, 4:55–56, claims 1, 8). More particularly, Petitioner asserts that:

[T]he encoder sets a block-size code of “3” to represent the largest blocks in the coded unit, such as 16×16 blocks, a block-size code of “2” can represent intermediary blocks, such as 8×8 blocks, and a block-size code of “1” represents the smallest, or minimum block size in the coded unit, e.g., 4×4 blocks.

Pet. 27 (citing Ex. 1006, 3:25–34, 5:36–57, 4:43–67). Petitioner also asserts that “[b]ecause the block-size codes may vary from picture to picture, the encoder must not only communicate” which particular block-size code (e.g., 1 or 3) is assigned to a given partition in a current picture, but “it must also communicate what value the block-size code represents for a given picture

(e.g., 4×4 , 8×8 , 16×16).” *Id.* at 15–16 (citing Ex. 1006, 5:15–21 (describing alternatives for block-size codes, such as $S=3$ corresponding to an 8×8 block); Ex. 1009 ¶ 49).

Noting that Kalker does not explicitly disclose the assigning and transmitting of block-size codes at the *decoder* side, Petitioner further asserts “Kalker teaches both encoding and decoding video data” and that while “[i]ts most detailed discussion is provided from the perspective of the encoding process,” a person having ordinary skill in the art (“PHOSITA”) would have recognized “*Kalker*’s teachings of its encoding steps would be reversed by a corresponding decoder device.” Pet. 25 (citing-in-part Ex. 1006, 2:43–3:5, 3:8–18, 3:36–67, 4:36–42, 4:48–50; Ex. 1009 ¶ 52).

To teach the “partitioning” limitation, Petitioner quotes the following portion of Kalker:

Then, the next (top right) 16×16 block is analyzed. This block is segmented into smaller blocks and will now completely be scanned before proceeding to the next 16×16 block. More particularly, the top left 8×8 block is now analyzed. As it is not further divided, the block size code $S=2$ is generated. Similarly, the block size code $S=2$ is generated for the next (top right) 8×8 block. Then the bottom left 8×8 block is analyzed. It is segmented into smaller blocks and will thus be scanned before proceeding to the next 8×8 block. Accordingly, an $S=1$ block size code is generated for the top left 4×4 block, the top right 4×4 block, the bottom left 4×4 block and the bottom right 4×4 block, successively.

Pet. 43 (quoting Ex. 1006, 5:40–52, referring to Fig. 9) (emphasis omitted). Petitioner contends Kalker teaches that “when an $S=2$ block is partitioned, the sub-blocks are each assigned $S=1$ without the need for performing further scanning of the $S=1$ block for sub-partitions.” *Id.* at 44–45 (citing Ex. 1006, 5:47–52). According to Petitioner, the ’365 patent makes the

claimed “determination” in the same way: “[w]hen the size of a sub-block is equal to the minimum size, it is recognized that the block does not have separately encoded sub-partitions.” *Id.* at 45 (citing Ex. 1001, 39:37–41, 39:5–12).

Petitioner further contends that,

[I]n Kalker, the decoder partitions the current block (i.e., a block of the scanning grid that has a starting size equal to the maximum size, represented by $S=3$ and equal to 16×16 pixels), to obtain a plurality of sub-blocks (8×8 and 4×4 blocks in the exemplary embodiment) for the current block, wherein partitioning comprises determining that a sub-block (4×4 block) of the sub-blocks (8×8 blocks) of the current block (16×16 block) does not include further separately encoded subpartitions when the size of the sub-block is equal to the minimum size (4×4 pixels) indicated by the first syntax element ($S=1$).

Id. (citing Ex. 1006, 5:31–57, Fig. 9).

b) *Patent Owner’s Contentions*

Patent Owner argues that

Even if the Board were to find that map encoder 4 and scanning circuit 41, both of which are part of *Kalker’s encoder*, are performing some sort of partitioning process comparable to Claim 1’s “partitioning the current block” step, such a finding would necessarily mean that such partitioning is not being performed in *Kalker’s decoder*.

PO Resp. 40. According to Patent Owner, “Petitioner’s efforts to prove that Kalker’s map *encoder* is performing a partitioning step in order to show that the map *decoder* is performing the same step (i.e., not an inverse step) are confusing at best.” *Id.* at 42.

Patent Owner further argues that reconstruction of the segmentation map at Kalker’s map decoder “is not a segmentation process” because “[n]othing is being divided or partitioned” and, “[i]n fact, the process is

additive,” because “[d]ifferent sized map elements representing different size picture blocks (i.e., elements of size 3, 2, and 1) are being used” in the decoder “to *reconstruct* the segmentation map.” *Id.* at 50 (emphasis added); *see also id.* at 43–49 (illustrating Patent Owner’s contention as to reconstruction of the segmentation map).

c) Petitioner’s Responsive Contentions

Petitioner responds that “[w]hen the block size code S=3 is applied by the decoder, the stream of *pixel data* is divided into a 16x16 block, not a 4x4 array of a segmentation map consisting of 3’s as shown in PO’s diagram.” Pet. Reply 8 (citing PO Resp. 44). And, Petitioner submits, Patent Owner’s “suggestion that this map is simply ‘read’ by the decoder and involves no partitioning of actual image data is demonstrably false” because “Kalker expressly teaches that image data ‘is segmented into smaller blocks’ by the encoder, and that the *corresponding process results in the segmentation of picture data* by the decoder.” *Id.* at 8–9 (citing Ex. 1006, 3:8–18; 5:38–57) (emphasis added).

d) Discussion

Petitioner argues that, because “the partitioning process [at the encoder] in Kalker scans a current block in the grid with a starting size equal to the maximum size . . . and then partitions down through an iterative partitioning process potentially to the smallest block size,” “a PHOSITA would have recognized that the decoder is performing the inverse of these steps.” Pet. 40 (citing Ex. 1009 ¶¶ 43, 52; Ex. 1006, 4:43–50) (emphasis omitted). Petitioner’s position—that the inverse of an encoder-side, iterative partitioning process is also partitioning, but at the decoder side—is not supported by sufficient evidence for the reasons discussed below.

Kalker discloses few specific details of its decoder. *See generally* Ex. 1006; *see* Pet. 25 (acknowledging Kalker’s “most detailed discussion is provided from the perspective of the encoding process, while much of the decoding process is generally described with respect to the information and data received from the encoder”). Petitioner nevertheless contends “a PHOSITA would have recognized, *Kalker*’s teachings of its encoding steps would be reversed by a corresponding decoder device.” *Id.* (citing-in-part Ex. 1009 ¶ 52; Ex. 1006, 4:48–50 (scanning order performed by decoder corresponds to scanning order in the encoder)). In his supporting testimony, Dr. Freedman testifies that

[A] PHOSITA would have recognized . . . that Kalker’s decoding unit is simply reversing the encoding process in both embodiments given Kalker’s teachings describing that “scanning order [employed by the decoder] corresponds to the scanning order in the encoder.” *Id.* at 4:48-50. A PHOSITA would therefore have recognized that *this same concept of the decoder performing a reconstruction corresponding to the scanning order of the encoder* applies to the embodiment described generally at 5:31-57 of Kalker and illustrated in Figure 9—because the encoder scans a grid based on the largest block size to partition blocks, a decoder generally would be programmed to follow instructions provided by an encoder to inverse the encoding process using the largest block size in this embodiment.

Ex. 1009 ¶ 52 (emphasis added).

Dr. Freedman further testifies that “[i]n one embodiment, the encoder identifies the *largest* block size and builds the map (and the decoder reconstructs the map) on the basis of a grid corresponding to the *largest* block size, such as a 16×16 block, denoted by S=3.” *Id.* ¶ 50 (citing Ex. 1006, 3:19–25, 4:36–47, 5:29–65, Fig. 5, 7, 9). Dr. Freedman further testifies that “[i]n the example of this embodiment, the largest block size is

represented by code $S=3$, which is a 16×16 starting block size for the coding/decoding grid,” and that “[a] grid block with starting size of 16×16 may be subdivided into smaller blocks down to a minimum block size, represented by the block-size code $S=1$ (e.g., 4×4).” *Id.* (citing Ex. 1006, 5:29–65, Fig. 9).

Dr. Freedman’s testimony cited in support of Petitioner’s contentions for the “partitioning” limitation is unpersuasive as it is conclusory and not supported by underlying evidence. *See* 37 C.F.R. § 42.65 (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). The portion of Kalker in column 3 cited in support of Dr. Freedman’s testimony concerns scanning circuit 41, which scans a segmentation map based on the a grid having a block size corresponding to the largest or smallest block size to generate a sequence of block size codes S at the *encoder* side. The cited portion in column 5 and Figure 9 of Kalker provides further detail on how the segmentation map is generated, but does not specifically disclose whether that process occurs at the decoder. Only the cited portions in column 4 and Figures 5 and 7 concern a process occurring at the decoder side. Ex. 1006, 4:36–47 (“The decoded sequence of block-size codes S is applied to a segmentation map reconstruction circuit 91. This circuit comprises a segmentation map memory having a grid corresponding to the smallest block size (4×4 in the present example).”). We are not persuaded that Kalker supports Petitioner’s position because the evidence cited by Petitioner in support of its above-quoted contentions and underlying Dr. Freedman’s testimony does not sufficiently support finding that Kalker teaches or suggests “partitioning the current block to obtain a plurality of

sub-blocks” in which the current block is “a current block of a plurality of blocks of the sequence of pictures” after “decoding a first syntax element” and “decoding a second syntax element,” as recited in claim 1.

Even assuming that Kalker’s segmentation map, during its creation, is scanned based on a grid having the largest block size, such that sub-blocks of pixel data are partitioned from larger blocks of pixel data, there is insufficient evidence that supports the proposition that the inverse action on the decoder side would *also* be partitioning larger blocks of picture data into sub-blocks of picture data. Despite this, Petitioner would have us find that, after Kalker’s encoder partitions, for example, a 16×16 block of pixels to obtain 8×8 and 4×4 sub-blocks, the encoder would convey information to the decoder so that the decoder could recreate the process from the encoder side by *again* partitioning the 16×16 block of pixels to obtain 8×8 and 4×4 sub-blocks. We find that Patent Owner has the better position—that instead of being partitioned or divided, pixel data is subject to an additive process in which already partitioned blocks from the encoder are used, in the decoder, in a reconstruction process. *See* PO Resp. 42–50.

For the foregoing reasons, we find that the combination of Kalker and Novotny does not teach or suggest the partitioning limitation. As such, we are not persuaded that Petitioner establishes that claim 1 is obvious over Kalker and Novotny by a preponderance of the evidence.

4. *Independent Claims 7 and 15 and Dependent Claims 2–4, 6–8, 10, 12–14, 16–18, and 20*

Petitioner relies on the same analysis for its challenges to claims 1, 7, and 15. Pet. 23–50. For reasons substantially similar to those set forth above with respect to independent claim 1, we are not persuaded that Petitioner has established, by a preponderance of the evidence, that

independent claims 7 and 15 are obvious in view of Kalker and Novotny. We reach the same conclusion with respect to dependent claims 2–6, 8–14, and 16–20 as these claims depend from independent claims 1, 7, and/or 15.

E. Obviousness over Kalker, Novotny, and Chiang

Petitioner contends that claims 5, 11, and 19 are unpatentable under 35 U.S.C. § 103 as obvious over Kalker, Novotny, and Chiang. *Id.* at 59–62. As these claims depend from independent claims 1, 7, and 15, and as Chiang was not cited to cure the deficiencies of Kalker and Novotny discussed above with respect to the independent claims (*see* Pet. 61–62), we reach the same conclusion—that Petitioner has not established by a preponderance of the evidence that claims 5, 11, and 19 are unpatentable as obvious in view of Kalker, Novotny, and Chiang.

F. Real Party in Interest Arguments

Patent Owner argues that we should dismiss the Petition because it does not name all real parties in interest. PO Resp. 68–74. Patent Owner identifies several companies that have paid membership fees to Petitioner and asserts that those companies should have been named as real parties in interest. *Id.* at 69.

Petitioner challenges Patent Owner’s assertions, arguing that Unified Patents Inc. is the sole real party in interest. Pet. Reply 16–24. Petitioner cites evidence that it alone controls this proceeding and does not communicate with its members about potential validity challenges before filing IPRs. *Id.* at 19–20 (citing Ex. 2152, 10–11; Ex. 2138, 31:25–33:2, 222:16–223:4).⁸ Petitioner avers that it searched for and could not identify

⁸ Ex. 2152 does not have a corresponding redacted version. Ex. 2138 is redacted as Ex. 1027.

any communications with its members regarding the '365 patent or this proceeding other than public announcements. *Id.* at 20 (citing Ex. 2012⁹; Ex. 2161, 68:22–69:9¹⁰). Petitioner further points out that no alleged unnamed real party in interest would be subject to a time bar under § 315(b). *Id.* at 20.

We have considered the parties' submissions and determine that Petitioner has adequately identified the real party in interest. Patent Owner has introduced no evidence specific to this proceeding that causes us to question Petitioner's identification, and has not identified an aspect of Petitioner's business structure that we view as showing the alleged unnamed real parties in interest are clear beneficiaries with respect to this proceeding that have a preexisting, established relationship with Petitioner. *See Ventex Co. v. Columbia Sportswear N. Am., Inc.*, IPR2017-00651, Paper 152 at 6–11 (PTAB Jan. 24, 2019) (precedential).

G. Motion to Seal Patent Owner's Sur-Reply

In its Motion to Seal Patent Owner's Sur-reply, Petitioner argues The Emails from Shawn Ambwani with Attachments (Ex. 2113, 2114), the Transcripts of Depositions of Kevin Jakel (Ex. 2138 and 2161), and the Sample Membership Agreement Form (Ex. 2152) that Petitioner produced subject to the agreed-to Protective Order each include statements that contain confidential, sensitive commercial information, including closely held information related to Unified's core business. The Patent Owner Sur-Reply (Paper 31) references and cites to the confidential information included in one or more of the documents listed above. Petitioner submits, and without agreeing or disagreeing to the designations,

⁹ Petitioner incorrectly cites Ex. 2013. Pet. 20. We understand this to be a typographical error as Ex. 2012 is a press release that refers specifically to the '365 patent.

¹⁰ Ex. 2161 is redacted as Ex. 1026.

Patent Owner does not contest or oppose that, the unredacted version of the Patent Owner Sur-Reply (Paper 31) should be sealed. Petitioner herewith submits a redacted version of the Patent Owner Sur-Reply.

Paper 34, 2–3 (emphasis added). Petitioner represents that Patent Owner does not oppose its motion. *Id.* at 3.

Petitioner argues that the exhibits discussed in the Sur-Reply were “produced subject to the agreed-to Protective Order,” and that each of the exhibits includes “statements that contain confidential, sensitive commercial information, including closely held information related to Unified’s core business.” *Id.* at 2–3 (citing Exs. 2113, 2114, 2138, 2161, 2152). Petitioner notes that the “Patent Owner Sur-Reply (Paper 31) references and cites to confidential information included in the [exhibits] listed above.” *Id.* at 3. Petitioner provides redacted version for the Sur-Reply. *Id.*; *see* Ex. 1038. Petitioner contends that “the balance overwhelmingly favors protecting Unified’s highly confidential information,” because “[t]he information Unified seeks to protect has nothing to do with patentability, but rather involves Unified’s status as the real party in interest.” Paper 34, 3. Petitioner argues that, accordingly, “the public interest in having access to Unified’s confidential financial and business information is minimal, while the public interest is well-served in keeping such business information readily available and exchangeable between parties based on voluntary discovery, without the fear of incidental public exposure of confidential business information..” *Id.* at 3–4. Petitioner further argues that “[i]dentical or similar confidential information held by Unified has been sealed by the Board in prior cases.” *Id.* at 4 (citing *Unified Patents, Inc. v. Uniloc* 2017

LLC, IPR2017-02148, Papers 84, 89 (PTAB May 23, 2019 & May 31, 2019) (granting Unified's Motions to Seal)).

A motion to seal may only be granted on a showing of good cause. 37 C.F.R. § 42.54(a). In general, the Board's "rules aim to strike a balance between the public's interest in maintaining a complete and understandable file history and the parties' interest in protecting truly sensitive information." TPG at 19. The rules identify confidential information as "trade secret or other confidential research, development, or commercial information." *Id.* (citing 37 C.F.R. § 42.54). Applying the rules, the Board has required that

a movant to seal must demonstrate adequately that (1) the information sought to be sealed is truly confidential, (2) a concrete harm would result upon public disclosure, (3) there exists a genuine need to rely in the trial on the specific information sought to be sealed, and (4), on balance, an interest in maintaining confidentiality outweighs the strong public interest in having an open record.

Argentum Pharms. LLC v. Alcon Research, Ltd., IPR2017-01053, Paper 27 at 4 (PTAB Jan. 19, 2018) (designated informative July 10, 2018); *see also Corning Optical Commc 'ns RF, LLC, v. PPC Broadband, Inc.*, IPR2014-00440, Paper 46 at 2 (PTAB April 6, 2015) ("Material is not confidential business information simply because it relates to an activity of a business.").

Upon review of the Sur-Reply and corresponding redacted exhibit 1038, we are persuaded, by Petitioner, that the exhibit "include[s] statements that contain confidential, sensitive commercial information, including closely held information related to Unified's core business." Paper 34, 3. We are further persuaded that "[t]he information Unified seeks to protect has nothing to do with patentability, but rather involves Unified's status as the

real party in interest” based on our review of the corresponding redacted exhibit. *Id.* at 6.

We find persuasive Petitioner’s concerns that disclosing the redacted information could harm Petitioner by enabling others to replicate its business, and that unsealing such information would have an adverse effect on future voluntary discovery. We are persuaded that Petitioner has shown good cause for maintaining this information under seal. Consequently, we grant Petitioner’s motion to seal Patent Owner’s Sur-Reply.

H. Constitutionality Arguments

Patent Owner asserts that the “Board lacks the authority to issue a Final Written Decision in this proceeding because the Administrative Patent Judges (‘APJs’) are principal officers of the United States that must be appointed by the President and confirmed by the Senate.” PO Resp. 67. According to Patent Owner, the Federal Circuit’s decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019), “did not actually fix the problem.” *Id.*

We decline to consider Patent Owner’s constitutional challenge as the issue has been addressed by the Federal Circuit. *See Arthrex*, 941 F.3d at 1328.

IV. CONCLUSION

We conclude that Petitioner has not established, by a preponderance of the evidence, that claims 1–4, 6–10, 12–18, and 20 of the ’365 patent are unpatentable as obvious over the combination of Kalker and Novotny. We also conclude that Petitioner has not established, by a preponderance of the evidence, that claims 5, 11, and 19 are unpatentable as obvious over the

combination of Kalker, Novotny, and Chiang. The chart below summarizes our conclusions.

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–4, 6–10, 12–18, 20	103	Kalker, Novotny		1–4, 6–10, 12–18, 20
5, 11, 19	103	Kalker, Novotny, Chiang		5, 11, 19
Overall Outcome				1–20

V. ORDER

It is, therefore,

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–20 of the '365 patent have *not* been shown by a preponderance of the evidence to be unpatentable;

FURTHER ORDERED that Patent Owner's Sur-Reply (Paper 31) is sealed; and

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

IPR2019-00757
Patent 9,930,365 B2

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