

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AXIS COMMUNICATIONS AB, CANON INC.,
and CANON U.S.A., INC.,
Petitioner,

v.

AVIGILON FORTRESS CORPORATION,
Patent Owner.

Case IPR2018-00140
Patent 8,564,661 B2

Before JANET A. GONGOLA, *Vice Chief Administrative Patent Judge*,
KALYAN K. DESHPANDE and GEORGIANNA W. BRADEN,
Administrative Patent Judges.

DESHPANDE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a); 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Axis Communications AB, Canon Inc., and Canon U.S.A., Inc. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–32 of U.S. Patent No. 8,564,661 B2 (Ex. 1001, “the ’661 patent”). Paper 1 (“Pet.”). Avigilon Fortress Corporation (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314, we instituted *inter partes* review of the ’661 patent, on June 1, 2018, as to claims 1–32 patent with respect to all grounds set forth in the Petition.¹ Paper 8 (“Dec.”). The Petition sets forth proposed grounds of unpatentability of claims 1–32 of the ’661 patent under 35 U.S.C. §§ 102, 103 as follows (*see* Pet. 11–73):²

¹ On April 24, 2018, the Supreme Court held that a final written decision under 35 U.S.C. § 318(a) must decide the patentability of all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); *see Guidance on the Impact of SAS on AIA Trial Proceedings* (Apr. 26, 2018), <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial> (“Guidance”); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (citing *SAS* and *Guidance*, and noting “[e]qual treatment of claims and grounds for institution purposes has pervasive support in *SAS*”). Accordingly, we determined Petitioner demonstrated a reasonable likelihood that at least one of the challenged claims of the ’661 patent is unpatentable, such that we instituted an *inter partes* review, and, therefore, we also instituted an *inter partes* review of all of the challenges raised in the Petition.

² Petitioner supports its challenge with the Declaration of John R. Grindon, D. Sc. Ex. 1005.

Reference(s)	Basis	Challenged Claims
Dimitrova ³	§ 102	1–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31
Dimitrova	§ 103	1–12, 14–18, 20, 21, 23, 24, and 26–32
Dimitrova and Brill ⁴	§ 103	1–32

Patent Owner filed a Response (Paper 11, “PO Resp.”), Petitioner filed a Reply (Paper 15, “Pet. Reply”), and Patent Owner filed a Sur-Reply (Paper 17, “Sur-Reply”). A consolidated oral hearing with IPR2018-00138 was held on February 25, 2019, and the hearing transcript has been entered in the record. Paper 24 (“Tr.”).

We have authority under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. Pursuant to our authority under 35 U.S.C. § 6, we conclude, for the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1–32 of the ’661 patent are unpatentable.

B. Related Proceedings

The parties indicate that the ’661 patent is the subject of IPR2018-00138, which is before the Board and involves the same parties. *See* Prelim. Resp. 25–28; Pet. 72.

³ Nevenka Dimitrova, Motion Recovery for Video Content Classification, ACM Transactions on Information Systems, Vol. 13, No. 4, Oct. 1995, 408–439 (Ex. 1003, “Dimitrova”).

⁴ Frank Z. Brill et al., *Event Recognition and Reliability Improvements for the Autonomous Video Surveillance System*, Image Understanding Workshop (Nov. 20–23, 1998) (Ex. 1004, “Brill”).

C. The '661 Patent

The '661 patent discloses a “system for automatic video surveillance employing video primitives.” Ex. 1001, 1:28–29. The system uses “event discriminators,” which “are identified with one or more objects (whose descriptions are based on video primitives), along with one or more optional spatial attributes, and/or one or more optional temporal attributes.” *Id.* at 6:4–8. For example, the event discriminator “loitering” is where a person (object) is at an automatic teller machine (spatial attribute) for “longer than 15 minutes” (temporal attribute) and “between 10:00 p.m. and 6:00 a.m.” (temporal attribute). *Id.* at 6:8–14. A “rule management tool” provides an interface to a user for “creating video surveillance rules.” *Id.* at 11:14–16.

The system is enabled to track an object, such as a person, vehicle, or light/radio frequency emitter. *Id.* at 16:59–64. A video analysis subsystem performs analysis of the video stream to derive video primitives. *Id.* at 20:56–59. Video primitives include object descriptors that are observable attributes of an object in a video feed. *Id.* at 19:4–6. “[E]vent occurrences are extracted from the video primitives using event discriminators.” *Id.* at 25:36–37. Output is generated based on the event occurrences, and output can take the form of a display of the video feed. *Id.* at 26:4–23.

D. Illustrative Claim

Petitioner challenges claims 1–32 of the '661 patent. Pet. 11–73. Claims 1, 15–21, 24, and 27 are the independent claims at issue. Claim 1 is illustrative of the challenged claims and is reproduced below:

1. A method comprising:
detecting an object in a video;
detecting a plurality of attributes of the object wherein each attribute represents a corresponding characteristic of the object;

creating a user rule that defines an event; and
identifying an event of the object by applying the user rule to at least
some of the plurality of attributes of the object,
wherein the plurality of attributes that are detected are independent of
the identified event such that events may be defined that do not
require analysis of all of the plurality of attributes,
wherein the step of identifying the event of the object identifies the
event without reprocessing the video, and
wherein the event is not one of the plurality of attributes.

Ex. 1001, 30:37–51.

II. ANALYSIS

A. Claim Construction

We interpret claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b) (2017)⁵; *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard as the claim construction standard to be applied in an *inter partes* review proceeding). Under the broadest reasonable interpretation standard, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). “[O]nly those terms need be construed that are in controversy, and only to the

⁵ A recent amendment to this rule does not apply here because the Petition was filed before November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018).

extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner and Patent Owner set forth substantially the same arguments and evidence towards claim construction in this proceeding as those set forth in IPR2018-00138. In our Final Decision in IPR2018-00138, which also involves the '661 patent, we construed the terms “object,” “event,” the “independence-based claim elements,” “user rule that defines an event” / “event definition,” and the “means-plus-function” elements of claim 15. *Axis Comms. AB v. Avigilon Fortress Corp.*, Case IPR2018-00138, Paper 25 (PTAB May 30, 2019) (“138 Final Decision”). Accordingly, we construe these terms the same in this Decision as in the 138 Final Decision. 138 Final Decision, 6–14. The following table illustrates our construction in the 138 Final Decision:

Term/Limitation	Construction
“object”	“an item of interest in a video”
“event”	“one or more objects engaged in an activity”
“independence-based claim elements”	“the detection of attributes is independent from, <i>i.e.</i> not affected by, the user rule that tasks the system.”
“user rule that defines an event” / “event definition”	“a set of attributes and/or other parameters for identifying an event”

Id. at 6–13. Furthermore, we determined that the corresponding structure for these “means for” limitations of independent claim 15 is “a computer system or the equivalent video processing system.” *Id.* at 13–14.

B. Alleged Anticipation of Claims 1–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31 by Dimitrova

Petitioner contends that claims 1–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31 of the '661 patent are unpatentable under 35 U.S.C. § 102 as anticipated by Dimitrova. Pet. 27–53.

1. Dimitrova (Ex. 1003)

Dimitrova is directed to content retrieval based on video data for video on demand, automated surveillance systems, and other similar systems. Ex. 1003, 3–4. Dimitrova discloses that the distinction between still images and moving pictures are typically based in movements and variations, and, accordingly, the analysis of the motion of objects allows for the extraction of information that is unique to a video sequence. *Id.* at abstract, 4.

Dimitrova teaches that motion analysis of objects enables specific queries based on object data, such as object trajectories. *Id.* at 11. For example, Dimitrova states that a trajectory query to ““retrieve objects that have a motion trajectory whose point of origination is at the main gallery door and terminate at the Juan Miro’s picture on the opposite wall”” provides information as to which object, such as a person, interacted or damaged the Juan Miro picture. *Id.*

Dimitrova likewise teaches that queries for video sequences may also include spatial or temporal parameters. *Id.* at 18–19. For example, Dimitrova states that “a domain D, called the ‘scope,’ contain[s] all of the objects of interest,” and a “user can identify the objects of D by their attributes.” *Id.* at 19. That is, a “user may provide any available information on any of the attributes of a desired object . . . and the system will attempt to identify the intended object.” *Id.*

2. Analysis of Petitioner’s Arguments

Petitioner contends claims 1–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31 of the ’661 patent are unpatentable under 35 U.S.C. § 102 as anticipated by Dimitrova. Pet. 27–53.

Claim 1 recites “detecting an object in a video.” Petitioner argues that Dimitrova detects objects by looking for the movement of pixels between frames. Pet. 27 (citing Ex. 1003, 8–19, Fig. 7; Ex. 1005 ¶ 228). Petitioner specifically

argues that such a method of object detection results in detection of both spatial and temporal information of objects. *Id.*

Claim 1 further recites “detecting a plurality of attributes of the object wherein each attribute represents a corresponding characteristic of the object.” Petitioner argues that Dimitrova discloses “detecting attributes associated with an object,” such as image descriptions or categories, size, color, and related objects. *Id.* at 28 (citing Ex. 1003, 19–20). Petitioner additionally argues that Dimitrova discloses using a multiresolution hierarchy to detect attributes such as “convex hull, object skeleton, centroid, texture, set of macroblocks covering the object” and “an object trajectory specified by objectRep, velocity, trajectory curvature, torsion, and activity description.” *Id.* (citing Ex. 1003, 20, Fig. 7).

Claim 1 also recites “creating a user rule that defines an event.” Petitioner argues that Dimitrova discloses a “user created query containing a retrieval predicate (*i.e.*, a user rule) that defines an event.” *Id.* at 29 (citing Ex. 1003, 20). Petitioner asserts that Dimitrova discloses that operators may be embedded into a query language, “such as the [Visual Extension to VArqa] VEVA visual query language.” *Id.* (citing Ex. 1003, 20). VEVA queries use different combinations of attributes and operators to create user rules. *Id.* Petitioner argues that Dimitrova discloses examples of visual queries, such as a query for all sequences where “a tall person is waving while the president walks” and a query for all sequences where “the length of the trajectory of the ball is maximum.” *Id.* (quoting Ex. 1003, 25) (*italics omitted*).

Claim 1 additionally recites “identifying an event of the object by applying the user rule to at least some of the plurality of attributes of the object.” Petitioner contends Dimitrova discloses that “user-defined queries with retrieval predicates

are applied to store attributes to identify events.” *Id.* at 31 (citing Ex. 1003, 24–29). Based on the example of “a tall person is waving while the president walks” and the attribute model of object attributes (“O”), object motion attributes (“M”), and video attributes (“V”) (collectively, “OMV”), Petitioner argues that “person,” “tall,” and “president” are the “O” attributes, and “waving” and “walking” are the “M” attributes. *Id.* (citing Ex. 1003, 25; Ex. 1005 ¶¶ 246–247).

Claim 1 further recites “wherein the plurality of attributes that are detected are independent of the identified event such that events may be defined that do not require analysis of all of the plurality of attributes.” Petitioner contends Dimitrova discloses that “the user may provide any available information on any of the attributes of [a] desired object . . . and the system will attempt to identify the intended object.” *Id.* at 32 (quoting Ex. 1003, 19). Petitioner argues, by way of example, that a query can be for a pet walking in a certain trajectory, where the attribute of the object is being a pet and the activity is walking a certain trajectory, without having to specify any other attributes. *Id.* (citing Ex. 1005 ¶ 252). Petitioner further argues that Dimitrova discloses separate modules for information detection and query, which “further demonstrates the ‘independence’ between the detected attributes and the user-defined events.” *Id.* at 33 (citing Ex. 1003, 26; Ex. 1005 ¶ 253).

Claim 1 also recites “wherein the step of identifying the event of the object identifies the event without reprocessing the video.” Petitioner argues Dimitrova discloses that queries are performed on stored data, and, therefore, Dimitrova does not disclose reprocessing the video. *Id.* at 33 (citing Ex. 1003, 24–27; Ex. 1005 ¶¶ 255–257).

Claim 1 additionally recites “wherein the event is not one of the plurality of attributes.” Petitioner contends Dimitrova discloses the events “parade” and “the longest basketball shot” that comprise attributes, but the event is not one of the attributes. *Id.* at 34 (citing Ex. 1005, 25; Ex. 1005 ¶¶ 259–260).

Notwithstanding Patent Owner’s arguments, which we address below, we determine Petitioner has demonstrated by a preponderance of the evidence that independent claim 1 of the ’661 patent is anticipated by Dimitrova. Petitioner provides a similar analysis for claims 2–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31. *Id.* at 34–53. We agree with Petitioner’s arguments for claims 2–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31, and we similarly determine Petitioner has demonstrated by a preponderance of the evidence that claims 2–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31 of the ’661 patent are anticipated by Dimitrova. *Id.*

3. *Analysis of Patent Owner’s Arguments*

Patent Owner argues Dimitrova fails to (a) disclose the “independence-based claim elements” and (b) disclose “user rules that define an event.” PO Resp. 36–46; Sur-Reply 11–18. We address these arguments in turn.

a. *“Independence-Based Claim Elements”*

As discussed above, we construe the “independence-based claim elements” to mean “the detection of attributes is independent from, *i.e.*, not affected by, the user rule that tasks the system.” Section II.A.3. Patent Owner argues that Dimitrova fails to disclose the “independence-based claim elements.” PO Resp. 36–45. Patent Owner specifically argues that Dimitrova is an “event-indexing art that analyzes video sequences to extract and index events of interest in video frames,” and does not disclose “the plurality of attributes that are detected are independent of the identified event.” *Id.* at 37.

We disagree with Patent Owner. Dimitrova discloses a system for the “retrieval of either video sequences or objects contained in these sequences based on the object trajectory.” Ex. 1003, 11. Dimitrova discloses that within a domain of interest, a user provides the attributes of a desired object, and the system attempts to identify or detect the object. *Id.* at 19, 26–27. Dimitrova further explains that activities can be recognized based on a predefined set of parameters, or can be designated by a user. That is, a video sequence is analyzed based on a set of parameters or attributes provided by a user in order to retrieve or recognize objects and activities. As such, we find that Dimitrova discloses the “independence-based claim elements.”

Patent Owner contends Dimitrova discloses “event-indexing,” where “all events are known and defined before any video sequences are analyzed.” PO Resp. 36–44. Patent Owner asserts that Dimitrova “is not agnostic to the events, and that events must be predefined/predetermined.” *Id.* at 37 (citing Ex. 2007 ¶ 89). As discussed in our claim construction, we disagree with Patent Owner that the “independence-based claim elements” require the detection of attributes without regard to or knowledge of “a predefined/predetermined list of events of interest.” 138 Final Decision, 8–9. Furthermore, we are unable to discern the relevance of indexing⁶ or Dimitrova’s “schema” with the “independence-based claim elements.” See Tr. 43:12–44:12. Dimitrova discloses a “schema” that identifies relationships between objects. Ex. 1003, 22. Dimitrova’s disclosure of a

⁶ Dimitrova does not explicitly disclose a system that indexes. Rather, Dimitrova discloses a “schema of a multimedia database system.” Ex. 1003, 22. Dr. Alan Bovik, Patent Owner’s declarant, explains that Dimitrova’s “schema” is similar to an indexing system. Ex. 2007 ¶¶ 90, 92. Based on Dr. Bovik’s declaration, we address Patent Owner’s argument that Dimitrova discloses an indexing system. PO. Resp. 36–44.

“schema” that allows for the retrieval of objects based on data types is independent of its disclosure of a system that detects or recognizes objects and activities based on user supplied attributes. *Id.* at 19, 22.

Patent Owner additionally contends Dimitrova is the same as Courtney,⁷ which the Examiner in the '912 reexamination found did not disclose the “independence-based claim elements.” PO Resp. 36–41. Patent Owner specifically argues that both Courtney and Dimitrova “merely refer[ence] an already determined/detected event with respect to variable selected locations and/or times not a determination/detection of a new independent event.” *Id.* at 36 (citing Ex. 2001, 7–8).

We disagree with Patent Owner. Specifically, we disagree with Patent Owner’s arguments that an indexing system fails to disclose the “independence-based claim elements” for the reasons discussed above. Furthermore, we agree with Petitioner that Courtney “was distinguished because it detected a fixed set of ‘events,’ and users could only select among those ‘events.’” Pet. Reply. 8–9. The Examiner in the '912 reexamination stated that “the event querying/filtering system of Courtney fails to teach the independence-based claim elements because said event querying/filtering system relies on a list of predefined/predetermined ‘events’ of interest.” Ex. 2001, 8 (citing Ex. 2008, 3:4–8, 4:62–67, 10:50–64). Indeed, in the portions cited by the Examiner, Courtney discloses indexing events already selected as of interest. Ex. 2008, 4:62–67, 10:50–64. Accordingly, we find that Dimitrova is distinguished from Courtney because the Examiner found that Courtney discloses indexing events already selected as of interest, whereas

⁷ U.S. Patent No. 5,969,755, issued Oct. 19, 1999 (Ex. 2008, “Courtney”).

Dimitrova discloses the detection or recognition of objects and activities based on attributes provided by a user.

b. “User Rules That Define An Event”

Patent Owner contends Dimitrova fails to disclose “user rules that define an event” based on Patent Owner’s proposed construction of this limitation. PO Resp. 44–46. Patent Owner argues that the limitation “user rules that define an event” should be construed to mean “a set of conditions (queries) such that when a defined event is detected may trigger a response.” *Id.* at 44–45; *see* 138 Final Decision, 11–13. Patent Owner further argues that Dimitrova does not disclose “responses to rules being satisfied at all,” but rather discloses “running queries to return frames of videos that contain events that already occurred.” *Id.* at 45.

We disagree with Patent Owner. Patent Owner’s argument is premised on a claim construction that we do not agree with and do not adopt. 138 Final Decision, 11–13. Rather, we construe the limitation “user rules that define an event” to mean “a set of attributes and/or other parameters for identifying an event.” *Id.* Dimitrova discloses that a user provides a set of attributes and the system returns objects and activities based accordingly. Ex. 1003, 19. As such, we agree with Petitioner that Dimitrova discloses “user rules that define events.” Pet. 29 (citing Ex. 1003, 20, 25); Ex. 1003, 19.

4. Conclusion

Based on the foregoing, we determine Petitioner has demonstrated by a preponderance of the evidence that claims 1–10, 15–18, 20, 21, 23, 24, 26–28, 30 and 31 of the ’661 patent are unpatentable under 35 U.S.C. § 102 as anticipated by Dimitrova.

C. Alleged Obviousness of claims 1–12, 14–18, 20, 21, 23, 24, and 26–32 of the '661 patent over Dimitrova

Petitioner contends that claims 1–12, 14–18, 20, 21, 23, 24, and 26–32 of the '661 patent are unpatentable under 35 U.S.C. § 103 as obvious over Dimitrova. Pet. 54–57. As discussed above, we determine Petitioner has demonstrated by a preponderance of the evidence that claims 1–10, 15–18, 20, 21, 23, 24, 26–28, 30, and 31 of the '661 patent are unpatentable under 35 U.S.C. § 102 as anticipated by Dimitrova. Additionally, as discussed below, we determine Petitioner has demonstrated, by a preponderance of the evidence that claims 1–32 of the '661 patent are unpatentable under 35 U.S.C. § 103 as obvious over Dimitrova and Brill. Accordingly, we need not reach this additional ground asserted by Petitioner.

D. Alleged Obviousness of claims 1–32 of the '661 patent over Dimitrova and Brill

Petitioner contends claims 1–32 of the '661 patent are unpatentable under 35 U.S.C. § 103 as obvious over Dimitrova and Brill. Pet. 27–54, 57–71.

1. Brill (Ex. 1004)

Brill is directed to the Autonomous Video Surveillance (AVS) system, which “processes live video streams from surveillance cameras to automatically produce a real-time map-based display of the locations of people, objects and events in a monitored region.” Ex. 1004, 4.⁸ Specifically, the AVS system has been enhanced to utilize collateral information sources, camera hand-off, vehicle recognition, and complex-event recognition. *Id.*

⁸ Exhibit 1004 includes page numbers in the original document and page numbers identifying pages within Exhibit 1004. The Petition identifies page numbers using the page numbers as outlined for Exhibit 1004. Accordingly, we also use the page numbers outlined by Petitioner for Exhibit 1004.

2. Level of Ordinary Skill in the Art

35 U.S.C. § 103(a) requires a determination of whether “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention *to a person having ordinary skill in the art* to which the claimed invention pertains.” (Emphasis added).

Petitioner argues that a person with ordinary skill in the art would have had “(i) a Bachelor of Science degree in electrical engineering, computer engineering, or computer science, with approximately two years of experience or research related to video processing and/or surveillance systems” or “(ii) equivalent training and work experience in computer engineering and video processing and/or surveillance systems.” Pet. 10–11 (citing Ex. 1005 ¶ 98). Patent Owner argues that “this level of skill is not correct, as it allows for experience in video processing *or* surveillance system, but does not require both.” PO Resp. 21 (underlining omitted) (emphasis added). Patent Owner argues that Petitioner’s declarant, Dr. Grindon, has experience in “3D modeling” but “has no experience in video surveillance systems, like that of the ’661 patent.” PO Resp. 22. Petitioner argues that Patent Owner’s level of skill in the art is overly narrow because “[n]one of the challenged claims are restricted to video surveillance environments or situations.” Pet. Reply 19–20.

We disagree with Patent Owner that a person with ordinary skill in the art would have had experience limited to “video surveillance systems.” Rather, based on the entirety of the record before us, we determine that a person with ordinary skill in the art should have experience in video or image processing. We agree with Petitioner’s argument that Patent Owner set forth a broader scope of the level of ordinary skill in the art in the context of the ’912 reexamination, and that level

of ordinary skill in the art is instructive here. Pet. Reply 19–20 (citing Ex. 2005 ¶ 98). Furthermore, we agree with Petitioner that the claims are not narrowly drawn to “video surveillance,” but rather are broadly directed to video processing and the detection of objects and events in videos. *Id.* Accordingly, we apply Petitioner’s level of ordinary skill in the art in our analysis below.

Patent Owner’s argument regarding Dr. Grindon’s expertise goes to the weight we should accord his testimony, and it is within our discretion to assign the appropriate weight to that testimony. See *Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding the Board has discretion to give more weight to one item of evidence over another “unless no reasonable trier of fact could have done so”); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”). To the extent Dr. Grindon is more familiar with “3D modelling” and less familiar with “video surveillance,” we weigh Dr. Grindon’s testimony accordingly.

3. Analysis of Petitioner’s Arguments

Independent claim 1 recites “detecting an object in a video.” Petitioner argues that Brill discloses a background-model-based technique for object detection. Pet. 57–58 (citing Ex. 1004, 6–9). Petitioner contends “[i]t would have been obvious to implement *Brill*’s object detection technique in *Dimitrova* for object tracking.” *Id.* (citing Ex. 1005 ¶ 439). Specifically, Petitioner argues that a “[a person with ordinary skill in the art] would have found it obvious to combine *Dimitrova*’s video classification and retrieval system with the features of *Brill*’s AVS system.” *Id.* at 25 (citing Ex. 1005 ¶ 217). Petitioner asserts that “[a person with ordinary skill in the art] would have been aware of object detection methods, attribute detection methods, and querying mechanisms” and “[a person with

ordinary skill in the art] could have combined the elements of *Dimitrova* and *Brill* to provide enhancements or achieve particular design objectives, while yielding predictable results.” *Id.* (citing Ex. 1005 ¶ 220). Petitioner proposes that such a modification would have been advantageously used, for example, in a store while monitoring a shelf in order to minimize theft. *Id.* at 26–27 (citing Ex. 1005 ¶ 223). For the remaining elements of claim 1, Petitioner relies on its arguments presented in its anticipation challenge premised on *Dimitrova*. *Id.* at 57; *see supra* Section II.B.2.

We agree with Petitioner’s arguments. Notwithstanding Patent Owner’s arguments, which we address below, we determine Petitioner has demonstrated by a preponderance of the evidence that independent claim 1 of the ’661 patent would have been obvious over *Dimitrova* and *Brill*. Petitioner provides a similar analysis for claims 2–32. *Id.* at 58–71. We agree with Petitioner’s arguments for claims 2–32, and we similarly determine Petitioner has demonstrated by a preponderance of the evidence that claims 2–32 of the ’661 patent would have been obvious over *Dimitrova* and *Brill*. *Id.*

4. Analysis of Patent Owner’s Arguments

Patent Owner contends *Dimitrova* fails to disclose the “independence-based claim elements,” and “user rules.” PO Resp. 36–46. We do not agree with these arguments for the same reasons discussed above. *See supra* Section II.B.3.

Patent Owner further contends *Brill* “does not fully function.” PO Resp. 46 (citing Ex. 2007 ¶ 105; Ex. 1005, 10); Sur-Reply 18–19. Accordingly, Patent Owner argues that a person with ordinary skill in the art “would not look to implement a machine vision system that does not function as intended on top of *Dimitrova*’s object oriented database.” *Id.* (citing Ex. 2007 ¶ 105). We disagree with Patent Owner. Specifically, we find Petitioner is asserting *Brill* only for the

functionality of “detecting an object in a video.” *See* Pet. Reply 17–18; Pet. 57–58. As discussed above, Brill discloses a background-model-based technique for object detection. Ex. 1004, 6–9. Accordingly, we agree with Petitioner that a person with ordinary skill in the art would have been aware of video processing systems utilizing object detection, and a person with ordinary skill in the art would have combined Dimitrova and Brill in order to “provide enhancements or achieve particular design objectives.” Pet. 25.

Patent Owner also argues that Brill does not disclose the “independence-based claim elements,” Brill was overcome during prosecution and reexamination, and Brill is an “event-indexing system” like Courtney. PO Resp. 46–55. We are not persuaded by Patent Owner’s arguments. Petitioner does not argue that Brill discloses the “independence-based claim elements,” and, therefore, Patent Owner’s argument is not commensurate with the ground of unpatentability set forth by Petitioner. Patent Owner’s argument that Brill was overcome during prosecution and reexamination is misplaced because Brill was not discussed during prosecution or reexamination. Rather, prior art *related* to Brill—but not Brill itself—was before the Office. *See id.* at 47. Patent Owner’s argument that Brill is an “event indexing system” like Courtney is not persuasive for the same reasons discussed above with respect to Patent Owner’s argument that Dimitrova is like Courtney. *See supra* Section II.B.3.b.

5. Conclusion

Based on the foregoing, we determine Petitioner has demonstrated by a preponderance of the evidence that claims 1–32 of the ’661 patent are unpatentable under 35 U.S.C. § 103 as obvious over Dimitrova and Brill.

III. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 1–32 of the '661 patent are unpatentable.

IV. ORDER

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED that claims 1–32 of the '661 patent are held unpatentable; 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.

IPR2018-00140
Patent 8,564,661 B2

PETITIONER:

FOR EXIS COMMUNICATIONS AB

C. Gregory Gramenopoulos

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP

gramenoc@finnegan.com

FOR CANON INC. and CANON U.S.A., INC.

Joseph Calvaruso

Richard Martinelli

ORRICK, HERRINGTON & SUTCLIFFE LLP

jvcptabdocket@orrick.com

rfmptabdocket@orrick.com

PATENT OWNER:

Michael Renaud

Daniel Weinger

MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.

rtrenaud@mintz.com

dbweinger@mintz.com