

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

AUTONOMOUS DEVICES, LLC,
Patent Owner

Case: IPR2023-01054
U.S. Patent No. 10,452,974

PATENT OWNER'S PRELIMINARY RESPONSE

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Exhibit List

Exhibit	Description
2001	Biography of Blair M. Jacobs (previously submitted)
2002	Declaration of Blair M. Jacobs (previously submitted)
2003	Supplemental Declaration of Blair M. Jacobs (previously submitted)
2004	Disclaimer of Claims 1-3, 6, 8-10, 12-13, 16-20
2005	District Court Docket
2006	District Court Scheduling Order

I. INTRODUCTION

Autonomous Devices, LLC (“Patent Owner” or “Autonomous Devices”) submits this Preliminary Response in accordance with 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding to the Petition for *Inter Partes* Review (“Petition”) of U.S. Patent No. 10,452,974 (“the ’974 Patent”) filed by Tesla, Inc. (“Petitioner” or “Tesla”).

The Petition challenges claims 1-20 of the ’974 Patent with three grounds that rely primarily on U.S. Patent No. 9,604,359 (“Grotmol”) and U.S. Patent No. 8,639,644 (“Hickman”). Patent Owner has disclaimed claims 1-3, 6, 8-10, 12-13, and 16-20. Ex. 2004. No IPR can be instituted based on these disclaimed claims. 37 C.F.R. § 42.107(e). They are “treated as if they never existed.” *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1379 n.4 (Fed. Cir. 2021). The Petition’s arguments as to remaining claims 4-5, 7, 11, and 14-15 (“Challenged Claims”) are sparse and lack support. The Board has previously denied institution when, like here, the patentee disclaimed certain claims and the petitioner did not establish a reasonable likelihood of prevailing on the remaining claims. *See Novartis Gene Therapies, Inc. et al v. Genzyme Corp.*, IPR2023-00608, Paper 20 (PTAB Aug. 30, 2023); *Gen. Electric Co. v. United Techs. Corp.*, IPR2017-00491, Paper 9 (PTAB July 6, 2017).

The Board should decline institution due to deficiencies in the Petition's analysis of the prior art relied upon in the grounds. Additionally, the Board should exercise its discretion and deny institution under 35 U.S.C. § 314(a).

II. THE '974 PATENT

The '974 patent, titled "Artificially intelligent systems, devices, and methods for learning and/or using a device's circumstances for autonomous device operation," discloses systems and methods for learning and using a device's circumstances for autonomous device operation. Ex. 1001, Abstract; 1:39-41. The '974 patent discloses systems and methods for autonomous driving by learning and using a device's circumstances including detecting objects with various properties along with correlated instruction sets for operating the device in various circumstances. *Id.*, 57:49-55. The circumstance and instruction set information is stored in a knowledgebase and used to operate the device autonomously. *Id.*, 57:55-57.

Prior to the innovations described in the '974 patent, "[c]ommonly employed device or system operating techniques lack[ed] a way to learn [the] operation of a device or system and enable autonomous operation of a device or system." *Id.*, 1:32-35. The '974 patent solved this problem by utilizing a sophisticated system for learning the scenarios encountered by a device and distilling those scenarios into a

set of circumstances (which may include one or more objects) and corresponding instructions that can be efficiently performed autonomously. *Id.*, 57:49-57.

The '974 patent is directed to systems, methods, and computer readable media that store a knowledgebase that correlates device operating instruction sets with objects encountered by a device, obtain new object representations using device sensors, match the new objects with objects in the knowledgebase, and cause a device that detected the new objects to autonomously execute an instruction set correlated to the matched objects. *Id.*, 1:39-2:9. This autonomously performed operation is based on a correlation learned in a learning process that includes operating a device at least partially by a user. *Id.*

Referring to Figure 38 (shown below) and the specification's description of Figure 38, for example, vehicle 98a includes sensors 92, such as a camera 92a, that capture the vehicle's 98a's surrounding. *Id.*, 162:39-163:63, Fig. 38, claim 1. The vehicle's computer(s) process the output from the sensors 92 to form a circumstance representation that includes object representations 625 representing objects 615aa-ad (people, boulders, materials, vehicles, etc.) in the vehicle's surrounding. *Id.* If a vehicle's computer(s) detect a match with a previously learned circumstance representation 525, the vehicle 98a performs autonomous operation using previously learned instructions 526 correlated with the previously learned circumstance representations. *Id.*

III. PERSON OF ORDINARY SKILL IN THE ART

For purposes of this stage of the proceeding only, Patent Owner adopts Petitioner's definition of a person of ordinary skill in the art (POSA). Petition, 4.

IV. ALLEGED PRIOR ART

The Petition relies on two references for its unpatentability grounds, and those references are summarized below.

A. GROTMOL (EX. 1004)

Grotmol discloses a primitive method for training and operating a robotic device to follow a simple trajectory based on a simple sequence (i.e. ordered buffer) of images. Exhibit 1004, Abstract. If any circumstance occurs for which the simple trajectory is not trained (i.e. different objects, etc.) the robot in Grotmol would not know what to do or would collide with an obstacle. The robotic device “may utilize a camera” to store a “sequence of images of a visual scene seen when following a trajectory during training in an ordered buffer.” *Id.* During training, “[m]otor commands issued by a trainer corresponding to time instances when the images are acquired may be stored.” *Id.*, 39:17-19. During autonomous operation, the robotic device may be configured to compare an acquired image “with one or more images from the training buffer in order to determine the most likely match.” *Id.*, Abstract. After an acquired image is matched to an image stored in the training buffer, the best

match may be used “to predict motor command for controlling operation of a robot.”
Id., 27:57-58.

Figure 1 from Grotmol, shown below, discloses that robot 160 includes sensor 166. *Id.*, 8:57-61. Sensor 166 provides “information associated with objects within the field-of-view 168.” *Id.*, 8:64-68. Grotmol discloses that its device also includes a memory that stores “training sets,” which may include “an instance of the video frame, an instance of the binary signal, and an instance of a motor control indication configured to cause the robot to execute an action.” *Id.*, 3:35-39. Grotmol never discloses specific data structures or the manner in which information is stored and processed in robot 160.

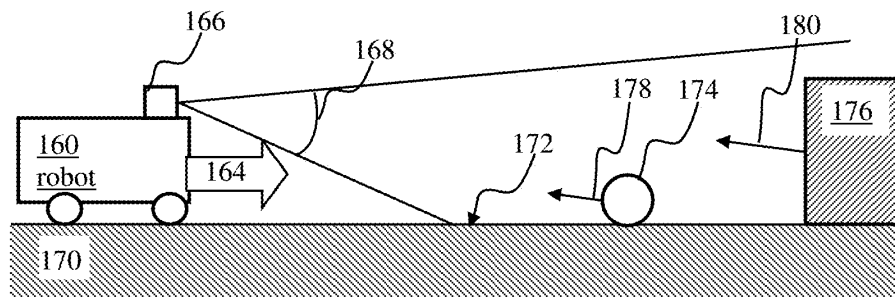


FIG. 1

Ex. 1004, Fig. 1.

B. HICKMAN (EX. 1005)

Hickman relates to “shared robot knowledge bases for use with cloud computing systems.” Ex. 1005, Abstract. “[T]he cloud computing system” in

Hickman “collects data from a robot about an object the robot has encountered in its environment, and stores the received data in the shared robot knowledge base.” *Id.* Hickman teaches a method whereby “information in the shared robot knowledge base is updated based on robot experiences so that any particular robot may benefit from prior experiences of other robots.” *Id.*

Hickman provides a basic method for storing and sharing object information. As shown below in Figure 4 from Hickman, robot 404 may obtain object information via one or more sensors. *Id.* at 25:14-19. That information is transmitted to cloud computing system 401, where it is stored and can be used by second robot 413. *Id.*, 25:24-27:26. Hickman fails to disclose how this object information is stored, processed, and utilized to autonomously operate a device.

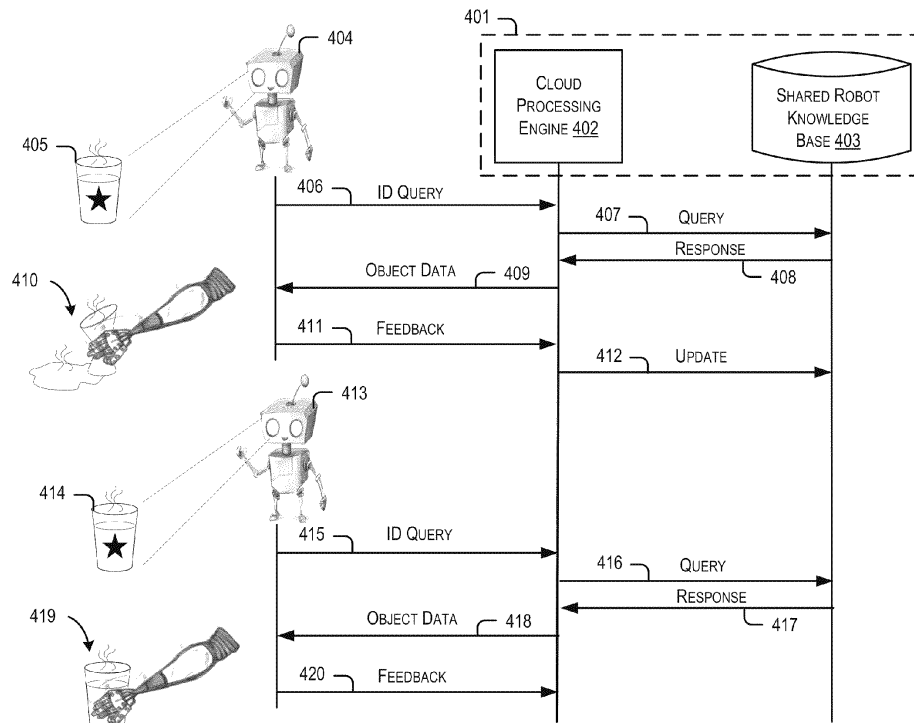


FIGURE 4

Ex. 1005, Fig. 4.

V. CLAIM CONSTRUCTION

The claims in an *inter partes* grant review are construed using the same standard that applies in district court proceedings, as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 100(b) (2019). Claim terms are afforded “their ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of

record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312-17). The Board, however, only construes the claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11 at 16 (Aug. 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Patent Owner proposes a construction for one term (“object representation”) that appears in claims 14-15, and that term is discussed below in Section V.A. Additionally, claim terms for which Petitioner proposed a construction (Petition, 4-5) do not need construction because the claims reciting those terms have been disclaimed, as discussed above in Section I and below in Section V.B.

A. “object representation” (Claims 14-15)

Claims 14 and 15 recite “object representation” at several instances in describing the data structures that are used to store information in the claimed invention. Claim 14 recites in part:

wherein the first circumstance representation includes: one or more *object representations*, or one or more collections of *object representations*, and wherein the second circumstance representation includes: one or more *object representations*, or one or more collections of *object representations*, and wherein

the third circumstance representation includes: one or more *object representations*, or one or more collections of *object representations*.

Ex. 1001, Claim 14.

In the context of the '974 patent, including in light of the claims, specification, and prosecution history, an “object representation” should be construed as a “data structure that includes an object property generated by object processing.” This construction is supported by the claims, specification, drawings, and intrinsic record as a whole. Figure 4B of the '974 patent makes clear that an object representation is a data structure that includes an object property generated by object processing:

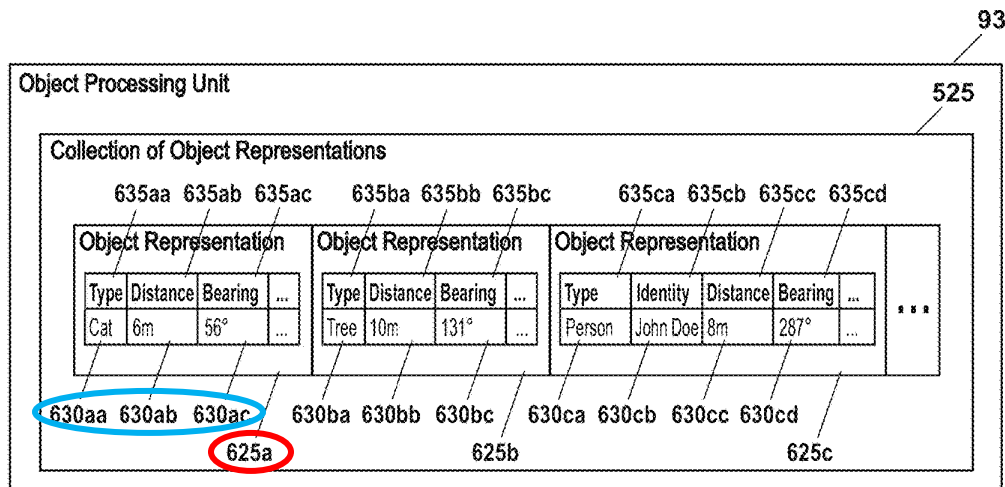


FIG. 4B

Ex. 1001, Figure 4B (annotated to show object representation 625a in red, and object properties 630aa-ac in blue). As shown in the figure, Object Processing Unit 93 “may create or generate Collection of Object Representations 525 including Object

Representation 625a representing Object 615a, Object Representation 625b representing Object 615b, and Object Representation 625c representing Object 615c.” *Id.*, 80:16-21. Each of the Object Representations 625a, 625b, and 625c is a data structure that includes an object property generated by object processing. *Id.*, 80:21-34. For example, “***Object Representation 625a may include Object Property 630aa ‘Cat’ in Category 635aa ‘Type’, Object Property 630ab ‘6 m’ in Category 635ab ‘Distance’, Object Property 630ac ‘56°’ in Category 635ac ‘Bearing.’***” *Id.*, 80:21-25 (emphasis added). Based on this disclosure, it is apparent that in the context of the ’974 patent, an “object representation” as claimed in claims 14 and 15 is a data structure that includes an object property generated by object processing.

The ’974 patent further explains that each object property included in the object representation data structure is generated by object processing. *Id.*, 71:38-43. “Object Processing Unit 93 comprises the functionality for processing output from Sensor 92 to obtain information of interest, and/or other functionalities. As such, ***Object Processing*** Unit 93 can be used to process output from Sensor 92 to ***detect objects and/or their properties*** in Device’s 98 surrounding.” *Id.* (emphasis added). Thus, the object property in the object representation data structure is not just any property, but rather one that is generated by object processing.

The ’974 patent discloses that, after being generated by object processing, object properties are stored in the collection of object representations, confirming

that object representations are data structures that include object properties generated by object processing. Figure 2 from the '974 patent discloses that Object Processing Unit 93 (annotated below with red oval) can be used to process output from Sensor 92 “to detect objects and/or their properties in Device’s 98 surrounding.” *Id.*, 71:40-43.

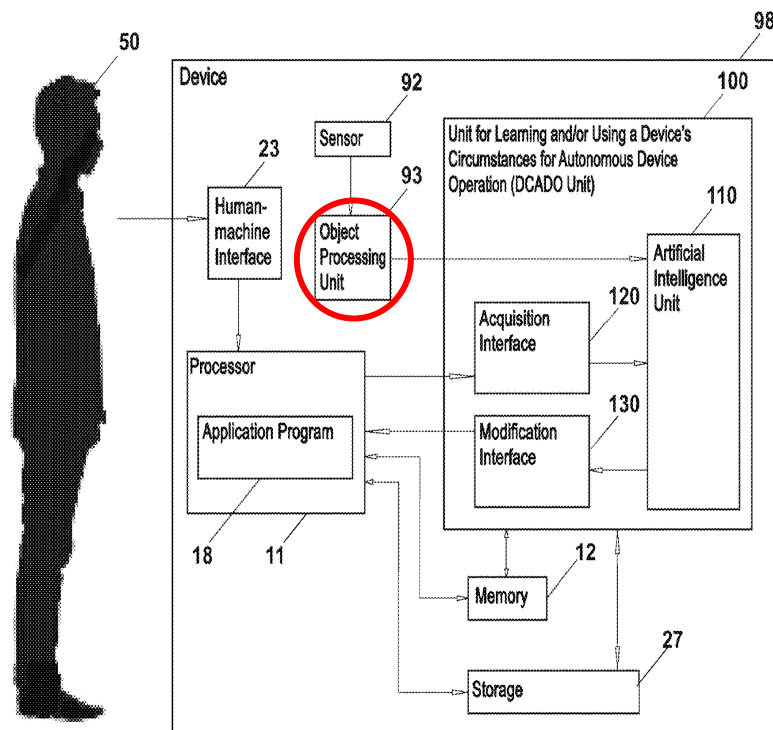


FIG. 2

Id., Figure 2. Object Processing Unit 93 creates or generates a

Collection of Object Representations 525 (also referred to as Coll of Obj Rep or other suitable name or reference) and stor[es] one or more Object Representations 625 (also referred to simply as

object representations, representations of objects, or other suitable name or reference), Object Properties 630 (also referred to simply as object properties or other suitable name or reference), and/or other elements or information into the Collection of Object Representations.

Id., 71:43-53. Because the object properties are generated by Object Processing Unit 93 and stored in the object representations, an object representation is a data structure whose object property is generated through object processing.

The specification further explains that object representations are data structures that include “knowledge (i.e. unit of knowledge, etc.) of Device’s 98 circumstances including objects with various properties at a particular time.” *Id.*, 71:64-66. This portion of the specification confirms that an object representation is a data structure that includes an object property generated by object processing. Patent Owner’s construction is confirmed by and consistent with the language of the claims and the various disclosures regarding object representations throughout the specification.

As explained above, Patent Owner’s construction of “object representation” should be adopted. Construction of this term is appropriate because there is a dispute regarding this term, in particular with respect to Petitioner’s mapping of prior art, as explained below in Section VI.

B. “means for generating or receiving”; “means for anticipating”; and “means for executing” (Claim 19)

Patent Owner has disclaimed claim 19, so construction of these terms is unnecessary.

VI. PETITIONER HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD THAT THE CITED PRIOR ART RENDERS THE CHALLENGED CLAIMS UNPATENTABLE

A. Ground 1 Fails

Regarding Ground 1, Petitioner fails to show that Grotmol anticipates claims 4-5, 7, and 14-15 of the '974 patent. Petitioner fails to show that Grotmol discloses multiple limitations in these claims. As explained in the following sections, these limitations include the second device recited in claim 4, the matching disclosed in claim 5, the connections recited in claim 7, and the object representations recited in claims 14-15.

1. Claim 4: Grotmol Does Not Disclose a Knowledge Base that is Trained By Operating First and Second Devices in the Claimed Manner

Petitioner fails to show that Grotmol anticipates claim 4 of the '974 patent because Grotmol fails to disclose that the knowledgebase includes the claimed fourth correlation learned in another learning process involving the second device. Claim 4 depends from claim 1 and requires, among other things:

wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a

fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes: generating or receiving the fourth circumstance representation; and obtaining or receiving the fourth one or more instruction sets for operating the second device.

Ex. 1001, Claim 4.

Grotmol only discloses one user operating one device in one learning process. Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and a second correlation learned on one device in one learning process and a fourth correlation learned on a *second* device in a *second* learning process.

Petitioner points to Grotmol's disclosure that "trained configuration may be loaded to one or more other robots in order to provide learned behaviors," Petition, 28 (quoting Ex. 1004, 33:30-32), as disclosing the elements of claim 4, but that portion of Grotmol only discloses that a trained configuration may be loaded from a first robot to a second robot. Grotmol never discloses that the second robot detects a circumstance that is later included in a fourth circumstance representation as a part of a fourth correlation in the knowledgebase. Further, Grotmol does not disclose that

“at least a portion of the fourth correlation is learned in another learning process,” as required by claim 4.

Petitioner’s argument that “Grotmol discloses that the memory component of a first robot can store the claimed first and second correlations as well as a fourth correlation learned in another learning process involving the operation of a second robot—i.e., a circumstance detected by the sensor of a second robot correlated with instructions for operating that second robot,” Petition, 28, is incorrect and not supported by the disclosure of Grotmol. Grotmol never discloses that the second robot provides a fourth correlation including a circumstance detected by the second robot to be included in the knowledgebase. Grotmol merely discloses that “trained configuration may be loaded to one or more other robots in order to provide learned behaviors.” Ex. 1004, 33:30-32. Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process and a fourth correlation learned on a second device in a second learning process in a knowledgebase, and thus fails to disclose all the features of claim 4.

2. Claim 5: Grotmol Does Not Disclose the Claimed Matching

Petitioner fails to show that Grotmol anticipates claim 5 of the ’974 patent because Grotmol fails to disclose the claimed matching. Petitioner points to Grotmol’s disclosure regarding computing a similarity measure (how similar images

are to one another) and comparing that similarity measure against a threshold. Petition, 28-29. But that is different from the matching of claim 5, which requires determining that a number of partially matching portions exceeds a threshold number or percentage (of portions). Grotmol fails to disclose the specific claimed method for matching.

Claim 5 depends from claim 1 and requires, among other things, a matching process that includes:

determining that a number of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number, or determining that a percentage of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold percentage.

Ex. 1001, Claim 5.

Thus, claim 5 requires either a) “determining that a ***number of*** at least partially matching ***portions*** of the third circumstance representation and portions of the first circumstance representation exceeds a ***threshold number***,” or b) “determining that a ***percentage*** of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold ***percentage***.”

Grotmol's comparison based on a similarity measure, which Petitioner relies on, does not disclose the elements of claim 5. Petition, 29. Using the number of at least partially matching portions in the matching process involves counting the portions and determining whether this counted number of portions exceeds a numerical threshold, and Grotmol does not disclose any such counting of portions and numerical threshold. Further, using the percentage of at least partially matching portions in the matching process involves counting the portions to compute the percentage and determining whether this computed percentage of portions exceeds a percentage threshold, and Grotmol does not disclose any such counting of portions and percentage threshold.

Petitioner contends that Grotmol discloses “that determining a control signal for operation of the robot may involve computing a similarity measure for a given training set and another training set, and determining *whether that similarity measure exceeds a threshold.*” *Id.* (emphasis added). Grotmol discloses comparing a subset of features with a training set, with “the similarity measure characterizing similarity between features of the subset, and features of the given training set,” not the number or percentage of the similar features. Ex. 1004, 38:50-52. A similarity measure is for measuring similarity of elements, not for counting their number or computing their percentage. Hence, a similarity measure is clearly different than the number or percentage of the similar elements after the similarity measure of those

elements is determined. Further, Grotmol's disclosure regarding using the similarity measure does not meet either disjunctive prong of the foregoing claim language of claim 5. Grotmol does not disclose determining whether a number *of partially matching portions* exceeds a threshold number (of matching portions), as recited in the first disjunctive prong of claim 5.

Grotmol also does not disclose that its use of the similarity measure discloses determining that a *percentage* of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a *threshold percentage* for similar reasons. Grotmol does not disclose using a percentage in its matching process at all. And Petitioner has not pointed to any disclosure in Grotmol regarding a percentage. Petition, 29. Simply put, Grotmol discloses a different approach than the specific matching claimed in claim 5.

3. Claim 7: Grotmol Does Not Disclose the Claimed Connections

Petitioner fails to show that Grotmol anticipates claim 7 of the '974 patent because Grotmol fails to disclose the claimed "first connection" and "second connection." Each claimed connection links (connects) correlation data structures. Grotmol does not disclose correlations connected with such connections. Grotmol's disclosure of simply storing training data in sequence fails to disclose the claimed connections.

Claim 7 depends from claim 1 and requires:

wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating: the first device, the second device, or a third device, and wherein a first connection is generated to connect the first correlation with the second correlation, and wherein a second connection is generated to connect the second correlation with the fourth correlation.

Ex. 1001, Claim 7.

Petitioner's argument that "[t]he training data stored in memory in an order or sequence" disclosed in Grotmol "corresponds to the claimed first and second 'connections' between the first and second correlations, and the second and fourth correlations," Petition, 32, is wrong. The connections disclosed in the '974 patent are specific links generated to connect correlation data structures in a knowledgebase. By contrast, Grotmol merely discloses storing information in a sequence and fails to disclose connections or links between correlation data structures.

The '974 patent provides that "[k]nowledge cells [containing correlations] may be connected, interrelated, or interlinked into knowledge structures using statistical, artificial intelligence, machine learning, and/or other models or techniques." Ex. 1001, 153:66-154:2. As shown in Figure 18A below, the '974

patent explains that the claimed knowledge cells 800za-800zc, which include correlations, are elements or data structures of a knowledgebase and can be connected with connections 853z1-853z2. *Id.*, 106:6-57.

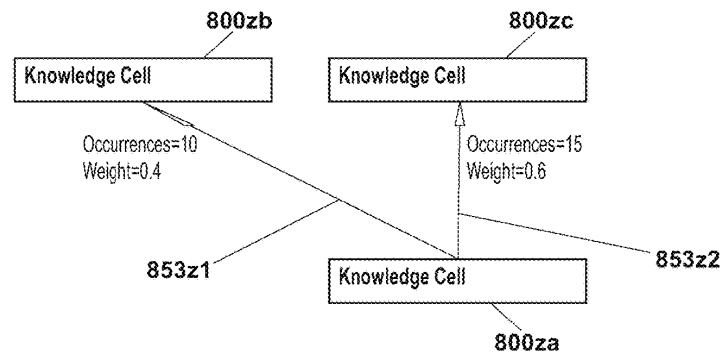


FIG. 18A

Id., Figure 18A. Connections are used to indicate and track relationships between knowledge cells or correlations to enable more efficient autonomous device operation. *Id.*, 106:6-57; 108:31-35. Further, connections are used to create paths through the knowledgebase for efficient storage and autonomous operation. “Neural Network 530a may store Knowledge Cells 800 interconnected by Connections 853 where following a path through the Neural Network 530a can later be used to enable 35 autonomous Device 98 operation.” *Id.*, 108:31-35.

The '974 patent explains that the knowledgebase uses connections as links to enhance autonomous operation. That is, unlike the simple storage in a sequence disclosed by Grotmol, knowledge cells, which are data structures that are created

and structured in a specific way to store object representations correlated with instructions sets (i.e. correlations), *id.*, 98:54-99:10, are connected in the knowledgebase with connections that can be weighted. *Id.*, 131:64-132:26. This creates paths through the knowledgebase. *Id.* The connections are used in the comparison process to enhance autonomous operation as correlations which include collections of object representations that are connected by connections may be compared to find similar collections of object representations. *Id.* These portions of the specification confirm that knowledge cells are not merely basic storage but are specifically created, constructed, and structured data structures that may be connected or interlinked using connections. No such connections are disclosed in Grotmol.

Moreover, claim 7 additionally requires that the first and second connections are generated. *Id.*, Claim 7. Grotmol does not disclose generation of connections. Petitioner has failed to point to any portions of Grotmol that disclose this generation.

Petitioner incorrectly argues that simply “storing sequences of images with their corresponding instruction sets,” as in Grotmol, discloses the claimed connections. Petition, 32. A sequence of elements inherently does not need any connections since the sequence is an ordered group of elements of a single path (i.e. sequence), hence, Grotmol never discloses connections because Grotmol does not need them. On the other hand, as previously mentioned, the '974 patent makes clear

that connections link specific correlations to create multiple paths (unlike a single path in Grotmol's sequence) through the knowledgebase to enable multiple options in the decision making for autonomous operation. Grotmol's disclosure of "an ordered buffer in a non-volatile memory," Ex. 1004, 38:39-42, does not constitute disclosure of the claimed connections that link correlations or data structures.

Petitioner also cites Grotmol's disclosure that the images may be ordered in the training buffer either temporarily or in some other fashion, Petition, 32-33, but regardless of the order of the training buffer, Grotmol does not disclose connections or links that connect correlation data structures. As a result, Grotmol's disclosure of basic memory storing ordered images and instruction sets does not disclose the claimed connections of claim 7.

4. Claims 14-15: Grotmol Does Not Disclose Object Representations

Petitioner fails to show that Grotmol anticipates claims 14 and 15 of the '974 patent because Grotmol does not disclose the claimed "object representation" under the proper construction of that term. As discussed above, in the context of the '974 patent, an "object representation" should be construed as a "data structure that includes an object property generated by object processing." *Supra* Section V.A. Grotmol does not disclose the claimed "object representation" under this construction.

Claim 14 depends from claim 1 and requires:

wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more object representations, or one or more collections of object representations.

Ex. 1001, Claim 14. Claim 15 similarly recites “wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations.” Ex. 1001, Claim 15.

Petitioner’s argument that the images disclosed in Grotmol constitute the claimed “object representations” is incorrect for several reasons. Petition, 42-43. ***First***, images are not “object representations” under the proper construction of that term. Petitioner has not established that images are data structures that include an object property generated by object processing. Thus, Petitioner has not shown that Grotmol discloses the claimed “object representations.”

Figure 4B of the ’974 patent makes clear that an object representation (data structure that includes an object property generated by object processing, *see supra* Section V.A) on its face is something entirely different than an image, especially

when compared with Grotmol's image, e.g., shown in Figure 20A (both shown below).

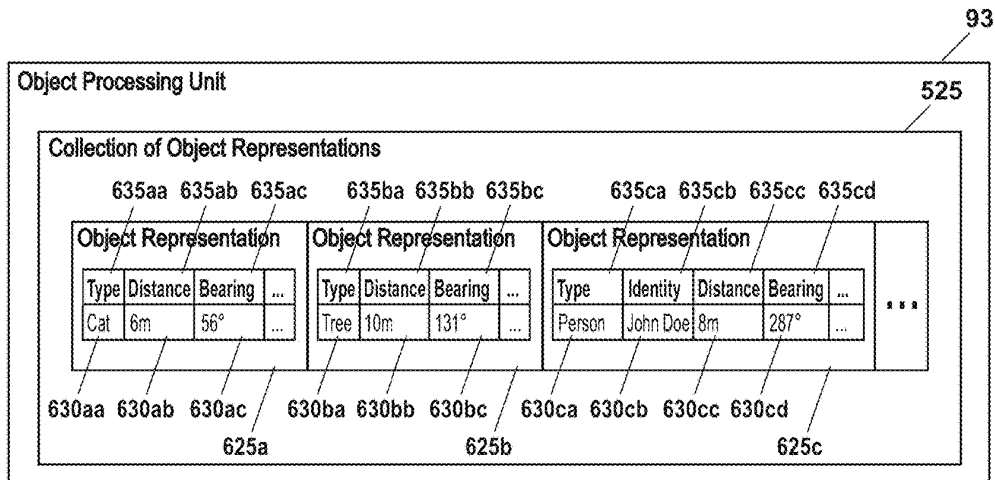


FIG. 4B

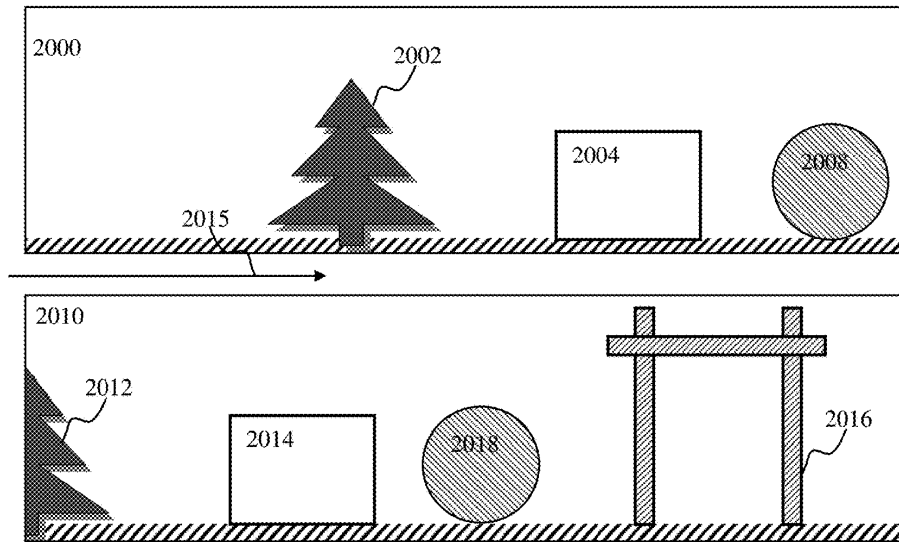


FIG. 20A

Ex. 1001, Figure 4B (top); Ex. 1004, Figure 20A (bottom).

As shown in Figure 4B of the '974 patent, Object Processing Unit 93 “may create or generate Collection of Object Representations 525 including Object Representation 625a representing Object 615a, Object Representation 625b representing Object 615b, and Object Representation 625c representing Object 615c.” Ex. 1001, 80:16-21. Each of the Object Representations 625a, 625b, and 625c is clearly not an image but rather is an entirely different data structure that includes an object property generated by object processing (i.e. processing of images and/or other output of sensors). *Id.*, 80:21-34. For example, “Object Representation 625a may include Object Property 630aa ‘Cat’ in Category 635aa ‘Type’, Object Property 630ab ‘6 m’ in Category 635ab ‘Distance’, Object Property 630ac ‘56°’ in Category 635ac ‘Bearing.’” *Id.*, 80:21-25. These labels and numbers indicating various object properties of interest (and which are only meaningful after output from the sensors such as images has first been processed into object properties, via object processing) show that an object representation in the '974 patent is a data structure including a generated object property. That is significantly different from Grotmol’s image and its pixels.

Second, the pictures disclosed in Grotmol are also not object representations because they fail to include an object property generated by object processing, as required by the proper construction of “object representation.” An object property included in an object representation is generated by object processing and is not

merely a pixel or value like in Grotmol's image that is not processed to generate object properties that are included in object representations. *Id.*, 71:38-43. "Object Processing Unit 93 comprises the functionality for processing output from Sensor 92 to obtain information of interest, and/or other functionalities. As such, Object Processing Unit 93 can be used to process output from Sensor 92 to detect objects and/or their properties in Device's 98 surrounding." *Id.* While Sensor 92 may sense or capture simple images including pixels, *id.*, 69:45-48, object representations include an object property that has been generated by object processing in the Object Processing Unit 93. *Id.*, 71:38-43. Examples of object properties provided by the '974 patent, including type of an object, distance of an object, bearing of an object, and coordinates of an object included in object representations, make clear that those properties are generated by object processing, unlike Grotmol's image that includes pixels that are not processed to generate object properties that are included in object representations. *Id.*, 72:44-53; 72:62-73:1.

Object properties (e.g., type, distance, bearing, coordinates, etc.) included in an object representation are created by processing that includes processing images. Object processing, as described in more detail in the previous discussion of Object Processing Unit 93, includes processing of data from a sensor (e.g., image pixels obtained from a camera) to extract useful object properties such as, for example, type, distance, bearing, coordinates, etc. that are included in an object representation.

The images are the input into the object processing and object properties that are then included in an object representation are the output of the object processing. Logically, input into object processing is different than output of object processing. This confirms that Grotmol's images do not disclose "object representations" as properly construed. To the extent that the Board determines that the pixel values of Grotmol's image are properties, Grotmol nevertheless does not disclose that a pixel value is an *object* property ***generated by object processing*** as discussed above. An image is simply a matrix of pixels that are not processed to generate object properties that are included in object representations.

Petitioner's argument that "[t]he '974 patent does not define 'object representations' beyond its use in the phrase 'collection of object representations,' which it defines as 'one or more representations of objects detected by the sensor at a time,'" Petition, 42, is not correct. As previously discussed, Figure 4B and the associated disclosure of the specification make clear that an object representation is a data structure including an object property generated by object processing. Petitioner's failure to address these disclosures when seeking to map an image to the claimed "object representation" undermines its argument.

In addition, none of the portions of the specification cited by Petitioner actually support its position that an image discloses an object representation. Petition, 42. Petitioner's argument that the '974 patent discloses that a sensor

including a camera may “detect” an object representation misses the mark. *Id.* In the portion of the specification cited by Petitioner, the ’974 patent explains that the camera “capture[s] pictures of Device’s 98 surrounding” and that the camera “may be useful in detecting existence of an object” and properties such as “distance of an object, bearing/angle of an object, location of an object, shape/size of an object, activity of an object, and/or other properties of an object.” Ex. 1001, 69:45-56 (cited by Petitioner at Petition at 42). While the camera “can be used to capture pictures,” *id.*, the portion of the specification cited by Petitioner does not disclose that a picture (or image) captured by the camera is itself an object representation data structure that includes an object property generated by object processing per the above proper construction and as shown in Fig. 4B and described in the accompanying specification as discussed above. A camera is not designed to and does not detect any objects or object properties, but it only captures an image of whatever happens to be in the camera’s field of view. Neither the camera nor the images captured by the camera know about any objects or object properties without those images being processed through object processing that Grotmol does not disclose. And the ’974 patent does not equate pictures (or images) with object representations.

Petitioner also argues that the ’974 patent provides examples of objects represented in pictures, Petition, 42, but the portion of the specification cited by Petitioner merely provides examples of objects and does not support the assertion

that an image is itself an object representation data structure that includes an object property generated by object processing per the above proper construction. Ex. 1001, 72:52-57. And Petitioner's statement that the '974 patent "further describes various approaches to object recognition," Petition, 42, does not mean that an image is an object representation including an object property (e.g., type, distance, bearing, coordinates, etc.) of interest generated by object processing. As shown below in Figure 3A from the '974 patent, moreover, Picture Recognizer 94A that performs object recognition may indeed be a part of Object Processing Unit 93 that takes images as input, and processes and detects object properties (that make up object representations) from the images as explained above. This confirms that images that are not processed for object properties are not object representation data structures that include those object properties generated by processing of objects and/or object properties from those images.

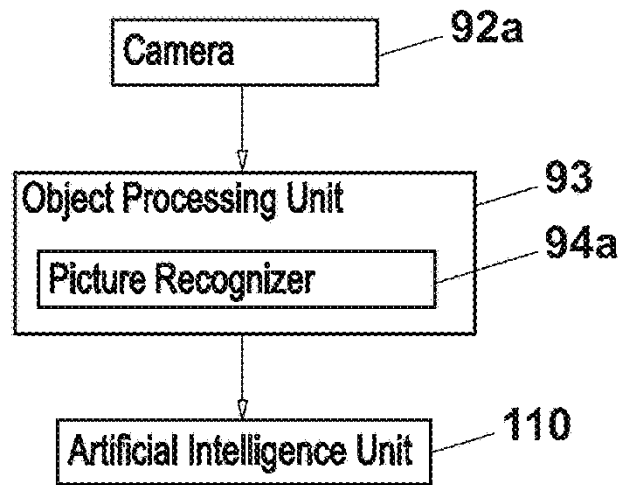


FIG. 3A

Ex. 1001, Figure 3A; *see also id.*, 69:45-70:25.

Petitioner’s attempt to equate Grotmol’s disclosure of “images” that comprise “representations of visual field,” with the claimed object representations should be rejected. Petition, 42 (citing Ex. 1004, 38:54-56). Nothing in the cited portions of Grotmol discloses object representations that are data structures that include an object property generated by object processing.

As shown below in Figure 20A from Grotmol, images 2000 and 2010 are not object representations including an object property generated by object processing, but rather are merely pictures that “comprise representations [of] one or more objects, e.g., a tree 2002, a rectangle, a ball 2008, and/or other objects.” Ex. 1004 at

38:56-65. The pictures capture objects that happen to be in the field of view and are not processed into object properties, let alone object representation data structures that include processed object properties. Grotmol never discloses the claimed “object representations” as properly construed—namely, as data structures that include object properties generated by object processing.

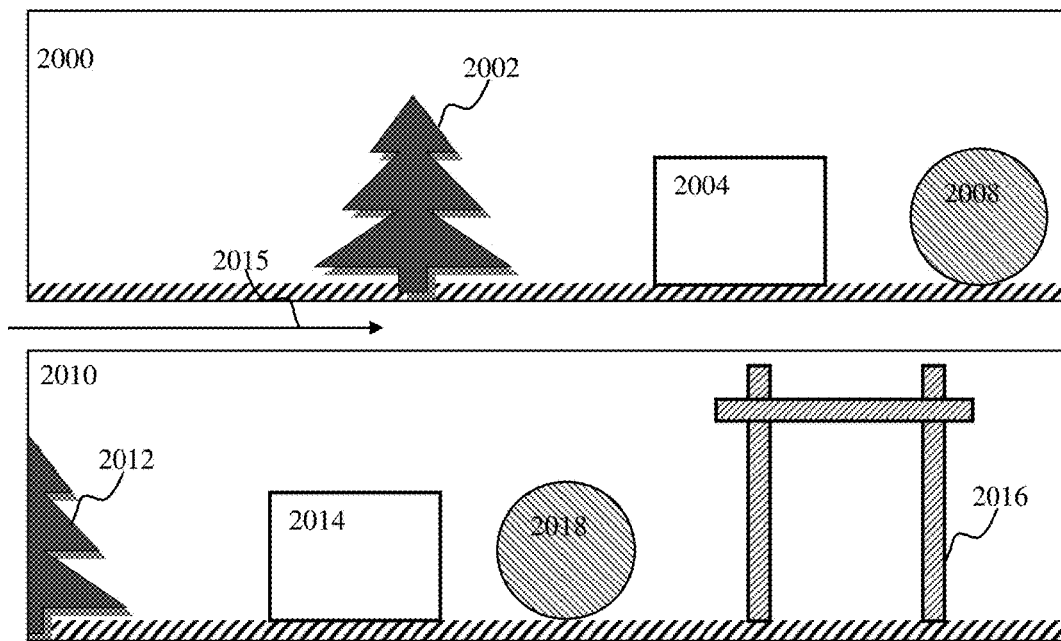


FIG. 20A

Id., Fig. 20A. As shown in Figure 20A above, an image is a matrix of pixels, whereas the claimed object representation is a data structure that includes object properties including characteristics, labels, and numbers, as shown in Figure 4B of the '974 patent. Therefore, Grotmol's image is logically, structurally, and functionally different than the object representation data structure as properly construed.

Grotmol does not contemplate an object representation that is a data structure including an object property generated by object processing. Grotmol discloses an image that is a matrix of pixels (Ex. 1004, 9:1-3; 9:16-17; 9:22-23) but does not disclose that the matrix includes an object property generated by object processing. And Petitioner has not shown that Grotmol discloses any other data structure that includes an object property generated by object processing, either. That is not surprising, because Grotmol is not directed to the type of object processing that produces object properties (e.g., distance, bearing, etc. as shown in Fig. 4B of the '974 patent) that are included in a data structure to promote efficient decision making regarding objects like in the '974 patent.

Petitioner states that Grotmol “refer[s] to objects shown within images 2000 and 2010 as ‘object representations’ and ‘representations,’” Petition, 42 (citing Ex. 1004, 38:65-39:12). But while Grotmol describes representations of the tree 2012, the rectangle 2014, and the ball 2018 shown in Figure 20A as “object representations,” Ex. 1004, 38:65-39:12, they are not object representation data structures including an object property generated by object processing, as disclosed and claimed in the '974 patent. In other words, Grotmol happens to use the words “object representation” recited in claims 14 and 15 but in a significantly different context and with significantly different meaning than what is claimed in the '974 patent, and does not meet the limitation under the proper construction.

Finally, Grotmol’s disclosure that a sensor can be used for object recognition and edge detection does not mean that Grotmol discloses object representations as data structures that include an object property generated by object processing. Petition, 43. Grotmol’s alleged disclosure of object and edge detection does not support the argument that Grotmol discloses object representations that are *data structures including an object property generated by* object processing.

B. Ground 2 Fails

Regarding Ground 2, Petitioner fails to show that Grotmol in view of the knowledge of a POSA renders claims 11 of the ’974 patent obvious. Petitioner fails to show that Grotmol discloses multiple limitations in this claim, and Petitioner’s attempt to rely on the knowledge of a POSA to fill in the gaps in Grotmol is ineffective. Claim 11 is not obvious over Grotmol in view of the knowledge of a POSA.

1. Claim 11: Grotmol Does Not Disclose or Suggest the Claimed Another User or Second Device

Grotmol fails to disclose the claimed “another user” and the claimed “second device” in claim 11. Claim 11, which depends from claim 1, provides for multiple users and a second device and recites:

wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating *the second*

device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors *of the second device*, and wherein at least a portion of the fourth correlation is learned *in another learning process* that includes operating *the second device* at least partially by *another user*.

Ex. 1001, Claim 11 (emphasis added).

Grotmol fails to disclose the claimed “another user” of claim 11. Further, Grotmol fails to disclose that the knowledgebase includes the claimed fourth correlation learned in another learning process involving the second device and another user. As discussed above regarding claim 4 in Section VI.A.1, Grotmol discloses only one user operating one device in only one learning process. The knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process. Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in a second learning process with another user.

Petitioner apparently concedes that Grotmol does not disclose the claimed “another user” and “second device” of claim 11, instead contending with little or no support that “it would be obvious to a POSITA that the training process involving

operation of the first robot (resulting in the first trained configuration), and the training process involving operation of the second robot (resulting in another trained configuration) could be done by different users.” Petition, 57-58. Petitioner is wrong and provides no basis for its obviousness argument.

The '974 patent discloses that “multiple operators (i.e. Users 50, etc.) may operate their Devices 98 where the Devices 98 may be configured to transmit their operations in circumstances including objects with various properties to a remote DCADO Unit 100. Such remote DCADO Unit 100 enables learning of the operators’
35 collective knowledge of operating Device 98 in circumstances including objects with various properties.” Ex. 1001, 95:31-36. Claim 11 recites that “at least a portion of the fourth correlation is learned in another learning process that includes operating the second device at least partially by another user.” Claim 11’s recitation of a second device and another user is not taught by Grotmol.

Petitioner points to Grotmol’s disclosure that “trained configuration may be loaded to one or more other robots in order to provide learned behaviors,” Petition at 58, as disclosing the claimed “another user” of claim 11, but that portion of Grotmol only discloses that a trained configuration may be loaded from a first robot to a second robot. Ex. 1004, 33:30-32. Grotmol never discloses that the second robot detects a fourth circumstance that is later included in a fourth circumstance representation as a part of a fourth correlation in the knowledgebase. Further,

Grotmol fails to disclose that “at least a portion of the fourth correlation is learned in another learning process” involving another user, as required by claim 11.

Petitioner’s argument that “Grotmol discloses that the memory component of a first robot can store the claimed first and second correlations as well as a fourth correlation learned in another learning process involving the operation of a second robot—i.e., a circumstance detected by the sensor of a second robot correlated with instructions for operating that second robot,” Petition, 62, is wrong. Grotmol never discloses that the second robot provides a fourth correlation including a circumstance detected by the second robot to be included in the knowledgebase. Petitioner is reading this disclosure into Grotmol, as Grotmol merely discloses that “trained configuration may be loaded to one or more other robots in order to provide learned behaviors,” Ex. 1004, 33:30-32, which is about loading the previously learned knowledge into another robot and not what claim 11 requires: a fourth circumstance detected at least in part by the one or more sensors of the second device, and learning the fourth correlation in another learning process that includes operating the second device at least partially by another user. Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in a second learning process with another user.

Apparently recognizing that Grotmol fails to disclose the claimed “another user,” Petitioner contends that “it would be obvious that the multiple learning processes could be done by different users operating the robot.” Petition, 57. But this is an unjustified leap that goes outside of Grotmol’s disclosure, and Petitioner has not pointed to a prior art reference that actually discloses the limitation.

Petitioner also contends that “it would be obvious to a POSITA that the training process involving operation of the first robot (resulting in the first trained configuration), and the training process involving operation of the second robot (resulting in another trained configuration) could be done by different users.” *Id.*, 58. But this contention misses the point. Petitioner describes a situation involving two trained configurations each stored and learned on a different robot, while claim 11 recites a single knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in a second learning process with another user.

In addition, common knowledge of a POSA may only be used to supply a missing claim limitation when that limitation is “unusually simple and the technology particularly straightforward.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016). Petitioner has not established that the limitation at issue here, which involves having different users operate different devices in different

learning processes to learn mixed knowledge into a single knowledgebase, satisfies those conditions. Using different users with different devices in different learning processes to learn mixed knowledge into a single knowledgebase would not have been obvious to a POSA due to the complexities of combining the mixed knowledge into a single knowledgebase.

Enabling a system to learn mixed autonomous operation knowledge into a single knowledgebase from different devices in different learning processes with different users is an approach not found in Grotmol and not obvious to a POSA. For example, this approach may involve combining the learned knowledge from multiple devices into a coherent knowledge structure, identifying each user to store particular learned operations and preferences in portions of the knowledgebase for user-specific autonomous operations, combining the learned knowledge from specific devices and/or users with other devices' and users' learned knowledge, and/or other issues not found in Grotmol and not obvious to a POSA. Petitioner has not established that the limitations missing from Grotmol are unusually simple and the technology particularly straightforward. *See Arendi*, 832 F.3d at 1361. Grotmol does not disclose a knowledgebase that includes mixed knowledge of correlations learned on one device in one learning process with one user and a fourth correlation learned on a second device in a second learning process with another user. Petitioner

has not established that Grotmol in view of the knowledge of a POSA discloses or suggests the approach claimed in claim 11.

C. Ground 3 Fails

Regarding Ground 3, Petitioner fails to show that Grotmol in view of Hickman renders claims 4 and 11 of the '974 patent obvious. Apparently recognizing that Grotmol fails to disclose the claimed fourth correlation involving the second device of claim 4 and the claimed fourth correlation involving the second device and another user of claim 11, Petitioner seeks to combine Grotmol with Hickman to arrive at the claimed invention. But Petitioner fails to show that Grotmol or Hickman disclose or suggest the claimed second device or another user, as required by these challenged claims. Indeed, both references fail to disclose “a fourth circumstance detected at least in part by the one or more sensors of the second device,” and “a portion of the fourth correlation is learned in another learning process that includes . . . obtaining or receiving the fourth one or more instruction sets for operating the second device,” as required by claim 4, and “wherein at least a portion of the fourth correlation is learned in another learning process that includes operating the second device at least partially by another user,” as required by claim 11. Because the references fail to disclose these limitations, Ground 3 fails.

1. Claim 4: Grotmol and Hickman Do Not Disclose or Suggest the Claimed Fourth Correlation and Second Device

Petitioner first argues that “Grotmol discloses that the memory component of a first robot can store the claimed first and second correlations as well as a fourth correlation learned from operating a second robot—i.e., a circumstance detected by the sensor of a second robot correlated with instructions for operating that second robot.” Petition, 62. But as discussed above with respect to Ground 1 and claim 4, this contention is unsupported as Grotmol does not disclose or suggest this limitation, including the fourth correlation and second device. Grotmol discloses one user operating one device in one learning process. The knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process. Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process and a fourth correlation learned on a second device in another learning process.

Hickman also does not disclose or suggest the claimed correlations including the fourth correlation learned in another learning process involving the second device, as required by claim 4. Although Hickman discloses a cloud system that can generally learn from multiple devices, it does not disclose the claimed first and

second correlations learned on one device in one learning process and the fourth correlation learned on a second device in a second learning process.

Claim 4 recites that the “knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device.” Ex. 1001, Claim 4. Further, claim 4 states “wherein at least a portion of the fourth correlation is learned in another learning process that includes: generating or receiving the fourth circumstance representation; and obtaining or receiving the fourth one or more instruction sets for operating the second device.” *Id.*

Hickman does not disclose or suggest the fourth correlation. Hickman provides a primitive method for storing and sharing object information. Ex. 1005, Abstract. As shown below in Figure 4 from Hickman, robot 404 may obtain object information via one or more sensors. *Id.*, 25:14-19. That information is transmitted to cloud computing system 401, where it is stored and can be used by second robot 413. *Id.*, 26:24 -27:26. Hickman does not disclose the claimed correlations and how those correlations are used in a knowledgebase to autonomously operate a device, as required by claim 4. As a result, neither Hickman nor Grotmol disclose or suggest the features of claim 4.

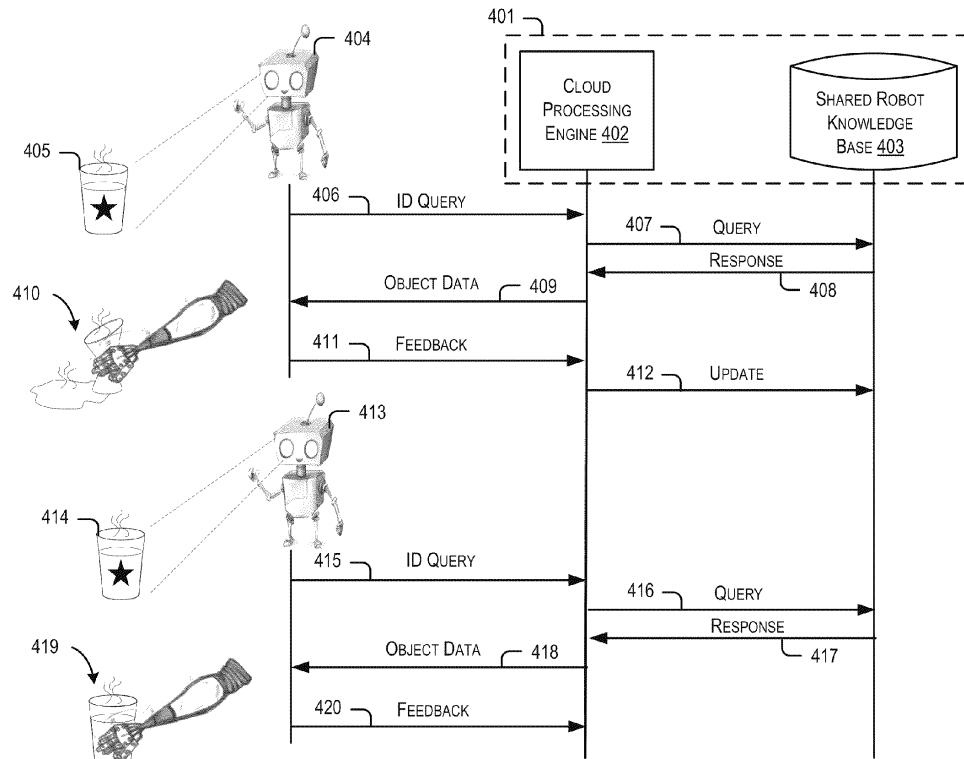


FIGURE 4

Id., Figure 4.

2. Claim 11: Grotmol and Hickman Do Not Disclose or Suggest the Claimed Fourth Correlation, Second Device and Another User

Petitioner apparently contends that Grotmol discloses the claimed “fourth correlation,” “second device,” and “another user” of claim 11, Petition, 64, but as discussed above regarding Ground 1 and claim 11, Grotmol does not disclose or suggest the claimed “fourth correlation,” “another user” and the “second device” in claim 11. Grotmol does not disclose or suggest that the knowledgebase includes the

claimed fourth correlation learned in another learning process involving the second device and another user. As discussed above regarding claim 4, Grotmol discloses one user operating one device in one learning process. The knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process. Grotmol does not disclose or suggest a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in another learning process with another user.

Hickman also does not disclose or suggest the claimed correlations including the fourth correlation learned in another learning process involving the second device and another user, as required by claim 11. Hickman discloses a cloud system that can generally learn from multiple devices, but it does not disclose the claimed first and second correlations learned on one device in one learning process with one user and the fourth correlation learned on a second device in a second learning process with another user.

For the same reasons discussed above with respect to claim 4, Hickman does not disclose or suggest the claimed correlations and how those correlations are used in a knowledgebase to autonomously operate a device, as required by claim 11. Thus Grotmol and Hickman do not disclose or suggest the features of claim 11.

3. Claims 4 and 11: It Would Not Have Been Obvious to Combine Grotmol and Hickman to Arrive At the Claimed Invention¹

Petitioner's argument that it would have been obvious to combine Grotmol's training sets with Hickman's primitive cloud storage approach uses impermissible hindsight to arrive at the claimed invention. Petition, 58-66. Grotmol discloses one user operating one device in one learning process. The knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process. Further, Hickman's simple cloud storage of object information does not contemplate using correlations and other data structures to learn knowledge for autonomous operation as required by claims 4 and 11. Petitioner's obviousness analysis is also deficient because it fails to explain what claim limitation is missing from Grotmol and how Hickman discloses the missing claim limitation.

Petitioner's use of impermissible hindsight to arrive at the claimed invention is highlighted in its statement that "[i]n the combination of Grotmol and Hickman, the shared knowledge base[] would include multiple training sets (i.e., circumstance representations correlated with instruction set) learned during the operation of multiple devices," Petition, 63. Petitioner is using the claimed sophisticated use of

¹ See *supra* Sections VI.A-B for the text of claims 4 and 11.

correlations, multiple users, and multiple devices as a roadmap for its obviousness combination. This is impermissible hindsight, as neither Grotmol nor Hickman, alone or in combination, discloses or suggests the claimed invention. *See TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019) (warning against “us[ing] the challenged patent as a roadmap to reconstruct the claimed invention using disparate elements from the prior art”). And it would not have been obvious to one skilled in the art to use Hickman’s primitive cloud storage method with Grotmol’s single-device training sets, as both references fail to contemplate the use of sophisticated data structures including correlations to enable autonomous operation.

VII. INSTITUTION SHOULD BE DENIED UNDER 35 U.S.C. § 314(a)

Petitioner has failed to carry its burden to show a reasonable likelihood of prevailing on its petition for numerous reasons, as discussed above. Denial of institution is further warranted under the discretion accorded to the Board in 35 U.S.C. §314(a). Petitioner’s failure to address the Board’s discretion in its petition confirms that the Board should use its discretion to deny institution.

Apple, Inc. v. Fintiv, Inc. provides a multifactor test for the Board to consider when exercising its discretion to deny institution. IPR2020-00019, Paper 11 (precedential) (“*Fintiv*”). While the Director has identified three circumstances in which denial under *Fintiv* is inappropriate (*see* Katherine K. Vidal, *Interim*

Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) (“*Fintiv* Memo”)), none of those circumstances apply. In addition, the enumerated factors in *Fintiv* favor denial in this case. In view of *Fintiv*, the Board should exercise its discretion to deny institution of this IPR.

A. *Fintiv* Applies To This Proceeding

This proceeding does not implicate any of the circumstances in which *Fintiv* is inapplicable. First, although *Fintiv* would not apply to a co-pending ITC proceeding, *Fintiv* Memo, 7, this exception is not relevant because the co-pending proceeding—*Autonomous Devices, LLC v. Tesla, Inc.*, No. 2-21-cv-00446 (D. Del) (the “Delaware Litigation”)—relevant to this proceeding is a district court (not ITC) case. Second, *Fintiv* would be inapplicable if the petition includes a *Sotera*-type stipulation that forecloses from the district court proceeding all grounds that were raised or reasonably could have been raised in an IPR. *Fintiv* Memo, 7. This exception does not apply here because Petitioner made *no* stipulation, let alone a *Sotera* stipulation, in its petition. *See generally* Petition.

Finally, *Fintiv* would not apply where the merits are compelling. *Fintiv* Memo, 4-5. This bar is a higher standard than for institution; it is only met if it is “highly likely that the petitioner would prevail with respect to at least one challenged claim.” *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064,

Paper 102 at 49 (PTAB Oct. 4, 2022) (precedential). Here, the merits are not compelling. As discussed above, the cited references suffer from numerous fatal deficiencies. In light of these deficiencies, the petition is not likely to succeed with respect to any remaining claim (after the disclaimer discussed above in Section I) and thus *Fintiv* is applicable here.

B. The *Fintiv* Factors Weigh In Favor of Denying Institution

Fintiv provides a six-factor test to guide the Board’s discretion in whether to grant or deny institution. As discussed below, five of the six *Fintiv* factors favor denial.

1. Factor 1: No Motion to Stay has been filed and the district court is unlikely to grant a stay

Factor 1 asks “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.” *Fintiv*, 6. This factor favors denial of institution because presently there is no stay in the district court proceeding, and there is a low likelihood of a stay. The advanced stage of the underlying litigation disfavors a stay and a stay is unlikely to simplify the issues in the underlying litigation. Thus, factor 1 weighs against institution.

2. Factor 3: The parties and district court have invested significant time into the district court litigation

Factor 3 strongly favors denial because the parties have invested and will continue to invest significant resources in the parallel district court litigation. The

Board weighs “the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision.” *Fintiv*, 9.

The Board will decide whether to institute this IPR on or around December 15, 2023. By that time, the district court and the parties will have completed the following: motion to dismiss briefing, exchanged preliminary infringement and invalidity contentions, exchanged list of claim terms and proposed constructions, and substantially completed document production. *See* Ex. 2005 (showing the district court docket); Ex. 2006 (district court scheduling order). Moreover, fact discovery closes on February 9, 2024. Patent Owner has spent hundreds of hours reviewing Tesla’s technical production and the parties have exchanged thousands of documents. Further, by mid-December 2023 (the institution decision deadline), the parties will have likely begun deposition discovery. Finally, Petitioner waited seven months after the parallel district court litigation was filed to file its petition. *See* Ex. 2005 (showing the district court docket and filing of complaint on November 7, 2022); Petition, 67 (showing Petition filed on June 9, 2023). This unreasonable delay counsels against institution.

As discussed above, the parties have invested and will continue to invest significant resources in the parallel district court litigation, and accordingly, this factor favors denial.

3. Factor 4: There is significant overlap between this proceeding and the district court case

Factor 4 assesses the overlap between the issues raised in the petition and in the parallel proceeding. *Fintiv*, 6. The Board should deny institution because Petitioner has not stipulated to limit its ability to challenge the '974 patent claims in the district court case with prior art similar to that asserted in this proceeding. Further, Petitioner has not filed a stipulation in the district court, giving Petitioner the opportunity to avail itself of duplicative efforts between the district court proceeding and the Board. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18-19 (PTAB Dec. 1, 2020).

Petitioner appears to be positioning itself to be able to reassert in the district court case, following the conclusion of the IPR process, some or all of the very same references that it has petitioned the Board to review or that it reasonably could have raised before the Board. For example, knowing Patent Owner's deadline for filing this Preliminary Patent Owner Response (POPR), Petitioner sought and obtained an extension that prevented Patent Owner from reviewing Petitioner's invalidity contentions, before this POPR is due. Petitioner's invalidity contentions will almost certainly identify multiple combinations of the references relied upon in the Petition in combination with various other references. In such a case, Petitioner's invalidity theories will rely on the same art asserted in this IPR. *Samsung Elecs. v. Clear*

Imaging Research, LLC, IPR2020-01400, Paper 13 at 20-21 (PTAB Feb. 3, 2021) (finding that the petition included sufficient overlap of issues with the parallel district court where the petitioner relied on “substantially identical prior art” in both proceedings). Thus, Petitioner will argue the same references, using the same evidence and likely the same expert at the district court level—which will likely result in significantly overlapping issues between the district court case and this IPR.

Petitioner’s failure to provide a stipulation regarding prior art that it will not pursue in the district court case leaves open the possibility of parallel litigation for the same claims using printed publications and various system combinations not asserted in the Petition. A meaningful stipulation would be broad, tracking the estoppel language of 35 U.S.C. § 315(e), and would be filed in the parallel district court proceeding. Accordingly, efficiency would not be served in the present IPR by allowing Petitioner to challenge the ’974 patent claims with the same prior art references, after expending considerable resources in the district court. *See Fintiv*, 13.

4. Factor 5: The parties in both proceedings are the same

“If a petitioner is unrelated to a defendant, the Board has weighed this fact against exercising discretion to deny institution under *NHK*.” *SK Innovation Co. LTD., v. LG Chem, LTD.*, IPR2020-01239, Paper 14 at 20-21 (PTAB Jan. 12, 2021). However, when the parties are the same in a parallel proceeding and the IPR, as they

are here, “Factor 5 weighs in favor of exercising discretion to deny.” *Id.* Accordingly, Factor 5 weighs in favor of denial of institution.

5. Factor 6: The merits of Petitioner’s petition are not strong

This factor favors denial of institution given the Petition’s weakness on the merits. *E-One Inc. v. Oshkosh Corp.*, IPR2019-00162, Paper 16 at 13-20 (PTAB June 5, 2019). “[I]f the merits of the grounds raised in the petition are a closer call, then that fact has favored denying institution when other factors favor denial are present.” *Fintiv*, 15. As analyzed in the preceding sections, the merits of the Petition are weak in light of at least: (1) Petitioner’s failure to demonstrate that the cited references disclose all of the limitations of the claims discussed above in Section VI; and (2) Petitioner’s failure to present a proper obviousness analysis as discussed above in Section VI. Accordingly, this factor weighs in favor of denial.

VIII. CONCLUSION

Accordingly, for at least the reasons set forth above, institution of *inter partes* review should be denied.

Dated: September 15, 2023

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 have 10,256 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. §42.24(b)(1). This word count was prepared using Microsoft Word 2016.

Dated: September 15, 2023

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CERTIFICATION OF SERVICE

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