

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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TESLA, INC.,  
Petitioner

v.

AUTONOMOUS DEVICES, LLC,  
Patent Owner

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Case: IPR2023-01055  
U.S. Patent No. 11,238,344

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**PATENT OWNER'S SUR-REPLY**

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### **Exhibit List**

| <b>Exhibit</b> | <b>Description</b>                                                                                       |
|----------------|----------------------------------------------------------------------------------------------------------|
| 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 1-2 and 19-20 (previously submitted)                                                |
| 2005           | District Court Docket (previously submitted)                                                             |
| 2006           | District Court Scheduling Order (previously submitted)                                                   |
| 2007           | Declaration of Dr. Eli Saber (previously submitted)                                                      |
| 2008           | Deposition transcript of Dr. Jason Janet dated February 29, 2024 in IPR2023-01055 (previously submitted) |
| 2009           | RESERVED                                                                                                 |
| 2010           | Institution Decision in IPR2023-01054 (previously submitted)                                             |
| 2011           | U.S. Patent No. 10,452,974 (previously submitted)                                                        |
| 2012           | American Heritage Dictionary (1992) Excerpts (previously submitted)                                      |
| 2013           | Webster's Third New International Dictionary (2002) Excerpts (previously submitted)                      |
| 2014           | File history of U.S. Patent No. 10,452,974 (previously submitted)                                        |
| 2015           | Dr. Eli Saber CV (previously submitted)                                                                  |

## I. INTRODUCTION

Petitioner's Reply (Paper No. 30) improperly introduces a number of new arguments in a failed attempt to remedy deficiencies in the Petition. Petitioner has the burden to prove unpatentability of the instituted claims by a preponderance of the evidence, and has not done so. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016). Petitioner, in its Reply, improperly introduces new arguments that should be excluded, has not established that the cited prior art references disclose or suggest all of the limitations of the Challenged Claims (Claims 6-8, 10-12, and 16), and has not rectified numerous other deficiencies in the Petition. As a result, the Board should confirm the patentability of the Challenged Claims.

## II. PETITIONER IMPROPERLY INTRODUCES NEW ARGUMENTS IN ITS REPLY

Petitioner improperly adds new arguments to support its deficient prior art arguments for the first time in its Reply and via a reply declaration (Ex-1010, "Janet Reply Declaration") from its expert, Dr. Janet. ***"It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.'"*** *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (citing 35 U.S.C. §312(a)) (emphasis added). Namely, once a petition is instituted, the challenges set forth in the petition are

crystallized, and the scope of a petitioner’s argument thereafter is expressly limited to “explaining how its original petition was correct.” *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017). Thus, for these same reasons, a petitioner on reply “***may not submit any new evidence, issues, or argument that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.***” *Allsteel Inc. v. Dirtt Environmental Solutions LTD.*, IPR2015-01691, \*2 (PTAB April 22, 2019) (emphasis added).

Yet that is precisely what Petitioner does here. Petitioner argues in its Reply for the first time that Grotmol’s robots “use a collection of controllers,” Reply, 15-16, to allegedly provide a “knowledgebase on the first robot that includes both correlations learned in a learning process on the first robot and correlations learned in another learning process on the third robot,” *id.*, 16. Petitioner elaborates on this new argument for several pages. Reply, 16-20. But in its Petition, Petitioner never mentioned this collection of controllers or explained how it discloses the claimed knowledgebase using mixed knowledge. In fact, the Petition does not even mention multiple controllers in a single robot. If Petitioner wanted to argue that Grotmol’s multiple controllers disclose the claimed invention, it should have done so in the Petition at the requisite level of detail, e.g., at a minimum mentioning the multiple controllers. Petitioner did no such thing, ***never once even using the word***

***“controllers” when discussing the claimed knowledgebase using mixed knowledge.*** Petition (Paper No. 1), 53-54.

Petitioner also tees up new arguments by pointing to new portions of Hickman’s knowledgebase and arguing for the first time that certain information including task data corresponds to the claimed instruction sets. Reply, 22-24. ***Petitioner never mentioned “tasks data” at all in the Petition.*** According to the Board’s rules, a petitioner “may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.” Patent Trial and Appeal Board Consolidated Trial Practice Guide, 73 (Nov. 2019). The Petition’s failure to fully address this limitation is its own deficiency and should not be rewarded by the Board.

The rule that the Petitioner must present all of its arguments up front in the Petition ***is in place to give the patent owner a fair opportunity to respond during the IPR proceedings and not be ambushed by the Petitioner later in the***

*proceedings*. Accordingly, for the new allegations mentioned above in Petitioner's Reply which are not found in the original Petition, the arguments must be excluded.

### **III. GROUND 1: GROTMOL DOES NOT ANTICIPATE CLAIMS 7, 8 AND 16**

#### **A. Claim 7**

Petitioner's claim that Patent Owner "mischaracterizes Grotmol" in arguing that Grotmol fails to disclose the claimed modifying is not correct. Reply, 1. Petitioner points again to Grotmol's disclosure that corrections produced by a trainer could be "combined with control instructions produced by the robot" as disclosing "modifying: the first one or more instruction sets." Reply, 2 (quoting Ex-1004, 34:49-55). But Grotmol only discloses that a trainer may correct or change the operation of a robot in a "combiner" situation *by providing additional or new instructions*, Ex-1004, 34:49-35:34, and not that *the instruction sets that are included with the training sets are themselves actually modified*. Ex-2007, ¶¶77-87. Further, as discussed in Patent Owner's Response, providing an additional instruction set or overriding an existing instruction set is not modifying the instruction set. Response (Paper No. 26), 13.

For the first time in its Reply, Petitioner points to the "override," "correct," and "undo" modes in Grotmol and argues that these modes disclose modification of existing instruction sets. Reply, 2, 4. According to its own rules, *the Board should*

*exclude this new argument, as Petitioner could have made it but did not make it in the Petition.*

In addition, Grotmol does not disclose that the actual instruction sets used in the training sets are modified in any of the cited modes. Regarding override mode, Grotmol states that the robot will try to remember the override command the teacher of the robot provided, but this says nothing about the actual instruction set in the original training set being modified. Rather, Grotmol discloses that in override mode “the robot may stop taking the initiative and may let the teacher control it.” Ex-1004, 23:13-16. This manual control has nothing to do with modifying the robot’s instruction sets for autonomous operation and shows that the instruction sets issued in override mode are new instruction sets created by the teacher, *and not that any original instruction sets in the training sets are modified.*

Petitioner’s statement that “[c]orrection inputs can operate ‘as a deviation from the predicted command determined by the robot,’” Reply, 4 (citing Ex-1004, 22:1-23:29), does not mention nor even imply that any instruction sets included in training sets are *modified*. And *Grotmol’s correct mode (and also the previously discussed override mode) is a training process* (i.e., Grotmol specifically discloses that in correct mode the robot “[l]earn[s] the resulting association,” Ex-1004, 22:40-43, based on the trainer’s direction) that is not relevant to the modification of instruction sets *in the claimed autonomous operation process* (claim 7 recites

“autonomously performing ... one or more operations defined by the modified the first one or more instruction sets”) ***after the instruction sets are learned and stored in the knowledgebase.***

Petitioner’s argument that combining can refer to “merging,” Reply, 4 n.2, ***is illogical as both “combining” and “merging” have nothing to do with the claimed “modifying” and two combined/merged elements are not themselves modified but instead are joined together or combined.*** Response, 13. Therefore, the definition of “modifying” simply does not include “combining” or “merging,” but even if one considers combining, Petitioner’s citation to the dictionary definition of “combine,” Ex-1014, 204, actually supports Patent Owner’s argument here, as the definition indicates that combining means “to become one,” ***not that the original elements in the combination themselves are changed or modified.***

Petitioner’s argument that “‘modifying’ encompasses operations including additions, deletions, or other alterations,” Reply, 3, is Petitioner’s own words unsupported in Grotmol. Patent Owner points out that instruction sets included in training sets are never modified in Grotmol in any way, including by additions, deletions, or other alterations of them. Grotmol discloses providing new instruction sets in certain modes, as discussed above, but Grotmol ***never*** discloses that any instruction sets in training sets are modified, including by additions, deletions, or other modifications. Response, 11-14.

Grotmol's "undo" mode cited by Petitioner for the claimed modifying, Reply, 4, also fails to disclose that instruction sets in training sets are modified. The "undo" operation provides that the robot "forgets" what it learned in a previously saved configuration. Ex-1004, 34:22-27. The undo operation can cause "removal of multiple learned associations," Ex-1004, 34:18-35:4, ***which shows that both the instruction set and the image included in the training set are completely deleted, which is not the claimed modification of the instruction set in the training set but rather a complete deletion of it.***

Petitioner's argument that "[b]y removing stored behaviors or learned associations (of images and instructions), the stored instruction sets in Grotmol's knowledgebase and memory are modified," Reply, 4, is a new impermissible argument that should be excluded and is illogical. Total removal of an association, including the instruction set and associated image, is not modification of that instruction set because ***the instructions themselves are not changed but simply deleted.*** Further, if a claimed instruction set is completely removed, as proposed by Petitioner in its alleged understanding of "modifying," ***the instruction set could not be anticipated or executed,*** as required by claim 7. By referring to them separately, the '344 patent makes clear that modifying an instruction set as opposed to completely deleting it are two different things. Ex-1004, 140:36-39; claim 7.

**B. Claim 8**

Petitioner's argument that Grotmol discloses modifying images (that Petitioner maps to circumstance representations) and then using those modified images in a matching process, as required by claim 8 with respect to circumstance representations, is wrong. Reply, 5-7. Nothing in Grotmol discloses that ***any image is modified and then used in the claimed matching procedure.*** Response, 18-21.

Petitioner points to Grotmol's disclosure of "scaled" image features, Reply, 5, but this does not mention anything about images themselves being scaled or modified. Ex-1004, 3:36-46. And Petitioner's claim that "normalization of the images occurs after the training is complete," Reply, 6, is not supported by any of the citations to Grotmol in the Reply. Reply, 5-6 (citing Ex-1004, 30:47-31:2 (input data, not images, may be normalized), 4:18-22 (transforming sensory input, not images), 30:54-31:2 (input data, not images, is scaled), 31:61-32:5 (modifying sensor input, not images), 3:42-46 (scaling pixels in an image from a sensor, not a correlated image), 4:58-63 (applying transformation to sensory input, not images); 31:3-8 (scaling input data, not images)). Claim 8 recites ***both (i) modifying a circumstance representation (that Petitioner maps to an image), and (ii) using the modified circumstance representation in the matching process,*** hence regardless of the modifying, Grotmol simply does not even mention much less disclose that any modified images are used in any matching.

Petitioner's argument that "Grotmol provides several examples of how the circumstance representations (images) are modified and used in a matching process," is wrong. Reply, 6. The process cited by Petitioner in Grotmol involving particles merely uses particles associated with images "where the robot maintains a plurality of particles indicating the likely parts of the path" and searching particles, not modifying any images and using the modified images in any matching. Ex-1004, 39:42-54. And the windowing, shifting, and trimming processes disclosed by Grotmol and cited by Petitioner, Reply, 6-7, does not say anything about modifying images and using them in a matching process, as required by claim 8. Response, 18-21.

**C. Claim 16**

Contrary to Petitioner's arguments, Reply, 7-12, Patent Owner's proposed construction for "connection" in claim 16 is well-supported by the intrinsic and extrinsic record, and Grotmol fails to disclose the claimed connections under this construction. Further, Petitioner's over-broad proposal for the alleged plain and ordinary meaning of "connection" as "an association or relationship," Reply, 10, contradicts the intrinsic record and *would effectively render the term meaningless since the connection in claim 16 is recited to narrow what is recited in independent claim 1.*

After the Board invited the parties to provide additional argument regarding the meaning of the claimed “connection” in claim 16, Institution Decision (Paper No. 20), 33, Patent Owner offered a well-supported construction of the term as “a relationship that includes a link.” Response, 6-10. Patent Owner’s proposed construction is reasonable, well-supported, and 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 v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). “Importantly,” skilled artisans are “deemed to read the claim term . . . in the context of the entire patent.” *Id.*, 1313. The specification “is always highly relevant to the claim construction analysis” and is usually “dispositive.” *Id.*, 1315. Patent Owner’s construction is consistent with the claim language and is well-supported by the intrinsic record including the specification and figures, particularly Figures 17 and 18A of the ’344 patent. Response, 6-10.

Petitioner’s contention that PO’s proposed construction improperly imports a requirement for a connection to include a link is wrong. Reply, 9. The portions of the specification and drawings cited in the Response provide important context and meaning for the term “connection,” and the various examples of connections shown in Figures 17 and 18A and the associated disclosure confirm that a connection is a relationship that includes a link. Response, 6-10. Petitioner’s argument that certain cited language that includes a permissive “may” is not relevant to construing the

term “connection” is wrong. Reply, 9. The portions of the ’344 patent cited by Petitioner are highly relevant, as they provide specific descriptions of connections and figures showing connections as relationships that include links. And Petitioner is wrong that the ’344 patent never refers to a connection including a link, as ***both Figures 17 and 18A show a connection including a link***, and the ’344 patent specifically provides that, in this particular use of connections, “machine learning, knowledge structuring or representation, decision making, pattern recognition, and/or other artificial intelligence functionalities may include a network of Nodes 852 (also referred to as neurons, etc.) and Connections 853 similar to that of a brain. Node 852 can store any data, object, data structure, and/or other item, or reference thereto.” Ex. 1001, 103:53-59. For example, a node may include at least a portion of a circumstance representation or at least a portion of an object representation while another node may include at least a portion of an instruction set, and the two nodes may be in a relationship that includes a connection or link. Response, 7-8.

Petitioner’s claim that the meaning of the term “link” is unclear is undermined by the fact that ***the ’344 patent specifically discloses a link in Figures 17 and 18A***, and that the patent discloses “a network of Nodes 852 (also referred to as neurons, etc.) and Connections 853.” Ex. 1001, 103:53-59. Further, Dr. Saber specifically pointed to ***Figure 17 when asked to define “link” during his deposition and provided a clear description of the meaning of the term.*** Ex-1012, 12:12-36:5. And

Petitioner's only argument regarding the dictionary definitions of "connection" cited by Patent Owner is that the definitions were "cherry-picked." Reply, 10. But these definitions support Patent Owner's proposed construction and are entirely consistent with the disclosures of the '344 patent, including the figures and portions of the patent cited by Patent Owner in its Response, Response, 6-10. Petitioner has failed to explain why these definitions that include the term "link" are irrelevant here or do not support Patent Owner's proposed construction.

By contrast, Petitioner's alleged plain and ordinary meaning for the term "connection" as an "association or relationship," finds no support in the intrinsic record and broadens the meaning of the term improperly. Reply, 10. Petitioner provides *no* explanation in its Reply regarding why the intrinsic record supports its proposed meaning. Reply, 10. The specification never uses the term "association" in relation to the term "connection," moreover. And the specification plainly shows in Figures 17 and 18A and the disclosure discussed in the Response that a connection is more than simply an association. Response, 6-10.

Petitioner's argument that Grotmol's association between an object representation (that Petitioner maps to an image in Grotmol) and an action is a connection, Reply, 11-12, is wrong. In Grotmol an image is only associated with the motor control command, not connected including a specific connection or link. Response, 22-23. Further, for claim 3, which provides the antecedent basis for "the

first one or more object representations” of claim 16, the Petition mapped an object shown within images 2000 and 2010 to the claimed “the first one or more object representations.” Petition, 24. For example, the Petitioner pointed to a ball 2008 or a tree 2002 as examples of object representations. *Id.* ***Grotmol does not disclose a relationship that includes a link between an object (such as a ball) and a motor command.*** Ex-2007, ¶¶98-100. This confirms that Grotmol fails to disclose the claimed connections under the proper construction of that term.

#### **IV. GROUND 2: GROTMOL DOES NOT RENDER OBVIOUS CLAIMS 10 AND 11**

##### **A. Claim 10**

Petitioner’s argument that Grotmol discloses multiple users as required by claim 10 is incorrect. Reply, 12. Petitioner has failed to point to a single disclosure of multiple users using a single device or multiple devices in Grotmol. Further, the disclosure cited by Petitioner and shown in Figure 10B provides that “*the [single] user*” trains multiple behaviors on the robot in Grotmol. Reply, 12 (citing Ex-1004, 25:10-26:48, Figure 10B). And while Grotmol discloses that its “BrainOS software platform may be configured to enable users to selectively remove a learned behavior” (Ex-1004, 34:18-21), this portion of Grotmol does not say anything about or suggest to a POSA that different learning processes involving different users

could generate the various correlations that enable the claimed mixed knowledgebase of claim 10.

Petitioner's contention that Dr. Saber conceded "that it would have been understood by a POSITA that user commands can be provided by multiple users such that a robot could be trained by one or more users," Reply, 13, is wrong and mischaracterizes Dr. Saber's testimony. The cited testimony merely indicates that multiple users *could* provide commands to multiple adaptive controllers, and not that a POSA would have understood that Grotmol discloses more than one user, as required by claim 10. Ex-1011, 166:12-18. Further, at his depositions Dr. Saber was able to identify numerous disclosures in Grotmol where only a single user is mentioned. Ex-1011, 185:21-186:5; Ex-1012, 78:15-83:16.

Petitioner next contends that "[s]ince Grotmol's learning is user dependent and Grotmol's robots can be trained/operated by multiple users, it would have been obvious to a POSITA to implement Grotmol such that multiple users would operate a single robot and train the robot differently according to the users' instructions." Reply, 14. This is Petitioner's own words unsupported in Grotmol. Since Grotmol discloses only a single user, this single user performs the "training of both simple and complex tasks."

**B. Claim 11**

Petitioner's impermissible new argument that Grotmol's multiple controllers comprise the mixed knowledgebase that includes a correlation learned in one learning process and a correlation learned in another learning process involving a third device, as required by claim 11, is wrong. Reply, 15-20. While Petitioner is correct that "Grotmol's robots . . . use a collection of controllers," nothing in Grotmol discloses that any of the separate controllers or any combination of them contain a single, mixed knowledgebase containing correlations of circumstance representations and instruction sets learned in different learning processes involving different devices. Reply, 16. Grotmol discloses one user operating one device in one learning process. Therefore, knowledge in all of the robot's controllers in Grotmol is learned only in a single learning process and only on a single robot. Grotmol never discloses using its adaptive controllers to learn multiple correlations in different learning processes involving different devices and storing those correlations in a *single, mixed knowledgebase*, as required by claim 11.

Petitioner points to column 33 lines 30-32 of Grotmol and contends that a POSITA would have understood Grotmol's disclosure at col. 33:30-32 to mean that a trained configuration containing behaviors learned on a third robot and loaded on a first robot would be implemented alongside the trained configurations for other controllers on the first robot—i.e., controllers that

Grotmol expressly discloses can be learned locally through learning processes on the first robot.

Reply, 16. Petitioner's arguments are conclusory, as the cited portion of Grotmol merely discloses that "[i]n some implementations, the trained configuration may be loaded to one or more other robots to provide learned behaviors." Ex-1004, 33:30–32. Grotmol's disclosure of loading one configuration from one robot into another robot *says nothing about a configuration being loaded alongside another configuration that was learned on the receiving robot in a different learning process to make up a single, mixed knowledgebase (as required by claim 11) that includes one correlation learned in one learning process involving one robot and another correlation learned in another learning processes involving another robot.* And simply because Grotmol's multiple controllers each including knowledge learned in a single learning process (note Grotmol only discloses a single learning process, not multiple) and on a single device may be "implemented alongside" each other does not mean (and Grotmol teaches the opposite) that those controllers use or are a part of a single, mixed knowledgebase containing correlations learned in different learning processes involving different devices that Grotmol mentions nothing about.

The Board should reject Petitioner's last minute effort to construct an argument regarding why Grotmol allegedly discloses the claimed additional

correlation learned in another learning process involving a third device and included in the knowledgebase including correlations learned in different learning processes involving different devices. The Board has already noted problems with Petitioner's argument regarding the claimed correlation in its decision involving another patent and "question[ed] whether Petitioner has sufficiently shown that Grotmol discloses more than loading a trained configuration from a first robot to a second robot." Ex-2010, 35. The Board also questioned whether Petitioner had sufficiently shown that "Grotmol discloses a fourth correlation learned in another learning process by a second robot that is included as part of the knowledgebase along with the first and second correlations learned by the first robot." Ex-2010, 35-36. Grotmol's disclosure of additional controllers does nothing to cure the deficiencies in Grotmol noted by the Board.

Petitioner's statement that Grotmol's configuration may be loaded from one robot to another robot "does not mean that the knowledgebase on a first robot that loads the trained configuration from a second robot would contain only the learned behaviors from the second robot," highlights the conclusory nature of Petitioner's argument. Reply, 15. *The inquiry here is not what the destination robot may or may not already contain in a hypothetical, but what Grotmol discloses the destination robot actually containing.* Grotmol's disclosure cited by Petitioner (Ex-1004, 33:30–32) lacks even a hint of any configuration that may already be in the

destination robot, which confirms that the loaded configuration is for the entire robot (i.e., all of its controllers) and that the loaded configuration is still learned on the single originating robot and in a single learning process (since Grotmol does not disclose multiple learning processes) even when loaded into another robot. Grotmol never mentions or suggests the hypothetical situation proposed by Petitioner, Reply, 18, where a configuration is loaded onto an adaptive controller on a robot that already contains pre-trained adaptive controllers. And Grotmol certainly does not disclose or suggest how such a scenario would be handled by the device on which the configuration was loaded, much less the single, mixed knowledgebase claimed in claim 11. Further, based on all indications in Grotmol, a POSA would understand that Grotmol's controller is physical hardware, and nothing in Grotmol discloses adding physical controllers from one robot to another. *In fact, Grotmol never provides even a hint that trained configurations or controllers (or anything for that matter) learned in multiple learning processes involving multiple robots are ever stored (i.e., mixed) in a single robot.*

Petitioner's claim that the adaptive controllers disclosed by Grotmol comprise a single, mixed knowledgebase is contradicted by Grotmol's disclosure. Reply, 16-19. Figure 10B, for example, shows two separate adaptive controllers receiving separate input and providing separate output. Further, Petitioner's claim that "the knowledgebase on the first robot would include correlated images and instruction

sets learned in learning processes on both the first and third robot,” Reply, 19, is conclusory and not supported by the portion of Grotmol cited by Petitioner. The cited portion of Grotmol (Ex-1004, 33:21-30) merely provides that a trained configuration may be stored but does not explain or even mention a single, mixed knowledgebase including correlations learned in different learning processes involving different devices, as required by claim 11.

Contrary to Petitioner’s assertion, Grotmol’s disclosure that the receiving robot can benefit from the learning of the transmitting robot does not say anything about the specific single mixed knowledgebase of claim 11. Reply, 10. Grotmol discloses that the controllers are separate and provides no disclosure regarding a mixed, single knowledgebase including correlations learned in different learning processes involving different devices. Further, the matching allegedly disclosed by Grotmol and impermissibly newly cited by Petitioner, Reply, 19 (citing Ex-1004, 33:21-35), has nothing to do with a single, mixed knowledgebase, as required by claim 11. Instead, it simply provides that the controller learning process may match the process configuration present during saving of the loaded configuration.

Next, Petitioner’s discussion of Hickman and Ground 2 is irrelevant, Reply, 19-20, because Hickman is not cited in Ground 2 and only in Ground 3. Also, Petitioner’s claim that Patent Owner’s arguments regarding Dr. Janet’s deposition testimony are misrepresentations is not correct. Reply, 19-20. Dr. Janet’s testimony

that Grotmol discloses all of the elements of claim 10 and 11, his failure to point out any missing claim elements in Grotmol for those claims (Ex-2008, 98:16-23; 100:17-22), and his failure to explain how or why it would have been obvious to fill those gaps using the knowledge of a POSA confirm that he and Petitioner have failed to perform a proper obviousness analysis with respect to those claims (Response, 60-61) and dooms Petitioner's arguments regarding Ground 2.

In summary, enabling a system to learn mixed autonomous operation knowledge in different learning processes involving different devices and integrate such knowledge into a single knowledgebase is an approach not disclosed or suggested in Grotmol due to the complexities of combining the mixed knowledge into a single knowledgebase. For example, this approach may involve combining the learned knowledge into a coherent knowledge structure, combining the learned knowledge from the different learning processes, combining the learned knowledge from the different devices, and/or other issues not found or suggested in Grotmol.

**V. GROUND 3: GROTMOL AND HICKMAN DO NOT RENDER OBVIOUS CLAIMS 6, 11 AND 12**

Petitioner's claim that "the organization of knowledgebases is not relevant to the combination of Grotmol and Hickman," is wrong and undermined by the fact that a key component of the inventions of claims 6, 11 and 12 is the single, mixed knowledgebase that includes mixed knowledge of correlations learned in different

learning processes involving different devices and different users. Reply, 21. Petitioner’s attempt to divorce Hickman’s **very general** “teaching of sharing knowledge between different robots through a cloud computing system” (that cannot be used in a proper combination and obviousness analysis due to generality) from **the specific** “organization of various knowledgebases in Hickman” (that does not disclose the claimed invention) fails because the manner in which correlations are learned, structured, and claimed in a single knowledgebase is a critical part of the claimed invention. *Id.*

Petitioner’s argument that “PO’s reliance on other features of Hickman to argue non-obviousness is without merit because ‘[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference’,” Reply, 21 (quoting *Allied Erecting v. Genesis Attachments*, 825 F.3d 1373, 1381 (Fed. Cir. 2016)), also misses the mark. This has nothing to do with bodily incorporation, but with the fact that Hickman discloses storing instruction sets and images separately in separate knowledgebases, which a POSA would have found to be incompatible with (and to teach away from) Grotmol’s disclosure of training sets or correlations with images and instruction sets correlated and stored together. Ex-2007, ¶¶104-105.

Petitioner next contends that “PO incorrectly describes Hickman,” Reply, 22, but Petitioner never disputes that Hickman discloses storing instruction sets and

images separately in separate knowledgebases (images in Unique Object Knowledge Base 307 and instructions in Task Knowledge Base 309, *see* Ex-1005, Fig. 3). Response, 35-36. Instead, ***Petitioner now offers an entirely new mapping of Hickman’s disclosure to the claimed invention that is untimely, incorrect and impermissible.*** For the first time in its Reply, Petitioner maps the tasks data disclosed by Hickman to the claimed instruction sets. Reply, 22-24. The rule that Petitioner must present all of its arguments up front in the Petition ***exists to give the patent owner a fair opportunity to respond during the IPR proceedings and not be ambushed the Petitioner later in the proceedings.*** Therefore, Petitioner cannot introduce new arguments such as this one.

Regarding Petitioner’s statement that “Hickman is somehow limited to ‘storing instruction sets and images separately in separate knowledgebases,” Reply, 23, what Patent Owner is arguing is that a POSA reading Hickman’s disclosure of images and instruction sets stored separately would not have been motivated to combine Grotmol and Hickman in the manner proposed by Petitioner, Ex-2007, ¶¶109-110, especially in view of Petitioner’s failure to provide how to modify/combine Grotmol and Hickman, and failure to provide evidence of a reasonable expectation of success. Further, simply because Hickman may contemplate “the addition of other fields to the unique object knowledge base 307,” Reply, 23-24, says nothing about Hickman’s disclosure of storing instruction sets

and images separately that teaches away from the claimed invention. A POSA reading Hickman's disclosure in light of Grotmol's disclosure of storing images and instruction sets together would not have combined the references to arrive at the claimed invention. Response, 38-41.

Petitioner's next contention that Patent Owner's argument that Hickman teaches away from the claimed circumstance representations and correlations is irrelevant, is also wrong. Reply, 24-26. Hickman discloses (i) *storing images and instructions separately in separate knowledgebases (see Ex-1005, Fig. 3) that is not a correlation* as well as (ii) *a single object information that is not a circumstance representation*. Hence, Hickman does not disclose or suggest (and further teaches away from) (i) any correlations and (ii) any circumstance representations. Since **both** circumstance representations and correlations are fundamental to the operation of the system in Grotmol, Hickman must disclose **both** the circumstance representations and correlations in order to be combinable with Grotmol at all. Ex-2007, ¶106. Petitioner has failed to rebut this argument in its Reply and appears to concede that Hickman's single object information is not a circumstance representation since it presents no argument on this point. Hence, Grotmol and Hickman are not combinable for at least this reason alone.

Petitioner next argues that Patent Owner's argument that the combination of Grotmol and Hickman would not have been obvious to a POSA because of the

sophisticated claimed approach to mixing knowledge in a single knowledgebase is “misplaced” Reply, 28 is contradictory. Claims 6, 11, and 12 technologically require a sophisticated approach where knowledge is structured, stored, and processed using circumstance representations correlated with instruction sets in a specific manner in a single, mixed knowledgebase and ultimately used in this single, mixed knowledgebase. Response, 25-27.

Petitioner’s contention that “neither PO nor its expert provide any description of what that ‘specific manner’ of ‘sophistication’” employed in the claimed inventions is not correct. Reply, 28. Claims 6, 11, and 12 themselves recite and Petitioner has specifically explained that learning mixed knowledge of autonomous device operation in different learning processes involving different devices into a single knowledgebase would not have been straightforward, unusually simple, or obvious to a POSA *due to the specific mentioned complexities of combining the mixed knowledge into a single knowledgebase*. Response, 37. And Dr. Saber supported this argument. Ex-2007, ¶¶109-112.

Finally, regardless of whether it would have been obvious to combine Grotmol and Hickman, the references fail to disclose numerous claim limitations, as discussed in Patent Owner’s Response. Response, 41-59. Petitioner has failed to respond to these arguments and appears to concede that the references fail to disclose the claimed limitations including the claimed second device (claim 6), single mixed

knowledgebase comprising a correlation including the claimed third circumstance representation detected by a third device and learned in another learning process involving the third device (claim 11), and single mixed knowledgebase comprising a correlation including the claimed third circumstance representation detected by a third device, fourth circumstance representation detected by a fourth device, and anticipating based on the third and fourth circumstance representations (claim 12).

## **VI. THE PETITION’S OBVIOUSNESS ANALYSIS IS FLAWED**

Petitioner’s contention that “the Petition sets forth articulated rationales for obviousness in Grounds 2 and 3,” Reply, 29, fails to respond to Patent Owner’s argument that Petitioner has failed to perform a proper obviousness analysis with respect to Grounds 2 and 3. Response, 59-62. Petitioner’s citation to certain pages in its Petition, Reply, 29 (citing Petition, 53-65), does nothing to cure the deficiencies in Petitioner’s obviousness analysis with respect to Grounds 2 and 3. Nothing on the cited pages explains which specific claim limitations are missing in the primary reference for Grounds 2 and 3. And nothing in the Reply, Reply, 28-29, identifies the missing limitations as well. By failing to identify any gaps in Grotmol’s disclosure with respect to the claimed features and then addressing how/why it would have been obvious to a POSA to implement those features, Petitioner and Dr. Janet have failed to provide a legally proper obviousness analysis. Response, 56-61.

Dated: July 11, 2024

Respectfully submitted,

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Counsel for Patent Owner

### **CERTIFICATION OF WORD COUNT**

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S SUR-REPLY** specified in 37 C.F.R. § 42.24 have 5,589 words, in compliance with the 5,600 word limit set forth in 37 C.F.R. § 42.24(c). This word count was prepared using Microsoft Word.

Respectfully submitted,

Dated: July 11, 2024

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**CERTIFICATION OF SERVICE**

The undersigned hereby certifies that a copy of this **PATENT OWNER'S SUR-REPLY** has been served on Petitioner via email on the following counsel of record for Petitioner:

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