

**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: IPR2023-01172  
U.S. Patent No. 11,055,583

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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           | District Court Docket (previously submitted)                                                          |
| 2005           | District Court Scheduling Order (previously submitted)                                                |
| 2006           | District Court Invalidity Contentions (previously submitted)                                          |
| 2007           | Declaration of Dr. Eli Saber (previously submitted)                                                   |
| 2008           | Deposition transcript of Dr. Jason Janet dated March 22, 2024 in IPR2023-01172 (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           | RESERVED                                                                                              |
| 2015           | Dr. Eli Saber CV (previously submitted)                                                               |

## I. INTRODUCTION

Petitioner's Reply (Paper No. 33) improperly introduces new arguments in a failed attempt to remedy deficiencies in the Petition (Paper No. 2). 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, introduces new arguments that should be excluded, has not established that the Grotmol prior art reference discloses all of the limitations of Claims 7, 9, 14-18, 23, 29 and 31, and has not rectified numerous other deficiencies in the Petition. As a result, the Board should confirm the patentability of these claims.

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

Petitioner improperly adds new arguments in its Reply and via a reply declaration from its expert, Dr. Janet (Ex-1010, "Janet Reply Declaration"), to support its deficient prior art arguments. ***"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 for the first time in its Reply that Grotmol's alleged disclosure of "separate training of different tasks/behaviors on different controllers confirms that Grotmol discloses multiple 'learning process[es].'" Reply, 6 (addressing the claimed second learning process). Petitioner elaborates on this new argument for several pages. Reply, 6-8. In contrast, Petitioner never mentioned this collection of controllers or explained how it allegedly discloses the claimed multiple learning processes in its Petition. 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 multiple learning processes.* Petition, 30-31.

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.” PTAB Consolidated Trial Practice Guide, 73 (Nov. 2019). The Petition’s failure to fully address this limitation 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 proceeding and not be later ambushed by new arguments.* Accordingly, the new arguments presented for the first time in Petitioner’s Reply (Reply, 6-8) should be excluded.

### **III. GROUND 1: GROTMOL DOES NOT ANTICIPATE CLAIMS 7, 9, 14-18, 23, 29 and 31**

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

Petitioner argues that “Grotmol’s image features include detected objects such that, when Grotmol compares the features of a newly acquired image to stored image features to determine at least a partial match, the operation includes a comparison of detected objects to determine instruction sets for operating the robot.” Reply, 2. This argument is incorrect, conclusory, and unsupported by Grotmol’s disclosure. First, image features and their comparison in Grotmol are used to detect objects, *but once the objects are detected, Grotmol mentions nothing about matching of those*

*detected objects*. Second, image features are inputs into an object detection and detected objects are outputs of the object detection, hence they are logically different. Third, image features are used to detect objects, but are not the detected objects themselves, and comparing image features is logically different than the recited matching of the resulting detected objects. Patent Owner Response (Paper No. 28, “Response”), 12-14. The detected objects recited in claim 7 are distinct from image features used to detect them, and an attempt to equate them is nonsensical. Response, 12-14. Thus, Grotmol fails to disclose *detecting objects* and then *matching the detected objects*.

Petitioner admits that the feature extractors disclosed by Grotmol are used for comparing *features*, not objects. Reply, 3. Petitioner then argues that Grotmol’s “features” include “one or more integer or floating point values characterizing the input, e.g., the presence or absence of an edge, corner, shape, texture, color, object.” Reply, 3 (quoting Ex-1005, 28:19-24). But this passage only discusses *values* that indicate *the presence or absence of an object*, and not detecting the objects themselves, much less *comparing those detected objects to determine whether there is a match between the detected objects*. Ex-2007 (Dr. Saber Declaration), ¶¶76-77. Furthermore, an image feature is a portion of an image (i.e., each image feature is a collection of pixels of the image), *not a detected object*, and comparing image features is different from comparing objects detected in an image.

Petitioner argues that Grotmol discloses that features of objects can include properties, positions, and changes to objects. Reply, 3-4. Petitioner then argues that “Grotmol’s feature set thus plainly includes detected objects (e.g., values characterizing the presence or absence of an object at particular locations in the image, and/or values characterizing properties, position, and changes in objects across consecutive frames).” Reply, 4. But Grotmol’s disclosure of “values” characterizing the presence or absence of an object, or properties and positions of objects or changes to an object, *does not even imply, let alone disclose matching of any detected objects.*

Petitioner argues that Patent Owner’s expert, Dr. Saber, conceded that Grotmol discloses object detection when performing feature extraction. Reply, 4. This argument is incorrect because Dr. Saber made clear at his deposition that *“an object is not really a feature,”* Ex-1011, 28:4-5, and stated that Grotmol’s “very general statement” regarding features “could have been more accurate.” *Id.*, 29:6-7. And Petitioner’s argument that “a POSITA would still understand that the identification of these pixels would include object detection since the object must be detected to isolate its pixels in the image,” Reply, 4, only discusses object detection and still says nothing about matching of any detected objects. Petitioner’s only arguments are about object detection and not about what is actually claimed in claim

7: *matching of detected objects* that Petitioner does not address at all and Grotmol says nothing about.

**B. Claim 9**

Petitioner's argument as to claim 9 is new, and improper, as discussed above in Section II. Here Petitioner incorrectly argues that Grotmol's "multiple controllers" disclose the claimed "at least a portion of the second one or more digital pictures or at least a portion of the second one or more instruction sets for operating the first device is learned in a second learning process that includes operating the first device at least partially by the first user," as recited by claim 9, Reply, 5-6. However, nothing in Grotmol discloses that any of the separate controllers, or any combination of separate controllers, contain a single, mixed knowledgebase containing correlations of digital pictures and instruction sets learned in different learning processes, as required by claim 9. Grotmol discloses *one* user operating *one* device in *one* learning process. Therefore, any knowledge gained by robot controllers in Grotmol is learned in a *single* learning process. Grotmol never discloses (i) using adaptive controllers to learn multiple correlations *in different learning processes* or (ii) storing any such correlations in a *single, mixed knowledgebase*, as required by claim 9.

Petitioner then presents another flawed argument when it suggests that "[t]he separate training of different tasks/behaviors on different controllers confirms that

Grotmol discloses” multiple learning processes, Reply, 6. Petitioner’s arguments are conclusory, and the cited portions of Grotmol merely disclose that a *single* user can train the task of playing fetch during a *single* learning process. Ex-1005, 24:17-26:39. Grotmol’s disclosure *says nothing about a single, mixed knowledgebase that includes one correlation learned in one learning process and another correlation learned in another learning process.*

Petitioner’s argument that Grotmol’s “hierarchical learning” framework discloses multiple learning processes is conclusory and wrong. Reply, 5-6. The portions of Grotmol cited by Petitioner only disclose that Grotmol uses high-level and low-level controllers to learn complex behaviors, which does not say anything about multiple learning processes. Ex-1005, 10:35-44; 24:17-27:17; Figure 10D. Petitioner’s argument that a “first controller is trained in a first learning process” to control a robot to approach a target “while a second controller is trained in a second learning process to” control a robot to turn and grasp the target is conclusory and unsupported by Grotmol’s disclosure. Reply, 7. Grotmol discloses that both of the behaviors cited by Petitioner are a part of a *single learning process involving a single user*, whereby a robot learns *a single task* involving fetching. Ex-1005, 25:30-26:34.

Petitioner next incorrectly argues that Grotmol’s discussion of training multiple complex behaviors provides “evidence of Grotmol’s multiple learning

processes,” Reply, 4, but *Grotmol explains that the user trains the device in a single learning process to learn a single task involving fetching*. Ex-1005, 25:30-26:34. Further, Grotmol’s disclosure that a user may individually “reset a module to naive state, revert a module to a particular point in history, delete a module, save/load locally, upload, download, and/or other operations,” *id.*, 25:54-59, only confirms that a single user may train the controllers in Grotmol during a *single* learning process to perform a *single* task and says nothing about different learning processes, much less involving different users. Here Petitioner is trying to improperly conflate multiple behaviors in a single learning process into multiple actual learning processes.

Further, the Board should reject Petitioner’s new effort to construct an argument regarding the claimed second learning process. The Board has already “question[ed] whether Petitioner has sufficiently shown that Grotmol discloses more than loading a trained configuration from a first robot to a second robot” in another IPR proceeding involving a similar patent. Ex-2010, 35. The Board also questioned whether Petitioner had sufficiently shown that “Grotmol discloses a fourth correlation learned in another learning process . . . that is included as part of the knowledgebase.” *Id.*, 35-36. Grotmol’s disclosure of additional controllers does nothing to cure the deficiencies noted by the Board in that other proceeding relevant here.

Dr. Saber's testimony regarding learning processes cited by Petitioner does not support the position that Grotmol discloses multiple learning processes. Reply, 7-8. Dr. Saber testified that a first learning process and a second learning process can be performed by the same user on one device, Ex-1011, 38:18-39:2, **not** that Grotmol discloses the claimed first and second learning processes. Further, Dr. Saber testified that a "temporal separation" would be one factor in determining different learning processes and made clear that other factors also determine when different learning processes are occurring. Ex-1011, 50:11-17, 54:22-55:20. Grotmol discloses multiple controllers used in one learning process and does not disclose the claimed knowledgebase including mixed knowledge of correlations learned in different learning processes.

Petitioner's statement that "PO's assertion that 'Grotmol discloses only a single learning process' is at complete odds with Grotmol's modular, hierarchical learning scheme," highlights the conclusory nature of Petitioner's argument. Reply, 7. Grotmol discloses that the controllers are separate or modular, as Petitioner concedes, *id.*, but Grotmol provides no disclosure of a mixed, single knowledgebase including correlations learned in different learning processes.

### **C. Claim 14**

Petitioner argues that Grotmol's disclosure of compensating for position and orientation mismatch is an example of modifying instruction sets. Reply, 9.

However, compensating for position and orientation mismatch is implemented by issuing new commands, which does not disclose modifying instruction sets, as required by claim 14. Ex-2007, ¶¶83-85. Grotmol does not modify the new commands, and *issuing new unmodified commands is fundamentally different than modifying existing instruction sets*. Therefore, Petitioner has not established that Grotmol discloses or suggests that the instruction sets are modified, much less that the modified instruction sets are applied to a second device that then performs the operations according to the modified instruction sets as required by claim 14. *Id.*

Petitioner points to Grotmol's disclosure of combining motor commands with the output of a PID controller to stabilize the robot as disclosure of a modified instruction set. Reply, 10. But this combination of motor commands in Grotmol does not relate to modifying instruction sets. Figure 4A, cited by Petitioner (Reply, 10), only discloses that "corrector 412, predictor 422 and the combiner 414 may cooperate to produce a control signal 420." Ex-1005, 15:26-28. Petitioner's attempt to equate control signal 420 with a modified instruction set is not supported by Grotmol's disclosure. And the testimony of Dr. Saber cited by Petitioner only states that the output of the combiner in Grotmol is modified, not that any instruction set in a training set is modified in Grotmol. Ex-1011, 60:18-61:9. Petitioner's argument *is illogical because, logically, two combined elements are not themselves modified but instead are joined together or combined*. In this case, the motor commands, or

instruction sets, are never themselves modified but instead are only combined with the output of a PID controller. Combining two distinct elements does not modify either of the elements, but instead joins together or combines the elements. Therefore, Petitioner has failed to establish that the instruction sets in Grotmol's training sets are actually modified or changed.

Petitioner next contends that "Grotmol also discloses applying a modified version (or a copy of a modified version) of instruction sets for operating a first device to a second device to cause the second device to perform operations defined by the modified instructions." Reply, 11. But given that Grotmol does not disclose that the instruction sets are modified at all, Grotmol cannot and does not disclose that a modified instruction set is applied to a second device, let alone that the second device performs an operation defined by the modified instruction set, as required by claim 14.

Petitioner also contends that Grotmol discloses that "[w]hen a trained configuration learned by operating a first robot is loaded on and run by a second robot, the second robot modifies the motor commands (instruction sets) from the first robot by combining them with the output of the second robot's PID controller." Reply, 11. This argument is conclusory and not supported in Grotmol. First, Petitioner's contention describes motor commands first loaded into a second robot and then combined, whereas claim 14 recites instruction sets first modified and then

applied to the second device, which is clearly different. Second, as discussed above, *Grotmol never discloses modifying any instruction set since combining is different than modifying*. Thus, nothing in Grotmol discloses or suggests (i) that a modified instruction set is applied to a second device, and (ii) that an operation defined by the modified instruction set would be performed on the second device, as required by claim 14. Ex-2007, ¶85. Additionally, Petitioner never argues nor even addresses “wherein the new one or more digital pictures depict at least a portion of the second device's surrounding” limitation of claim 14, which by itself dooms Petitioner’s argument for claim 14.

#### **D. Claim 15**

Petitioner contends that Grotmol discloses the claimed modifying “for at least the reasons describe above in claim 14.” Reply, 12, 14. But as discussed above with respect to claim 14, Grotmol does not disclose that the instruction sets are actually modified or changed, and Dr. Saber’s deposition testimony cited by Petitioner does not support the claim that Grotmol discloses modifying motor commands. Reply, 12. Petitioner also argues that “Grotmol is clear that ‘combining’ involves modifying the stored motor command or instruction set,” *id*. But Petitioner’s argument is its own word unsupported by Grotmol, is conclusory, and is wrong since combining is different than modifying as discussed in claim 14. And the portions of Grotmol cited by Petitioner only disclose correcting device behavior by issuing new

or combined (not modified) commands. *Id.* (citing Ex-1005, 42:64-65 (discussing adjusting a steering signal and not modifying any instruction sets), 35:55-60 (discussing modifying the physical state of the robot including motor torque and/or robot platform acceleration and not modifying any instruction sets), 16:25-26 (discussing correcting a trajectory and not modifying any instruction sets), 15:29-62 (discussing a control signal output from a combiner), 42:46-43:11 (discussing controlling the trajectory of a robot)).

Petitioner next argues that “[n]either the plain language of claim 15 nor the ’583 specification require the instruction sets to be modified before a determination based on at least a partial match between the new and stored digital pictures.” Reply, 13. Petitioner’s argument is misleading since claim 15 specifically recites “modifying: the first one or more instruction sets...” and “determining *the modified* the first one or more instruction sets.” Thus, *the instruction set must be modified before the determining of the modified instruction set*, which Grotmol fails to disclose. The same is the true for the specifically recited “causing the first device or the second device to perform one or more operations defined by *the modified* the first one or more instruction sets,” which Grotmol fails to disclose. As discussed in Patent Owner’s Response, Grotmol does not disclose that any actual instruction set, command, user input, operation, or anything related to an instruction set recited in

claim 15 is *modified, then determined as modified, and then performed as modified*. Response, 18-23.

Petitioner contends for the first time in its Reply that “Grotmol’s ‘combining’ action provides the claimed ‘modifying’ step that produces, e.g., a combined/modified control command 420, and Grotmol’s subsequent processing and decoding of the combined/modified control command prior to execution of the combined/modified control command provide the claimed step of ‘determining’ the modified first one or more instruction sets.” Reply, 14. This argument is wrong, is a new argument Petitioner did not present in the Petition, and should be refused consideration. *See Allsteel Inc.*, IPR2015-01691, \*2. Further, Grotmol’s disclosure of “combining” is not the claimed “modifying” for the reasons discussed above and in the Response. Response, 18-23. And Grotmol’s disclosure of processing control signal 420 cited by Petitioner, Reply, 14-15, says nothing about the claimed “determining the modified the first one or more instruction sets for operating the first device” as required by claim 15. None of Grotmol’s processing, adapting, scaling, or translating motor control signal 420 actually *determine* a modified instruction set. In sum, Grotmol does not even mention modifying instruction sets, then determining the instruction sets as modified, and then causing a device to perform the instruction sets as modified, recited in claim 15.

**E. Claim 16**

Petitioner's argument that Grotmol discloses modifying images stored in a training buffer and then using those modified images in a matching process is unsupported by Grotmol's disclosure. Reply, 15. The portion of Grotmol cited by Petitioner only discloses that raw and pre-processed images may be stored in a buffer. *Id.* (citing Ex-1005, 39:12-22). ***Nothing in Grotmol discloses that any image is modified and then used in the claimed matching procedure.*** Response, 23-25.

Petitioner's statement that "Grotmol's matching process involves calculating a similarity measure between a new image and an image stored in the training buffer (e.g., a pre-processed / modified image) and then determining whether that similarity measure breaches a threshold," Reply, 16, is Petitioner's own words, is conclusory, and has no support in Grotmol. Nothing in the cited portions of Grotmol's discussion of the similarity measure discloses using a modified image in the matching process. *Id.* (citing Ex-1005, 4:30-38). ***In fact, Grotmol does not even mention it.*** And the windowing, shifting, and trimming processes disclosed by Grotmol and cited by Petitioner, Reply, 17, do not say anything about modifying images and then using them in a matching process, as required by claim 16.

Finally, regardless of whether claim 16 requires that a digital picture is modified, Reply, 17-18, Grotmol fails to disclose using a modified image in

matching. Contrary to Petitioner's assertion, Grotmol simply does not say anything about "using the scaled/normalized/equalized sensory input in any matching process," Reply, 18, and the portions of Grotmol cited by Petitioner merely discuss transforming sensory input or using a similarity measure, which as discussed above does not involve using modified images in the matching process.

**F. Claim 17**

Petitioner's arguments for claim 17 mirror its arguments for claim 16 and fail for similar reasons. Petitioner points to Grotmol's disclosure of preprocessing images. Reply, 18 (citing Ex-1005, 39:13-22 and 3:35-38). But this disclosure only provides that an instance of an image may be scaled or transformed, and not that the scaled or transformed image *is learned and then used in matching*. Ex-2007, ¶¶99-102. Petitioner's statement that "the pre-processed (modified) digital pictures are stored in the training buffer in association with" motor commands, Reply, 18, is Petitioner's own words unsupported by Grotmol's disclosure. The cited portions of Grotmol, Reply, 18-19, only disclose that images are stored in a buffer and that associations may be learned, and not that modified images *are learned and then used in a matching process*.

Petitioner's argument that "Grotmol likewise discloses use of pre-processed (modified) digital pictures in a matching process to determine motor commands," is likewise conclusory and unsupported by Grotmol's disclosure. Reply, 19. Grotmol

does not disclose using modified images in the matching process, and the portions of Grotmol cited by Petitioner only describe using stored images for matching, and not that any modified images are used in the matching process. Reply, 19. For example, Petitioner’s statement that “[s]ince the ‘stored image’ can be a pre-processed (modified) image . . . the ‘best matching’ image can be a pre-processed (modified) image,” is conclusory and unsupported. Reply, 19 (citing Ex-1005, 39:13-22). The portion of Grotmol cited by Petitioner to support this statement only provides that an instance of an image may be scaled or transformed, and ***not that the scaled or transformed image is learned and then used in matching.***

#### **G. Claim 18**

Petitioner first points to Grotmol’s disclosure of an override mode and argues that “[w]hen the teacher issues command(s) in override mode, Grotmol’s system modifies previously learned command(s) by replacing them with the teacher’s new command(s).” Reply, 21. Petitioner’s argument explicitly says “replacing them with the teacher’s new command(s),” which is fundamentally different than modifying an existing instruction set. Thus, ***Grotmol is replacing an original, whole, unmodified command with another new (i.e., overridden), whole, unmodified command.*** Replacing an element with another new element is fundamentally different than modifying the original element. Ex-2007, ¶¶106-107.

Therefore, Petitioner has failed to show that Grotmol's override mode discloses the claimed modifying of an instruction set as required in claim 18.

Petitioner's argument that "[r]eplacing one motor command in an instruction set with another motor command in the instruction set necessarily modifies the instruction set, much like the roster of a sports team is modified when players are traded to other teams," Reply, 21, is Petitioner's own words and is wrong. First, Grotmol does not disclose that motor commands in instruction sets are replaced in override mode, *but that a whole, unmodified command is fully replaced by another command*, Ex-1005, 23:13-22. Further, under Petitioner's example, while trading players from one team to another may modify the original team's roster, the players themselves, which are analogous here to the claimed instruction sets, are not modified but remain unchanged. Replacing an element with another element is fundamentally different than modifying the original element. Ex-2007, ¶¶106-107.

Petitioner's argument that Grotmol's override mode discloses the learning in claim 18 is illogical. Reply, 22. Since Grotmol fails to disclose modifying an instruction set in the disclosed override mode, as discussed above, it must also fail to disclose learning the modified instruction set, and especially learning the modified instruction set correlated with a digital picture, as required by claim 18. Ex-2007, ¶¶107-110. Petitioner's argument that a teacher's input is learned in Grotmol is irrelevant, as *the teacher's input provides a whole new, unmodified instruction set*

*or command and does not modify any command or instruction set*, as discussed above. Reply, 22. Grotmol does not even contemplate, much less disclose *learning any modified instruction set* and Petitioner does not point to anything in Grotmol that discloses this element of claim 18.

Petitioner's final argument regarding claim 18, that Grotmol's correct mode discloses the features of claim 18, is also wrong. Reply, 22. Petitioner's statement that Grotmol's "correct mode involves determining a modified instruction based on both the robot's known instruction and the teacher's new instruction," *id.*, is wholly unsupported attorney argument. Grotmol's correct mode discloses "sum[ming] the teacher's command with what the robot already knows to get a final motor command," Ex-1005, 23:23-29, *not modifying any commands themselves*. Adding two elements is different than modifying any one of the elements. Not only that Grotmol's correct mode (and Grotmol in general) fails to disclose the claimed modifying of instruction set, it further fails to disclose that *any instruction sets are learned as modified, determined as modified, and caused to be performed as modified*, as required by claim 18.

#### **H. Claim 23**

Contrary to Petitioner's arguments, Reply, 23-25, Patent Owner's proposed construction for "connection" in claim 23 is well-supported by the intrinsic and extrinsic record, and Grotmol fails to disclose the claimed connections under this

construction. Patent Owner's construction of the term "connection" as "a relationship that includes a link" is reasonable 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). Further, Petitioner's over-broad proposal for the alleged plain and ordinary meaning of "connection" as "an association or relationship," Reply, 23, contradicts the intrinsic record and *would effectively render the term meaningless since the "connection" in claim 23 is recited to narrow the word "correlated" recited in independent claim 1.*

Petitioner's contention that Figures 16 and 17A "do not support PO's construction as they are merely example embodiments, the specification never even uses the term 'link' in connection with these examples, and PO ignores the breadth of 'connections' disclosed elsewhere in the specification," is wrong. Reply, 23. 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 16 and 17A, and the associated disclosure confirm that a connection is a relationship that includes a link. Response, 7-11. Petitioner is wrong that the '583 patent never refers to a connection including a link, as *both Figures 16 and 17A show a connection including a link.*

Petitioner's argument that the meaning of the term "link" is unclear is undermined by the fact that *the '583 patent specifically discloses a link in Figures 16 and 17A*, and that the patent discloses "a network of Nodes 852 and Connections 853" where "Node 852 can store any data, object, data structure, and/or other item, or reference thereto," Ex. 1001, 96:2-8, such as at least a portion of a digital picture or at least a portion of an instruction set. Petitioner also does not address the dictionary definitions of "connection" cited by PO. Response, 10-11. These definitions support Patent Owner's proposed construction and are entirely consistent with the disclosure of the '583 patent, including the figures and portions of the patent cited by Patent Owner in its Response.

In 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 improperly broadens the meaning of the term. Reply, 23. Petitioner provides *no explanation* in its Reply regarding why the intrinsic record supports its proposed meaning. *Id.* The specification never uses the term "association" in relation to the term "connection." Moreover, the specification plainly shows in Figures 16 and 17A, and the related disclosure discussed in the Response, that a connection is more than simply an association. Response, 7-11. *In fact, "connection" is recited in claim 23 to narrow the word "correlated" in independent claim 1.*

Petitioner argues that Grotmol's association between an image and an action is a connection. Reply, 24. This argument is incorrect because Grotmol discloses that an image is only related to the motor control command, not that the image is connected including a specific connection or link. Response, 34. This confirms that Grotmol fails to disclose the claimed connections under the proper construction of that term.

Petitioner has manufactured a drawing in its Reply in a desperate and failed attempt to suggest that Grotmol discloses a connection. Response, 25. Petitioner's drawing shows a line between an image and an instruction set, but there is no support for this drawing in Grotmol. Further, Petitioner's statement that "Grotmol organizes the images and motor commands in the training buffer into training sets where each training set specifically links" a digital picture and an instruction set is an entirely unsupported attorney argument. Reply, 24. And contrary to Petitioner's suggestions, Grotmol's Figures 14 and 15 merely disclose that images and instruction sets may be related. Reply, 24-25.

## **I. Claim 29**

Petitioner's contention that "PO mischaracterizes claim 29 in arguing that it requires a causal chain of 'detect[ing] objects in [the] images in order to generate representations of the detected objects in order to then generate a new digital picture,'" Reply, 25, is Petitioner's mischaracterization. Claim 29 specifically

recites the causal chain in each claim section: (i) “detecting one or more objects,” (ii) “generating one or more representations of *the [detected]* one or more objects” (note the “the one or more objects” referring to the detected one or more objects), and (iii) “generating the new one or more digital pictures that include *the [generated]* one or more representations of *the [detected]* one or more objects” (note the two “the” in the claim are referring to the generated one or more representations and the detected one or more objects, respectively). The language of claim 29 including its specifically recited causal chain provides a method for generating a new digital picture that is different than simply capturing images using a camera. Ex-2007, ¶¶115-118. Grotmol does not even contemplate, let alone disclose the specific, claimed process of *detecting objects, generating representations of the detected objects, and then generating a new picture based on the representations of the detected objects. Id.*

Petitioner argues that Grotmol discloses “that a new digital picture [is] generated using a previous detection of an object,” Reply, 26, but Grotmol does not disclose any such picture generation and only discloses capturing images by a camera. Petitioner first points to Grotmol’s generic disclosure of object detection/recognition, Reply, 26-27, and that images may generally comprise depicted objects, *id.*, but images are used in Grotmol to detect objects from them, not to generate a new image from the detected objects as required by claim 29.

Objects in Grotmol are depicted in and are a part of the image captured by a camera, but are never detected to then be used to generate an image. Ex-2007, ¶¶115-116. Grotmol says nothing about generating a *new digital picture using generated representations of previously detected objects* recited in the first step of claim 29.

Petitioner argues that generating digital picture 2010 in Grotmol discloses the claimed invention of claim 29, but this argument is conclusory, unsupported by Grotmol, and was not made in the Petition (thus it should not be considered). Reply, 26-27. Petitioner’s argument that “new digital picture 2010 includes representations of the earlier detected objects, and generating the new digital picture 2010 includes generating representations (e.g., depictions) of the objects in the digital picture 2010,” Reply, 27, is a misleading statement entirely unsupported by Grotmol. The portions of Grotmol cited by Petitioner *never state or even imply that object representations generated based on objects detected in previous image 2000 are included or used to generate picture 2010. Id.*

#### **J. Claim 31**

Petitioner argues that a reloaded configuration in Grotmol “includes a first one or more instruction sets at time t1 that represents the prior configuration including the second one or more instruction sets of the robot at time t0.” Reply, 27. This statement is conclusory, is unsupported in Grotmol, and is illogical. *A “reloaded configuration” is the same configuration that is just reloaded, which is*

*vastly different from generating a first instruction set as a representation of a second instruction set.* Ex-2007, ¶¶119-120. In fact, Petitioner’s “reloaded configuration” does not suggest in any way that one instruction set represents another instruction set.

Petitioner’s argument that a POSA would have understood that a reloaded configuration represents an instruction set is also illogical because a POSA would have understood that a “reloaded configuration” is the same configuration that is just reloaded, and has nothing to do with generating a first instruction as a representation of a second instruction set as discussed above. Further, even if Petitioner’s broad and unsupported reading of “representation” is considered, *Grotmol never even implies any instruction set representing another instruction set to lead a POSA to even contemplate an instruction set being a representation of another instruction set.* Thus, Petitioner fails to show generating a first instruction set as a representation of a second instruction set required by claim 31.

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Respectfully submitted,

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### **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 5,570 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: August 26, 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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