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

_____

Case: IPR2023-01173
U.S. Patent No. 11,055,583

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PATENT OWNER'S SUR-REPLY

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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 IPR2023-01173 (previously submitted)
2009	RESERVED
2010	Institution Decision in IPR2023-01054 (previously submitted)
2011	U.S. Patent No. 10,452,974 (previously submitted)
2012	RESERVED
2013	RESERVED
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 cited prior art references disclose or suggest all of the limitations of Claims 10, 11, 25, 27, and 30, 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 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 alleged disclosure of "separate training of different tasks/behaviors on different controllers confirms that Grotmol discloses multiple 'learning process[es].'" Reply, 3 (addressing the claimed second learning process). Petitioner elaborates on this new argument for several pages. Reply, 1-5. 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 (Paper No. 2), 23-25.

Petitioner also makes new arguments in its Reply by pointing to new portions of Hickman's knowledgebase and arguing for the first time that certain information including tasks data corresponds to the claimed instruction sets with respect to Claims 25 and 27. Reply, 18-20. ***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." PTAB Consolidated Trial Practice Guide, 73 (Nov. 2019). The Petition's failure to fully address this limitation should not be rewarded by the Board. Accordingly, the new arguments presented for the first time in Petitioner's Reply (Reply, 1-5, 18-20) should be excluded.

III. GROUND 1: GROTMOL IN VIEW OF THE KNOWLEDGE OF A POSA DOES NOT RENDER CLAIMS 10 AND 11 OBVIOUS

1. Claim 10

Petitioner's argument that Grotmol's multiple controllers read on 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 a second user," as required by claim 10, Reply, 1-3, is new, is improper, and should

be refused consideration as discussed above in Section II. Petitioner's argument is also wrong since 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 involving different users, as required by claim 10. Grotmol discloses ***one*** user operating ***one*** device in ***one*** learning process. Grotmol never discloses (i) using adaptive controllers to learn multiple correlations of digital pictures and instruction sets ***in different learning processes much less involving different users*** and (ii) storing any such correlations in a ***single, mixed knowledgebase***.

Petitioner's argument that Grotmol's "hierarchical learning" framework discloses multiple learning processes is conclusory and wrong. Reply, 1-2. The portions of Grotmol cited by Petitioner only disclose that Grotmol uses high-level and low-level controllers to learn certain 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 "[t]he separate training of different tasks/behaviors on different controllers confirms that Grotmol discloses" multiple learning processes, Reply, 3, is also conclusory and wrong. 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.

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 Petitioner's own words, is conclusory, and is unsupported by Grotmol's disclosure. Reply, 3-4. 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 single 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.

Further, the Board should reject Petitioner's new effort to construct an argument regarding the claimed second learning process involving a second user. 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. Grotmol's disclosure of additional controllers does nothing to cure the deficiencies noted by the Board.

Dr. Saber's testimony regarding learning processes cited by Petitioner does not support the position that Grotmol discloses multiple learning processes. Reply, 4-5. Dr. Saber only 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. Further, Dr. Saber testified that a "temporal separation" would only be one factor in determining different learning processes. Ex-1011, 50:11-17, 54:22-55:20.

Petitioner's argument that "Grotmol's knowledgebase stored in memory of the robot (e.g., memory 814) likewise provides mixed knowledge," Reply, 5 n.1, is Petitioner's own words and is false. Grotmol provides no disclosure of a mixed, single knowledgebase, Ex-1005, Figure 10B, and a ***general memory or storage falls far short of even implying the specific claimed knowledgebase with all its recited elements***.

Petitioner's next argument that Grotmol discloses multiple users as required by claim 10 is incorrect. Reply, 6-9. Petitioner has failed to point to a single disclosure in Grotmol of multiple users using any device, much less in multiple learning processes. Petitioner argues that "Grotmol places no restrictions on the

number of users who can train the multiple behaviors for the robot." Reply, 6. However, the inquiry here is not whether Grotmol limits the number of users, but the one user Grotmol actually discloses.

Petitioner's argument that "[t]here is no reason that different users could not lead different learning processes in Grotmol, nor does PO provide any such reasons," Reply, 6, is conclusory and unsupported by Grotmol's disclosure. The inquiry here is not whether there is no reason that different users could not lead different learning processes in Grotmol, but the one user and learning process Grotmol actually discloses. Petitioner itself points to Grotmol's disclosure of a single learning process involving ***a single user***, whereby a robot learns a ***single task*** involving fetching. Reply, 6 (citing Ex-1005, 25:30-26:34). Petitioner even confirms that this process is "user-led" and relies on a single user. Reply, 6.

Petitioner's argument that it would have been "obvious for multiple users to be involved in training Grotmol's robot both as a matter of common sense, practical collaborative behavior, and as was conventionally done in the art," is Petitioner's own words and finds no support in Grotmol's disclosure. Reply, 6. ***Petitioner fails to cite to a single sentence in Grotmol supporting this conclusory argument.*** Reply, 6. Further, Petitioner's citation to other references (that are new, and should be refused consideration) that disclose multiple users, Reply, 7, does not in any way

support the argument that a POSA reading Grotmol's disclosure would have arrived at the claimed multiple users and multiple learning processes.

Petitioner's argument that "switching users would be as simple as handing off the gamepad or other remote device used for controlling the robot from one user to another," Reply, 6, is also conclusory and finds no support in Grotmol. The portion of Grotmol cited by Petitioner to support this argument only discloses that ***a single*** user may control or train the robot using a remote device. Ex-1005, 33:18-20.

Petitioner next argues that "a POSITA would have sought to involve multiple users in training Grotmol's robot at least to benefit from the varying skills and knowledge of the different users in training the robot to perform different tasks/behaviors." Reply 7. But this is ***an unsupported assertion with no obviousness analysis provided***. Also, there is no disclosure in Grotmol that different users train the robot for tasks of different complexity.

Petitioner's next argument that the claimed "second user" should be given no "patentable weight," Reply, 7 n.2, is also wrong and is a new argument Petitioner did not present in the Petition and thus Petitioner is not permitted to present it here. S*ee Allsteel Inc.*, IPR2015-01691, *2. Also, the "second user" claim limitation is a specifically recited and critical part of the claimed invention and should be given full patentable weight. Ex-2007, ¶¶129-130.

Petitioner's argument that Dr. Saber conceded "that Grotmol's training commands can actually be provided by multiple users," Reply, 7, is wrong and mischaracterizes Dr. Saber's testimony. The cited testimony merely indicates that multiple users ***could*** provide commands to adaptive controllers. Ex-1016, 166:12-18. And while Grotmol discloses that its "BrainOS software platform may be configured to enable users to selectively remove a learned behavior" (Ex-1005, 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 argument that "[t]here is no meaningful hurdle, technical or otherwise, to involving a second user in Grotmol's training processes," and that "this would be accomplished in Grotmol simply by a first user handing over the gamepad or other remote control device used during the first learning process to a second user for use in the second learning process," Reply 8, is Petitioner's own words unsupported in Grotmol and is wrong. The inquiry here is not about what would/could be accomplished, but about the one learning process involving one user that Grotmol actually discloses. Also, adding a second user and integrating knowledge from that user into the claimed mixed knowledgebase is neither simple nor straightforward due to the complexities of combining the mixed knowledge into a single knowledgebase. Ex. 2007, ¶¶128-130.

Finally, Petitioner is wrong that Dr. Janet's deposition testimony "was entirely consistent with his prior declaration testimony that claim 10 would have been obvious in view of Grotmol." Reply, 8. Dr. Janet testified that "a person of ordinary skill would understand what Grotmol is disclosing and that would be the limitations of claim 10." Ex. 2008, 54:22-55:3. This testimony confirms that Petitioner and Dr. Janet have failed to perform a proper obviousness analysis for claim 10, which requires ascertaining the "differences between the prior art and the claims at issue." *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

2. Claim 11

Petitioner's Reply is incorrect in its analysis of claim 11 in several respects, as explained below. As an initial matter, Petitioner's argument that Grotmol discloses or suggests more than one learning process fails for the reasons discussed above with respect to claim 10. Reply, 9. Further, the fact that claim 11 involves multiple devices ***in addition to*** multiple learning processes sets claim 11 further apart from Grotmol and shows that Grotmol fails to disclose or suggest all the features of claim 11, contrary to Petitioner's assertion. Reply, 10. Grotmol discloses ***one*** user operating ***one*** device in ***one*** learning process. The knowledge gained from the single learning process involving one device in Grotmol, when loaded into another device, is still knowledge of ***one*** user operating ***one*** device in ***one*** learning process, which is about ***loading*** the knowledge previously learned on one robot into

another robot and ***not about learning at least a portion of a second digital picture or at least a portion of the second instruction set for operating the claimed third device in a second learning process that includes operating the third device,*** as required by claim 11. Ex. 2007, ¶¶133-135.

Petitioner's argument that "Grotmol does not limit the knowledge provided in its knowledgebase (e.g., in memory 814) to training sets learned on just a single device," Reply, 10, is incorrect, conclusory and not supported by Grotmol's disclosure. First, the inquiry here is not whether Grotmol limits the number of devices where the knowledge is learned, but the one device where the knowledge is learned that Grotmol actually discloses. Second, as discussed above, Grotmol provides no disclosure of a mixed, single knowledgebase including correlations learned in different learning processes, let alone involving different devices. Third, the portions of Grotmol cited by Petitioner only disclose that a trained configuration can be loaded from one robot to another robot. Reply, 10. ***The loading from a first device to a second device is fundamentally different than learning by operating the second device (i.e. loading from a first device to a second device does not include nor even contemplate operating of the second device)***.

Petitioner's contention that "a POSITA would have understood and found obvious from Grotmol's disclosure at col. 33:30-32 that Grotmol's knowledgebase can include so-called mixed knowledge," is false and unsupported by the cited

portion of Grotmol. The portion of Grotmol cited by Petitioner merely provides that a configuration is loaded from one robot to another. Ex-1005, 33:30-32. Indeed, after reviewing this portion of Grotmol, the Board noted in an IPR involving similar claim limitations that ***Grotmol discloses nothing "more than loading a trained configuration from a first robot to a second robot."*** Ex. 2010, 35.

Petitioner argues that Grotmol repeatedly describes its robots as storing multiple configurations, Reply, 11, but cites only a single disclosure from Grotmol where Grotmol plainly discloses only loading a single configuration from one robot to the next. Ex-1005, 33:30-32. Nothing in Grotmol's disclosure of loading a single configuration from one robot to another robot would lead a POSA to arrive at a single knowledgebase that includes mixed knowledge of one correlation ***learned in one learning process involving operating one device*** and an additional correlation ***learned in a second learning process involving operating a third device***.

Recognizing the flaws in its Petition, Petitioner for the first time in its Reply points to the so-called "undo mode" disclosed by Grotmol and argues that "[t]he availability of earlier trained configurations" in Grotmol's undo mode "indicates that Grotmol's knowledgebase . . . includes other configurations and their associated training sets." Reply, 11-12. This is a new argument Petitioner did not present in the Petition and thus Petitioner should not be permitted to present it for the first time in its Reply. *See Allsteel Inc.*, IPR2015-01691, *2. Moreover, this argument and

the portions of Grotmol cited by Petitioner say nothing about a single knowledgebase that includes mixed knowledge of one correlation learned in one learning process involving operating one device and an additional correlation learned in a second learning process involving operating a third device, as discussed above. Reverting to a previous configuration via the "undo mode" does nothing to somehow transform Grotmol into a reference that teaches the limitations of claim 11 because that previous configuration was still based on a knowledgebase formed with ***one*** user operating ***one*** device in ***one*** learning process.

Petitioner's argument that "[m]aintaining multiple configurations and training sets from multiple devices in memory also would have been obvious to a POSITA," Reply, 12, is wrong. Using multiple learning processes to learn mixed knowledge involving operating different devices into a single knowledgebase would not have been straightforward or even close to obvious to a POSA due to the complexities of combining the mixed knowledge involving operating different devices in different learning processes into a single knowledgebase. Ex. 2007, ¶¶135-136. Petitioner's citation of other references, including Exhibit 1020 and Exhibit 1021, to support its argument fails, as the other references (that are new and should be refused consideration) only disclose the use of brain images and fail to disclose using multiple learning processes to learn mixed knowledge involving operating different devices into a single knowledgebase. Reply, 12-13.

Petitioner's argument that Grotmol's disclosure of loading one configuration from one robot to another "does not mean that the receiving robot would discard other trained configurations saved on the robot," Reply, 13, is wrong and not supported by Grotmol. First, Petitioner simply manufactures statements (including the annotated Fig. 10B, Reply, 14) and attributes them to Grotmol. Second, the inquiry here is not whether something would or would not be discarded, but the single configuration that is being loaded from one robot to another robot and the receiving robot operating based on this single configuration that is actually disclosed in Grotmol and cited by Petitioner. Grotmol's disclosure cited by Petitioner (Ex-1005, 33:30–32) lacks even a hint of any configuration that may already be in the destination robot. Third, Grotmol never even implies that correlations in configurations learned in different learning processes, let alone involving operating different robots, are loaded into individual separate controllers. Thus, even if Petitioner's argument was not manufactured and is fully considered, it still says nothing about the specific limitations of claim 11, namely: ***multiple correlations learned in different learning processes involving operating different devices***.

Petitioner's argument that Grotmol discloses mixed knowledge in a single controller in Grotmol's override and correct mode, Reply, 15, is wrong and not supported by Grotmol's disclosure for the same reasons as Petitioner's "undo mode" arguments. Petitioner yet again uses a manufactured "would/could" hypothetical

construct ("this would occur, for example," Reply, 15) instead of what is actually disclosed in Grotmol. The inquiry here is not about what would/could occur, but about the override and correct modes that Grotmol actually discloses that do not even imply any limitations of claim 11. A mixed knowledgebase including correlations learned involving operating different robots in different learning processes is the opposite of "exceedingly simple," Reply, 15, as discussed above with respect to claim 10, except that claim 11 is even more complex as it involves different devices instead of different users. Ex. 2007, ¶¶133-136.

Finally, Dr. Janet has failed to perform a proper obviousness analysis with respect to claim 11 for similar reasons discussed above with respect to claim 10, including that he testified that Grotmol discloses all the features of claim 11, without identifying any claimed features missing from Grotmol for which he was invoking obviousness. Ex. 2008, 59:23-60:2.

IV. GROUND 2: GROTMOL AND HICKMAN DO NOT RENDER OBVIOUS CLAIMS 25 AND 27

1. The Grotmol-Hickman Combination Is Not Obvious

Petitioner's argument that "the specific data structures and organization of Hickman's knowledgebases is not relevant to the Grotmol-Hickman combination because the combination proposed in the Petition never relied upon or even purported to incorporate the specific data structures or organization of Hickman's

knowledgebases," is wrong. Reply, 16. PO's argument here is much more fundamental than whether Petition relied on Hickman's structure and concerns Grotmol's and Hickman's structures being so different that they fail to enable the Grotmol-Hickman combination at all and the alleged sharing of robot knowledgebase. ***Hickman discloses sharing a specifically structured knowledgebase with specifically configured robots that can read this specific knowledgebase, not every knowledgebase imaginable.*** Petitioner cannot simply pick high-level concepts such as "sharing knowledgebase" and "any data structure" divorced from the limits of the references' disclosures and divorced from the claimed limitations, and assert that Grotmol-Hickman combination discloses the claimed limitations. Thus, the organization and data structures disclosed in Hickman's knowledgebase are highly relevant and a POSA would understand that sharing of robot knowledgebase in Hickman would require similarly structured knowledgebases in both Grotmol and Hickman, which is not the case here.

Petitioner's argument that "PO's search for insignificant differences between the references based on features that are not even part of the combination is without merit as '[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, 17 (quoting *Allied Erecting v. Genesis Attachments*, 825 F.3d 1373, 1381 (Fed. Cir. 2016)), utterly misses the mark. This has nothing to do with bodily

incorporation, but with the fact that Hickman discloses storing instruction sets and images separately, which a POSA would have found to be incompatible with Grotmol's disclosure of training sets or correlations with images and instruction sets correlated and stored together. Ex-2007, ¶¶138-142.

Petitioner's argument that Hickman does not teach away from the combination with Grotmol "given that Hickman never criticizes correlated images/instruction sets like those described in Grotmol," Reply, 17, misconstrues the point completely. A reference teaches away "when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken" in the claim. *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 738 (Fed. Cir. 2013). Here, a POSA would have been discouraged from modifying Grotmol with Hickman, *see* Ex. 2007, ¶¶138-142, based on Grotmol's disclosure of training sets stored in memory including correlated images and instruction sets that are stored together, Ex-1005, 3:35-49, and Hickman's disclosure that images and instruction sets are stored separately. Ex-1007, 11:47-12:10; 20:21-34.

Petitioner next argues that Patent Owner mischaracterizes Hickman, Reply, 18, but Petitioner never disputes that Hickman discloses storing instruction sets and images separately. Reply, 18-20. Instead, ***Petitioner now attempts to force 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, 18-20. But as discussed above in Section II, Petitioner cannot introduce new arguments such as this one, and the Board should reject this argument for this reason alone.

Petitioner's argument that all of the data in Hickman is "contained within the higher-order knowledgebase (e.g., 306), and images for both individual unique objects and general objects are correlated with tasks in this knowledge base at least through the UIDs, GIDs, and TIDs," Reply, 20, is Petitioner's own words and unsupported by Hickman as Hickman never discusses "higher-order knowledgebase" and elements being correlated using UIDs, GIDs, and TIDs. Additionally, ***Petitioner again attempts to force an entirely new argument.*** Petitioner never mentioned in the Petition higher-order knowledge base and elements being correlated using UIDs, GIDs, and TIDs. This new argument is untimely, incorrect, and impermissible, and should be refused consideration.

Petitioner also argues that there are multiple reasons a POSA would have been motivated to combine Grotmol and Hickman, Reply, 21, but as discussed above the combination of Hickman's knowledgebase with Grotmol's training sets is based on a new impermissible argument, and would not have been obvious to a POSA. Additionally, Petitioner did not even attempt to provide nor even mention any

evidence of a reasonable expectation of success, a fatal flaw in any obviousness analysis. Thus, Grotmol-Hickman combination fails.

2. Claim 25

Petitioner's arguments regarding Claim 25 fail for the reasons discussed in the Response. Response, 25-28. Petitioner's argument that Hickman's simple knowledgebase is "immaterial" to the combination of Hickman and Grotmol, Reply, 21, is wrong for the reasons discussed above. Again, ***Hickman discloses sharing a specifically structured knowledgebase with specifically configured robots that can read this specific knowledgebase, not every knowledgebase imaginable, and stitching high-level concepts from two references is improper in and fails an obviousness analysis.*** Petitioner's argument that it is unclear what level of sophistication is required to arrive at the claimed invention, Reply, 21, misses the point. *See* Response, 25-26. The specific limitations of claim 25 require that a server must receive the first digital picture or first instruction set and also that the second device must receive the first digital picture or first instruction set for the first device, and then the second device performs operations defined by the first instruction set for the first device. This requires a sophisticated approach not disclosed by Grotmol or Hickman. Response, 25-26.

3. Claim 27

Petitioner's arguments regarding claim 27 fail for the reasons discussed above and in Patent Owner's Response. Response, 28-35. Petitioner's argument that "Hickman describes a cloud-based, shared robot knowledgebase that would improve the ability of Grotmol's robots to share knowledge and to operate based on mixed knowledge learned across multiple devices," Reply 23, ***highlights Petitioner's failure to map specific disclosures of the references to the actual language of claim 27***. Ex. 2007, ¶¶156-157. Petitioner must point to specific teachings in either reference of the specific claim limitations, not just point to a high-level concept such as sharing among multiple robots. Petitioner fails and does not even attempt to map the specific claim limitations to any teachings of Grotmol and Hickman.

Petitioner asserts "Grotmol-Hickman combination adds a shared knowledgebase in the cloud that includes trained configurations including correlated digital pictures and instructions sets learned on multiple devices (e.g., ***including a first device and a third device***). The trained configurations can be provided to any other robot, ***including a fourth device***. When a match is determined between pictures newly acquired ***by the fourth device*** and ***pictures correlated with the instruction sets learned on the third device*** as described in Grotmol, ***the fourth device would perform operations defined by the correlated instruction sets***." Reply, 23-24. Petitioner simply ignores the requirement to find the specific claim

limitations in the prior art references and outright manufactures entire statements (especially the bolded language) and attributes them to the prior art references. Grotmol, Hickman, and Petitioner do not even make an attempt at distinguishing between the first, second, third, and fourth devices. In fact, Grotmol and Hickman do not even mention the third device and fourth devices, and as a result do not even imply the second correlation, the determining, and the performing of operations involving these devices as recited in claim 27.

Claim 27 *requires* that ***the second correlation must include one or more instruction sets specifically "for operating the third device***," the system must generate or receive an additional "digital picture," the system must determine "***instruction sets [specifically] for operating the third device based on at least partial match between the additional one or more digital pictures and the second one or more digital pictures***," and "***causing a [specific] fourth device to perform one or more operations defined by the second one or more instruction sets for operating the [specific] third device***." Petitioner does not map these limitation onto anything in Grotmol and Hickman since the references do not mention these limitations.

V. GROUND 3: GROTMOL AND HOFFMAN DO NOT RENDER OBVIOUS CLAIM 30

Petitioner's argument that "[t]he alleged dichotomy between autonomous and user-controlled operation in the two references is simply inaccurate,'" Reply, 24, is false, and Petitioner's quote from Hoffman supporting this argument ***is misleading***. Petitioner conveniently cuts the sentence from Hoffman where it suits it, whereas the entire sentence proves that Hoffman is operated by a user: ". . . ***the user 10 passes higher-level commands to the robot 200."*** Ex-1009, 11:39-40 (emphasis added). On Grotmol's side, Grotmol never discloses a user-controlled robot and instead only discloses that a user can train the robot in the portions of Grotmol cited by Petitioner, Reply, 24. ***Grotmol's entire purpose is for the robot to be autonomous when it is trained.*** Ex. 2007, ¶¶159-161. A POSA would not have been motivated nor would have looked to the augmented map in the user-controlled system of Hoffman to modify the autonomous system in Grotmol, hence the Grotmol-Hoffman combination fails.

Petitioner repeats its assertion that the combination uses "Hoffman's augmented map generation with Grotmol's autonomous robotic system in order to provide more detailed information about the robot's surroundings to the user," Reply, 25 (quoting Petition, 39-40), but fails to provide specific obviousness analysis to justify the combination of Grotmol and Hoffman. For example, Petitioner fails to

explain how the map in Hoffman would have been used with the digital pictures of a robot's surrounding claimed in Grotmol to arrive at the claimed invention. Ex. 2007, ¶¶160-161. And ***Petitioner's assertion says absolutely nothing about detecting a location of an object and a new digital picture that includes a top-down view of a representation of the object.***

Before even considering claim 30, Petitioner's argument for claim 30 fails because its argument for the base claim 29 fails, and Petitioner's contention that "PO mischaracterizes base claim 29 in arguing that it requires a causal chain," 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." Grotmol does not even contemplate, let alone disclose this specific, claimed process. Ex-2007, ¶¶115-118.

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. Grotmol says nothing about generating a ***new digital picture using generated representations of previously detected objects*** as recited in claim 29. And Dr. Saber's testimony cited by Petitioner, Reply, 26 (citing Ex-1011, 65:9-67:1), that he would need more time to find support for the claimed invention in the specification does not undermine or even relate to the argument that Grotmol in view of Hoffman fails to disclose claim 29.

Petitioner argues that Grotmol's disclosure of generating digital picture 2010 discloses the claimed invention of claim 29, but this argument is conclusory, unsupported by Grotmol, and was not made in the Petition. 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 ***any object representations are generated*** based on ***objects that are detected*** in previous image 2000 and that ***the generated object representations of the detected objects are then used to generate picture 2010***. *Id.*

Petitioner argues that Grotmol discloses detecting positions or locations of objects, Reply, 27, but the portions of Grotmol cited by Petitioner only refer to the position or location of the ***robot***, not objects. Nothing in Grotmol discloses that positions or locations of objects (as required by claim 30) are detected during the fetch operation cited by Petitioner. *Id.*

Petitioner's statement that "the Grotmol-Hoffman system predictably generates a Hoffman-like map while operating in the context of Grotmol's process," *id.*, is conclusory and lacks support in Grotmol. The new digital picture in claim 30 is not a general picture, but a picture generated by a picture generation process specifically defined in claim 29, as discussed above. Ex. 2007, ¶¶169-170. Petitioner's claim that the map is generated using the robot's location and representations of objects, Reply, 27-28, is conclusory and not supported by Grotmol or Hoffman, as the references fail to disclose the generation process of claim 29. None of Petitioner's arguments address what is actually claimed in claim 30, namely ***detecting a location of an object and a new digital picture that includes a top-down view of a representation of the object.***

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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 5,595 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,

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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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