

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

AUTONOMOUS DEVICES, LLC,
Patent Owner

Case: IPR2023-01169
U.S. Patent No. 10,607,134

PATENT OWNER'S SUR-REPLY

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Exhibit List

Exhibit	Description
2001	Biography of Blair M. Jacobs (previously submitted)
2002	Declaration of Blair M. Jacobs (previously submitted)
2003	Supplemental Declaration of Blair M. Jacobs (previously submitted)
2004	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 19, 2024 in IPR2023-01169 (previously submitted)
2009	RESERVED
2010	RESERVED
2011	RESERVED
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 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 (Paper 29), has not established that the cited prior art references disclose or suggest all of the limitations of the claims discussed below, and has not rectified numerous other deficiencies in the Petition.

II. GROUNDS 1 AND 2: THOMAS DOES NOT ANTICIPATE OR RENDER OBVIOUS THE CHALLENGED CLAIMS

A. Claims 1, 10, and 19

Petitioner's attempt to equate Thomas's vague disclosure of analysis with the claimed matching of object representations fails. Reply, 1-5. As discussed in the Response, Response, 14-19, *"analysis" is different than "matching," and "stored data," "user's behavior," "tendencies," "inclinations," and "event" are all different than "object representations,"* thus the analysis of "stored data," "user's behavior," "tendencies," "inclinations," and "event" discussed in Thomas is different than "matching of object representations" in claim 1. Ex. 2007, ¶¶69-70.

Petitioner's contention that "a POSITA would have understood the operation of Thomas's playback mode to be based on a match between current circumstances and circumstances previously recorded during learning mode, e.g., a match between object representations," Reply, 1-2, is Petitioner's own words, is conclusory, and is

unsupported by Thomas’s disclosure. Since Thomas *never describes anything about what its analysis involves and since “analysis” is a different concept than “matching,”* nothing in Thomas suggests to a POSA, let alone discloses matching of object representations.

Petitioner next contends that the system in Thomas “analyzes situations that occur during playback mode and identifies similar situations that were recorded during learning mode, in order to invoke the appropriate simulated input responsive to each playback mode situation.” Reply, 2. But the portion of Thomas cited by Petitioner discloses that the system “monitors and analyzes the operation of the computer program in search of particular events and/or situations,” Ex-1005, 5:34-37, and never mentions or even hints at matching object representations – *events and situations being different concepts than object representations.*

Petitioner’s statement that “a POSITA would have understood that identification of similar situations involves identifying situations having at least some similar parameter values, e.g., situations with a match between object representations,” Reply, 2, is also Petitioner’s own words, is conclusory, and is unsupported by Thomas. *Thomas never explains how it performs the alleged identification or analysis of situations in the operation of the program.*

Petitioner next contends that “Thomas’s reliance on a match between object representations is apparent in the context of the ‘pump fake event’ discussed in the

Petition.” Reply, 2. But *Thomas never uses the word match nor mentions anything about matching in relation to this event.* And Thomas (and Petitioner) never explain or define what is meant by “criteria,” how the criteria are used, and how that criteria are met, hence a POSA would not have understood Thomas’s vague disclosure of criteria being met in the context of a pump fake event to include matching. Ex. 2007, ¶¶70-75. Further, the inquiry here is based on the words actually used by Thomas and the plain meanings of those words informed by Thomas’s disclosure. Thomas only discloses “analysis” and analysis “criteria” as Petitioner noted in its citations of Thomas. Both *“analysis” and analysis “criteria” are different concepts than “matching.” Id.*

Petitioner’s argument that “[a] POSITA would have understood that the question of whether ‘criteria is met,’ in the context of analyzing defensive coverage to determine whether to invoke an action (e.g., a pump fake), is based on whether there is a match between object representations,” Reply, 3, is conclusory and improperly seeks to fill in the holes in Thomas’s disclosure. None of the portions of Thomas’s disclosure cited by Petitioner actually disclose comparing or matching object representations since “analyzing” is a different concept than “matching” as discussed in detail above. Ex. 2007, ¶¶70-74. Petitioner’s citation to Dr. Saber’s deposition testimony, Reply, 3, also fails to support Petitioner’s position, as Dr. Saber merely stated that a pump fake action *would be invoked in certain situations*

and not that Thomas discloses matching, much less matching object representations. Ex-1023, 97:11-18.

Petitioner's next argument that "Thomas's pass out of shot event" provides a particularly clear example of Thomas's system determining whether there is a match between object representations," is also wrong. Reply, 3. The portion of Thomas cited by Petitioner states that the simulator in Thomas will "analyze how well the passing avatar and the receiving avatar are covered," Ex-1005, 7:60-61, and provides *no disclosure or explanation regarding this analysis* to be even comparable to matching of object representations. *The entire Thomas reference does not disclose anything about the analysis.*

Petitioner's statement that a "POSITA would have understood that the question of whether 'current circumstances meet the criteria' in terms of 'how much the passing and receiving avatars are covered' . . . is based on whether there is a match," Reply, 4, is conclusory and unsupported by Thomas. Thomas's statement that "if the current circumstances meet the criteria," Ex. 1005, 7:62-63, *does not even mention object representations and Thomas does not disclose anything about the criteria*, and thus fails to disclose the claimed matching of object representations. Ex. 2007, ¶¶72-73.

Petitioner's argument that Patent Owner is reading "an active matching step," Reply, 4, into the claims is misleading. Claim 1 specifically requires "determining

the first one or more instruction sets for operating the first avatar of the application based on at least partial match” between object representations. Petitioner cannot minimize the requirement of the claimed “at least partial match,” where the claim specifically requires matching object representations.

Petitioner’s argument that Patent Owner fails to account for the “reasonable inferences that a POSITA would bring to bear in reviewing Thomas,” is wrong. Reply, 5. Patent Owner has specifically explained why a POSA would not have arrived at the claimed invention based on Thomas’s vague disclosure and lack of explanation. Response, 14-19.

In sum, Thomas discusses “analysis” of “stored data,” “user’s behavior,” “tendencies,” “inclinations,” “event,” and “situation.” But nothing in Thomas discloses anything regarding the claimed matching of object representations: *(i) the claimed operation is different (“matching” vs. “analysis” as discussed above), and (ii) the claimed element operated on is different (“stored data,” “user’s behavior,” “tendencies,” “inclinations,” “event,” and “situation” vs. “object representations” as discussed above).*

B. Claim 3

Petitioner accuses Patent Owner of improperly importing a counting requirement into claim 3, Reply, 5-7, but Patent Owner has done no such thing. Patent Owner has merely pointed out that using the number of at least partially

matching portions in the matching process of claim 3 *inherently involves counting the portions and determining whether this counted number of portions exceeds a numerical threshold*, and Thomas does not disclose any such counting of portions and numerical threshold. Response, 19-22. Further, using the percentage of at least partially matching portions in the matching process in claim 3 *inherently involves counting the portions to compute the percentage and determining whether this computed percentage of portions exceeds a percentage threshold*. *Id.* However, Thomas does not disclose any such counting of portions, computation, and percentage threshold, either. *Id.*

Petitioner's argument that the claimed determining can be performed without counting is wrong. Reply, 6. Petitioner states that "while a number of items (e.g., a number of partially matching portions) can be determined by simply counting the items, it can also be determined in other ways, such as by calculation (e.g., by adding together the number of items in multiple subsets of known (or estimated) quantity or by computing the value of an equation indicative of the number of items) or by estimation, among others." Reply, 6. Petitioner admits that counting is used in its own examples. Adding together a number of items in multiple subsets *still requires counting the items in each subset*. And computing an equation indicative of the number of items *still requires determining the number of items by counting*. Finally, estimating *still requires counting to produce the number of whatever*

elements are estimated, and claim 3 specifically requires *determining* that a number of at least partially matching portions exceeds a threshold, *not estimating* that the number exceeds a threshold. Because the number of at least partially matching portions *is a number of items*, whatever method is used, counting is required to arrive at the number of at least partially matching portions. Response, 19-22.

Petitioner next refers to the pass example in Thomas and claims that a POSA “would have understood that ‘how much’ an avatar is covered refers to how many opposing-team players are within the vicinity of that avatar.” Reply, 6. But *Thomas never discloses nor even hints that how much an avatar is covered involves the number of players nor anything for that matter* (Thomas simply does not say anything about it).

Finally, Petitioner’s attempt to manufacture the use of a threshold in Thomas’s disclosure of criteria being met and a pump fake example also fails. Reply, 6-7. Thomas merely discloses that a pass is executed “if the current circumstances meet the criteria, e.g., how much the passing and receiving avatars are covered,” Ex-1005, 7:62-64, and “if criteria is met,” a pump fake is invoked. *Id.*, 8:-15. But *Thomas never uses the word threshold or explains how any threshold, much less numeric or percentage threshold for portions of object representations as in claim 3 is used*, and Petitioner’s attempt to manufacture the use of a threshold out of Thomas’s disclosure of coverage meeting criteria fails.

C. Claim 4

Contrary to Petitioner's arguments, Reply, 7-11, Patent Owner's proposed construction for "connection" in claim 4 is well-supported by the intrinsic and extrinsic record, and Thomas 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 4 is recited to narrow what is recited in independent claim 1.*

Patent Owner has offered a well-supported construction of the term "connection" as "a relationship that includes a link." Response, 9–13. Patent Owner's proposed construction is reasonable, well-supported, and is the meaning that the term would have had 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, 1313 (Fed. Cir. 2005) (en banc).

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 16 and 17A and the associated disclosure confirm that a connection is a

relationship that includes a link. Response, 9-13. 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 ’134 patent cited by Petitioner are highly relevant, as they provide specific descriptions of connections and Figures showing connections as relationships that include links. Reply, 9. And Petitioner is wrong that the ’134 patent never refers to a connection including a link, as both *Figures 16 and 17A show a connection including a link*.

Petitioner’s only argument regarding the dictionary definitions of “connection” cited by Patent Owner is that the definitions were “cherry-picked.” Reply, 10. These definitions support Patent Owner’s proposed construction and are entirely consistent with the disclosures of the ’134 patent, including the figures and portions of the patent cited by Patent Owner in its Response. Response, 9-13.

Petitioner’s alleged plain and ordinary meaning for the term “connection” as an “association or relationship,” Reply, 10, finds no support in the intrinsic record and broadens the meaning of the term improperly. Petitioner provides no explanation in its Reply regarding how the intrinsic record supports its proposed meaning. Reply, 10. The Board should reject Petitioner’s overly broad and unsupported meaning for “connection” and adopt Patent Owner’s proposed construction.

Petitioner next incorrectly argues that Thomas discloses connections under the alleged plain and ordinary meaning of that term because “Thomas describes correlations each including a different instruction set for the same situation/event, where numerical weights are assigned to the correlations to indicate the frequency of occurrence of the action corresponding to each instruction set.” Reply, 11. Petitioner completely misses the point as *Petitioner’s statement does not mention connections at all*. Claim 4 recites “the first correlation is connected with the third correlation by a connection,” not “numerical weights are assigned to the correlations” in Petitioner’s citation of Thomas. Plus, numerical weights in Petitioner’s argument *are not applicable to a connection since they are not recited in claim 4*. Ex. 2007, ¶¶82-84.

Even if a numerical attribute or value was applicable (which it is not as discussed above), Petitioner’s argument that “a POSITA would have understood Thomas’s occurrence weights to link the various instruction sets that are correlated to a common situation/event,” where the numerical attribute in Thomas is the claimed connection, Reply, 11, is Petitioner’s own words unsupported in Thomas, and is conclusory. Even in its own manufactured statement, Petitioner is wrong since claim 4 requires correlations (object representations correlated with instruction sets) being linked by a connection, not “Thomas’s occurrence weights ... link the various instruction sets that are correlated to a common situation/event” in Petitioner’s

statement. *A correlation is linked with another correlation in claim 4, not instruction set with an event/situation* in Petitioner's statement. Additionally, the connections recited in claim 4 are not some ancillary occurrence weights, but are relationships that include specific links between correlations under the proper construction. These *connections link specific correlations to create multiple paths through the knowledgebase to enable multiple options in the decision making for autonomous operation*, Ex. 2007, ¶¶85-86, that Thomas does not even suggest, let alone disclose. Ex. 2007, ¶¶84-86.

D. Claim 7

Petitioner first argues that Thomas discloses that the claimed “determination is made that the first one or more instruction sets for operating the first avatar of the application temporally correspond to the first one or more object representations” because “the claim does not require the specific context that PO attempts to import into its interpretation of the claim.” Reply, 12. But Patent Owner is directly relying on the claim language itself in its arguments. Response, 26-28. Patent Owner's statement that “a determination of temporal correspondence is needed for correct correlation,” Response, 27, is tied directly to and indeed quotes the claim language, and explains the claimed determination process. Patent Owner's straightforward argument, based on the text of the claim, is that *Thomas never even mentions a determination of temporal correspondence of anything*.

Petitioner's statement that a "POSITA would have understood that this temporal correspondence is determined in Thomas," is conclusory and unsupported by Thomas's disclosure. Reply, 13. The portions of Thomas cited by Petitioner, *id.*, only describe associating a game situation with ***whatever user's commands happen to be executed at that time***, and do not mention any determination of temporal correspondence between the user's commands and the defensive coverage situation. Ex. 2007, ¶¶87-90. ***Thomas says nothing about a determination of temporal correspondence of anything***, let alone a determination of temporal correspondence of instruction sets and object representations in order to correlate them as claimed.

E. Claim 12

Petitioner's contention that Thomas's alleged disclosure of multiple users sharing a profile when playing a video game reads on the claimed third correlation learned in another learning process is conclusory, is unsupported by Thomas, and is wrong. Reply, 13-14. Claim 12 recites the two learning processes, and ***Thomas mentions nothing about multiple users sharing a profile in Thomas's learning mode***. Instead, Thomas discusses how the learning mode records a single user into a single user profile so that that particular single user can be simulated in the simulation mode. Also, Claim 12 does not recite ***sharing user profiles***, and instead requires ***learning at least a portion of the third correlation in another learning process involving operation of the first avatar by another user***. Ex. 2007, ¶92.

Petitioner's claim that "[a] POSITA thus would have understood Thomas's disclosure of another user accessing a first user's profile to encompass that other user accessing the first profile in learning mode, and thus that other user operating the first user's avatar in learning mode," Reply, 13, fails to explain why a POSA would understand that Thomas discloses a single knowledgebase that includes mixed knowledge of a first correlation learned in one learning process with one user and a third correlation learned in another learning process with another user. Ex. 2007, ¶¶92-93. Thomas only discloses *one user operating an avatar during a learning process and simulating that one user in the simulation mode* (see Ex. 1005, Abstract). *Id.* Thomas's system does not store mixed knowledge of different users in a single user profile. Claim 12 requires learning at least portions of multiple correlations in different learning processes involving different users into a single mixed knowledgebase that Thomas mentions nothing about. Ex. 2007, ¶¶93-94.

Petitioner's statement that "it is common for multiple users to share a profile when playing a video game, e.g., when multiple players take turns playing on single console and do not switch profiles between their turns," Reply, 14, is conclusory and *lacks any support or citation by Petitioner*. Petitioner cannot find any support for this in Thomas because Thomas mentions nothing about a single knowledgebase that includes mixed knowledge of a first correlation learned in one learning process with one user and a third correlation learned in another learning process with another user.

Petitioner's next argument, that "a POSITA would have understood that when a correlation is learned in learning mode when the other user is operating the first user's avatar, that correlation is learned in a learning process that includes operating the first avatar by another user," Reply, 14, is conclusory, is unsupported by Thomas, and nonsensical. ***Thomas never discloses that one user uses another user's avatar*** such that a POSA would arrive at the claimed at least a portion of the third correlation learned in another learning process involving another user and included in a single mixed knowledgebase.

Petitioner's final argument regarding this claim that the claimed "another user" should be given "no patentable weight," Reply, 14, 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. *See Allsteel Inc. v. Dirtt Environmental Solutions LTD.*, IPR2015-01691, *2 (PTAB April 22, 2019). Also, the "another user" claim limitation is a specifically recited and critical part of the claimed invention and should be given full patentable weight, as having different users operate an avatar in different learning processes to learn mixed knowledge into a single knowledgebase is technically complex and innovative. Ex. 2007, ¶115. As a result, Petitioner's argument fails.

F. Claim 14

Petitioner's contention that "PO improperly attempts to import a requirement that the third correlation recited in claim 14 be 'learned . . . involving a different application,'" Reply, 15, fails. Claim 14 specifically requires the instruction sets of the third correlation be for "operating an avatar of another application," and that the object representations "represent one or more objects of the another application." Petitioner's contention that "[t]he claim places no constraint on where the third correlation was learned," is therefore misleading, because, in the third correlation, the object representation represents an object *of another application* and the instruction set is for operation of an avatar *of another application*. Thomas fails to disclose a knowledgebase including mixed knowledge of instructions sets and object representations learned involving multiple different applications to be used across different applications.

Petitioner's argument that "instances of the game running on different consoles can be considered different applications, because, e.g., the game must be adapted to the specific instruction set architectures, constraints, and interfaces of the respective consoles," Reply, 15, is also wrong. Petitioner's contention *describes learning from instances of one application (i.e. basketball video game) on different game consoles, not instructions sets and object representations (i.e. first correlation) learned involving one application (i.e. Fortnite, etc.) and instructions*

sets and object representations (i.e. third correlation) learned involving a different application (i.e. Apex Legends, etc.) as required by claim 14. Ex. 2007, ¶¶96-97. Thomas's disclosure of profiles learned in instances of one application and used in instances of the same application on a different console, confirms that Petitioner's argument fails.

G. Claim 16

Petitioner argues that Patent Owner is improperly restricting the scope of the first correlation, 16-17, but this is nonsensical. Claim 1, from which claim 16 depends, specifically provides that the first correlation only includes (A) a first one or more object representations correlated with (B) a first one or more instruction sets. Ex. 1001, Claim 1. Thus, the only elements of the first correlation are the first instruction set and the first object representation. Ex. 2007, ¶¶99-100. Therefore, association of a value or numerical weight with a user input in Thomas does not delete, modify, nor manipulate (first three disjunctive requirements) an element of the correlation *since it does not delete, modify, nor manipulate (A) the first one or more object representations nor (B) the first one or more instruction sets of the first correlation*. And to insert (last disjunctive requirements) something into a correlation *would require inserting something into (A) the first one or more object representations or (B) the first one or more instruction sets (the only constituents of the correlation)*, whereas Thomas *only associates a value with a user input and*

does not insert (which itself is different than associating) it into (A) the first one or more object representations nor (B) the first one or more instruction sets of the first correlation.

Petitioner's argument that the term "including" is an open-ended phrase and that nothing in the claims "prevents the 'first correlation' from including additional elements," Reply, 16-17, is incorrect. A claim is limited by what it actually recites and Claim 1 recites elements A and B as discussed above, and only those elements can be deleted, modified, manipulated, or inserted into in claim 16, which Thomas mentions nothing about. Petitioner cannot create an additional element of a correlation not recited in claim 16 and then assert that Thomas's use of the additional unrecited element somehow reads on the claimed invention.

H. Claim 17

Petitioner's argument that "modifying the kick" disclosure in Thomas reads on claim 17, Reply, 17, fails. As discussed in the Response, Thomas *merely discloses adding power to the total kick power accumulated, not modifying any instruction set, especially not one that is correlated with an object representation*, as required by claim 17. Response, 35-38. Thomas does not even mention modifying instruction sets, commands, user input, or anything related to an instruction set recited in claim 17.

Petitioner has failed to respond to Patent Owner’s arguments that Thomas fails to disclose “executing: the modified the first one or more instruction sets,” and “performing, by the first avatar of the application or by the second avatar of the application, one or more operations defined by: the modified the first one or more instruction sets.” Response, 36-38. As discussed in Patent Owner’s Response, Thomas does not disclose that any actual instruction set, command, user input, operation, or anything related to an instruction set recited in claim 17 is modified, executed, or performed. *Id.*

III. GROUND 3: BUEHLER DOES NOT ANTICIPATE CLAIMS 1, 3, AND 17

A. Claim 1

Petitioner does not dispute that the object disclosed by Buehler and cited by Petitioner for the claimed “object of the application” of claim 1 is a physical object, Reply 18-19, but instead wrongly insists that a physical object can be an object of the application. *Id.* The object disclosed by Buehler that is simulated as being operated on by Buehler’s virtual gripper in augmented reality is a physical object and not an object of the application, as required by claim 1. Response, 51-53.

Petitioner’s statement that “both real-world objects (e.g., the physical objects operated on by Buehler’s virtual grippers) and computer-generated data (e.g., Buehler’s virtual grippers) constitute aspects of Buehler’s augmented reality

application,” Reply, 18, is wrong, effectively renders the term “of the application” in claim 1 meaningless, and irrationally denies the obvious separation of the virtual world of the application and the physical world. In augmented reality, computer generated data is overlaid on the real world, but physical objects (i.e. concrete/metal/wood-made objects) are still in the real world. In fact, very simple logic dictates that *objects of an application and physical objects are mutually exclusive since objects (e.g., virtual objects) of an application (e.g., virtual world) exist only in the application and physical objects (e.g., concrete/metal/wood-made objects) exist in the physical world and cannot exist in any application.*

The specification of the '134 patent also confirms that an object *of the application* cannot be a physical object. The specification specifically recites that an application is:

a computer game, a virtual world, a 3D graphics application, a 2D graphics application, a web browser, a media application, a word processing application, a spreadsheet application, a database application, a forms based application, an operating system, a device control application, a system control application, or a computer application.

Ex-1001, 2:12-19. An object *of* a computer game, virtual world, or any of these other applications or software cannot be a physical object, as these are all virtual computer

programs. ***Physical concrete/metal/wood-made objects can simply never exist in a computer program.***

None of the portions of Buehler cited by Petitioner supports its irrational definition of the claimed “object of the application.” Reply, 19. Buehler’s disclosures that (i) “the robot overlays computer-generated graphics . . . onto the real-world,” Ex-1006, 3:59-62, and (ii) “real-world data (or the real world itself) augmented with computer-generated data,” Ex-1006, 2:4-5, only indicate that Buehler involves augmented reality in its presentation of the virtual gripper and says nothing about whether the physical object that the virtual gripper is simulated to operate on can ever be an object of the application. Even more fundamentally, no matter if or how the real world allegedly may be involved in Buehler’s augmented reality application, ***claim 1 simply does not recite nor involve any physical objects at all.***

Petitioner’s statement that “Buehler further clarifies that interactions with real-world objects are within the scope of its augmented reality application,” is conclusory, is unsupported by the cited portion of Buehler, and still only mentions real-world objects, not objects of an application. Reply, 19. And the portion of Buehler cited by Petitioner merely provides that “visual augmented reality need not necessarily use camera images. Instead, the robot may place optical signals into the real world itself,” e.g., by “shin[ing] a laser pointer at the object” “to communicate

its object selection to the user.” Ex-1006, 12:60-65. The physical object described by Buehler in this example *is an object in the real world that is the opposite of an object of the application.*

Dr. Saber’s deposition testimony cited by Petitioner actually supports the argument that a physical object cannot be an object of the application as required by claim 1. Reply, 19. Dr. Saber specifically distinguished between computer generated objects, which are objects of the application, and confirmed that an augmented reality application *involves* some computer generated aspects and some real-world aspects, not that a physical object can ever be an object of the application. Ex-1023, 106:16-21.

Turning now to the at least partial match of object representations representing objects of the application in claim 1, Petitioner’s arguments that (i) “Buehler relies on a match between an image of a real-world physical object (e.g., a second object representation) and a template image from a library (e.g., first object representations) as part of the process of identifying that real-world physical object,” Reply, 20, and (ii) that the “detection algorithm” is used with “images” for object identification, Reply, 20, are conclusory, unsupported by Buehler’s disclosure, and are inapplicable to matching of object representations. First, “an image of a real-world physical object (e.g., a second object representation)” in the Petitioner’s statement is not the claimed second object representation since claim 1 specifically recites “*second one*

or more object representations represent one or more objects of the application,” not a physical object. Second, as discussed in the Response, the identifying of objects disclosed in Buehler is a different concept than matching of object representations in claim 1. Response, 50-53. Buehler discloses using a visual model to *identify an object*, Ex. 1006, 7:6-15, *not to match object representations*. Ex. 2007, ¶¶125-127.

Petitioner’s contention that Buehler’s detection algorithm “does not preclude the use of matches,” and that a POSA would understand that object identification involves matching is also wrong. Reply, 20-21. First, the inquiry here is not what Buehler’s detection algorithm does or does not preclude, but what Buehler actually discloses about matching of object representations. Second, a POSA reading Buehler would not have arrived at the claimed matching because Buehler does disclose nor even hint at this matching of object representations representing objects of the application. Third, this is an anticipation ground and *the knowledge of a POSA cannot be used to fill in the gaps in Buehler*.

Petitioner’s argument that Patent Owner has failed to explain the difference between object identification and matching of object representations fails. Reply, 21. Patent Owner has explained that Buehler’s object identification, recognition, or detection *uses image features to identify, recognize, or detect the object*, and does *not match object representations*, and further explained that what is being identified

in Buehler's object identification *is objects*, whereas what is being matched in matching of claim 1 *is object representations*. Object representations represent objects, but are not the objects themselves. Thus, not only the operations (i.e., identifying vs. matching) are different, but the elements (i.e., objects vs. object representations) that these operations operate on are different as well. Ex. 2007, ¶¶126-127. And Dr. Saber's testimony cited by Petitioner that Buehler discloses a comparison does not support that Buehler discloses the claimed matching of object representations representing objects of the application, Reply, 21.

B. Claim 3

Petitioner's contentions that (i) a "POSITA would have understood Buehler's 'set threshold' as disclosure of a threshold number or percentage for determining whether there is a match between object representations," Reply, 22, and (ii) "POSITA would have understood that in order for a pair of images to qualify as matching, there would be at least a threshold minimum number or percentage of pixels that have scores above that set threshold," Reply, 22-23, are conclusory, unsupported by Buehler, and misleading. The quote from Buehler where Petitioner cherry picked "set threshold" reads "...the detection algorithm may run ..., resulting in a score for each pixel. Scores above a set threshold ..., may then be clustered to determine the potential location of the object in the image." Ex-1006, 18:54-60. This quote is about *a score for each pixel* and about *determining the potential location*

of the object in the image, and has nothing to do with a number or percentage of at least partially matching portions of object representations exceeding a threshold number or threshold percentage as required by claim 3. Also, this is an anticipation ground and the knowledge of a POSA cannot be used to fill in the gaps in Buehler.

Petitioner repeats its argument that the system in Buehler uses a threshold metric or score (i.e., a threshold number) to assess whether there is a match of images. Reply, 22. But as discussed in the Response, (i) *images in Buehler are different than at least partially matching portions of object representations* in claim 3, and (ii) *the generic metric or score in Buehler is different than the specifically recited threshold number or threshold percentage* in claim, whereas claim 3 requires both (i) and (ii). Response, 54-57.

C. Claim 17

Petitioner contends that “a POSITA would have understood that if the user adjusts the configuration of the robot during training such that it can better perform a task, that adjustment would be used to modify the robot’s training—e.g., to modify instruction sets—such that the robot can improve its performance.” Reply, 23. This argument is conclusory and not supported by Buehler. Petitioner’s assertions of “adjusts the configuration of the robot” and “that adjustment would be used to modify the robot’s training” *do not say anything about modifying any instruction sets. In fact, they do not even mention instruction sets.* Furthermore, if Petitioner

is referring to the virtual gripper, adjustments to the position of the gripper in a computer system are technically accomplished *by issuing additional, whole, unmodified instructions to the gripper, not by modifying instructions*. Ex. 2007, ¶¶135-137. Also, this is an anticipation ground and the knowledge of a POSA cannot be used to fill in the gaps in Buehler. Therefore, Petitioner has not established that Buehler discloses that the instruction sets are modified as required in claim 17.

IV. THE PETITION’S OBVIOUSNESS ANALYSIS IS FLAWED

Petitioner’s contention that “the Petition clearly identifies the features it deems are rendered obvious by reference to a POSITA’s knowledge,” is wrong. Reply, 23-24. Petitioner’s citation to certain pages in its Petition, Reply, 24 (citing Petition, 19-21, 40-42, 45-47), does nothing to cure the deficiencies in Petitioner’s obviousness analysis with respect to Ground 2. Nothing on the cited pages explains which specific claim limitations are missing in the primary reference for Ground 2. And nothing in the Reply, Reply, 24, identifies the missing limitations. Petitioner has failed to provide a proper obviousness analysis. Response, 48-50.

Dated: August 5, 2024

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 5,598 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** and supporting exhibits have been served on Petitioner via email on the following counsel of record for Petitioner:

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