

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

AUTONOMOUS DEVICES LLC,
Patent Owner.

Case IPR2024-00745
U.S. Patent No. 11,663,474

**PETITIONER'S REPLY TO
PATENT OWNER'S PRELIMINARY RESPONSE**

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Petitioner submits this Reply to Patent Owner's Preliminary Response pursuant to the Board's authorization of August 21, 2024.

I. GROTMOL GROUNDS: PO ERRS IN ASSERTING THAT THE CLAIMED "KNOWLEDGEBASE" MUST BE SHARED

Patent Owner ("PO") argues that, because Grotmol's adaptive controller is "never loaded from one robot to another robot," Grotmol somehow does not disclose a "knowledgebase that includes instruction sets for operating a second device," as allegedly required by claim 45. POPR, 23 (emphasis omitted). By this argument, PO appears to implicitly interpret claim 45 to require that the "knowledgebase" be transferred from a "second device" to a "first device." POPR, 22-24. Not so. PO's implicit interpretation is not only inconsistent with the plain language of claim 45, but also immaterial to the grounds set forth in the Petition.

A. PO's interpretation of claim 45 as requiring that the "knowledgebase" must be shared is wrong

Claim element [45.1] refers to "a knowledgebase that includes one or more inputs for inputting at least a portion of a circumstance representation, wherein the one or more inputs are correlated with one or more instruction sets for operating a second device." TESLA-1001, Claim 45 (emphasis added). This language makes clear that the "instructions sets" themselves, rather than the "knowledgebase," are what must be provided "for operating a second device." *Id.* Element [45.1] limits the "knowledgebase" insofar as it must "include[] one or more inputs ..." that are

“correlated with” the instruction sets for operating the second device. *Id.* But the requirement for inputs correlated with such instruction sets does not imply that the knowledgebase must be transferred or otherwise shared by the second device.

Although the '474 Patent describes “some” embodiments where the knowledgebase is shared, these embodiments are merely “example[s].” *See, e.g.,* TESLA10-01, 102:30-103:39. The specification and file history lack any lexicography or disavowals that could even possibly justify PO’s departure from plain language of claim 45. The Examiner’s reasons for allowance even refer to “sharing instruction sets” and not sharing a knowledgebase. TESLA-1002, 77-78.

B. Grotmol anticipates claim 45 properly interpreted

As described in the Petition, Grotmol discloses a “knowledgebase” as recited in claim 45, including the specific features of the “knowledgebase” recited in element [45.1]. Pet., 56-60. The Petition cited Grotmol’s disclosure that “a robotic device may comprise a controller operating a software component ... configured to enable training[.] ... The trained controller of the robot may comprise a trained configuration configured to enable autonomous operation (e.g., without user input) by the robot device. ... [T]he trained configuration may be loaded to one or more other robots in order to provide learned behaviors.” TESLA-1008, 33:15-32 (emphasis added).

PO's argument that "the saved/trained configuration is a distinct entity from the adaptive controller" such that "Grotmol's discussion of loading a trained configuration into a robot is irrelevant under Petitioner's mapping" of Grotmol's controller to the claimed "knowledgebase" makes no sense and is wrong. POPR, 22-24. Again, claim 45 does not require that the knowledgebase itself be transferred. Moreover, Grotmol makes clear that "trained configurations" are provided in the "trained controllers" ("adaptive controllers," as said elsewhere in Grotmol), and that these trained configurations are shared between devices. TESLA-1008, 33:24-32. Even if Grotmol's disclosure of sharing "trained configurations" does not expressly refer to sharing the controllers themselves (which Petitioner does not concede), shared configurations are nonetheless loaded into the controller of the receiving (e.g., first) device according to Grotmol's express disclosure. TESLA-1008, 33:24-25. This suffices to meet element [45.1] according to the analysis detailed in the Petition. Pet., 56-60.

II. BUIBAS GROUNDS: PO MISCHARACTERIZES BUIBAS AND OVERLOOKS PETITIONER'S MAPPINGS THAT CONFIRM BUIBAS-SINYAVSKIY RENDERS OBVIOUS CLAIM 45

A. Buibas' "brain images" are more than just "a collection of weights," as PO argues

PO's argument that Buibas' brain image cannot be the claimed "knowledgebase" since the brain image is a mere "collection of weights" that "does not include any inputs, or instruction sets" is incorrect. POPR, 13-16.

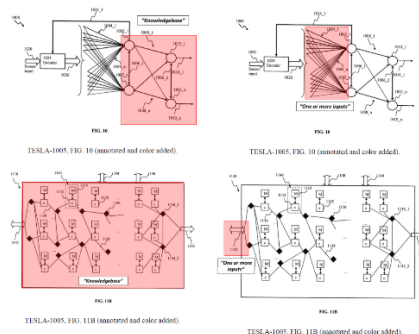
PO rightly observes that Buibas “includes plentiful evidence of what a brain image is.” POPR, 14. But the analysis that proceeds from that observation does not withstand scrutiny as PO cherry-picks the evidence to portray the “brain image” as something less than what Buibas actually contemplated. POPR, 14. Indeed, Buibas explains that brain images loaded onto a robot serve to “control ... features” of the robot and are associated with robot “functionality.” TESLA-1005, ¶[0179] (emphasis added). A mere “collection of weights” would not provide such “control ... features” nor would it be associated with the “functionality” that Buibas specifically attributes to a brain image. POPR, 13-16.

PO’s characterizations of Buibas’ weights are likewise inaccurate. For example, in one instance, PO equate a “brain image” with a mere “network weight configuration.” POPR, 14 (“the network weight configuration [or brain image] ...”) (citing TESLA-1005, ¶[0090]). But this is PO’s own characterization, unsupported by evidence or the prior art itself. Paragraph [0090] of Buibas, for example (cited in the POPR), describes techniques for updating a robotic brain. While this paragraph refers to a “complete weight update,” Buibas also explains that updating the brain image can further involve merging, adding to, deleting from, and other modifications to the structure of the network or brain defined by the brain image. *See, e.g.*, TESLA-1005, ¶¶[0090]-[0127], FIGS. 3-5, 9. These disclosures confirm that brain images in Buibas are not a mere collection of

weights but rather also define a structure of the brain including relationships among neurons and inputs. TESLA-1005, ¶¶[0089]-[0090], [0123], [0179], [0183].

B. The Petition fails to address the full extent of the Petition’s mappings of Buibas to the claimed “knowledgebase”

By narrowing its focus to Buibas’ “brain image” and “weights,” the POPR seemingly ignores the related teachings from Buibas that the Petition mapped to the claimed “knowledgebase.” POPR, 13-16; Petition, 18-20. For example, as discussed in the Petition, Buibas’ “robotic brain” and “brain stem (bSTEM)” are also within Petitioner’s mapping of the claimed “knowledgebase.” Petition, 17-20, Footnote 3. The brain and brain stem are clearly not limited to a mere collection of “weights,” but further include entire neural networks and hardware components. TESLA-1005, ¶¶[0079], [0085], [0202]. As another example, the annotated versions of Buibas’ FIGS. 10 and 11B at pages 20 and 22 of the Petition further confirm that Petitioner’s mapping was not limited to “weights,” but rather encompassed the inputs, neurons, and network edges or interconnections that are also part of the structure of Buibas’ robotic brain.



Respectfully submitted,

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/Nicholas W. Stephens/

Nicholas Stephens, Reg. No. 74,320

Fish & Richardson P.C.

60 South Sixth Street, Suite 3200

Minneapolis, MN 55402

T: 202-783-5070

F: 877-769-7945

Attorneys for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on August 30, 2024, a complete and entire copy of this Petitioner's Reply to Patent Owner's Preliminary Response was provided by email to the Patent Owner by serving the correspondence address of record as follows:

Arvind Jairam
Scott W. Hejny
Stuart McCommas
George Fishback
MCKOOL SMITH, P.C.
1999 K St. NW, Suite 600
Washington, DC 20006

Email: Autonomous_IPRs@mckoolsmith.com

/Diana Bradley/
Diana Bradley
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
Tel: 858-678-5667