

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 CONTINGENT MOTION TO AMEND

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TABLE OF EXHIBITS

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
2008	Deposition transcript of Dr. Jason Janet dated March 19, 2024 in IPR2023-01169
2009	RESERVED
2010	RESERVED
2011	RESERVED
2012	American Heritage Dictionary (1992) Excerpts
2013	Webster's Third New International Dictionary (2002) Excerpts
2014	RESERVED
2015	Dr. Eli Saber CV

I. INTRODUCTION

Autonomous Devices, LLC (“PO”) submits this motion to amend the ’134 patent contingent on the outcome of this trial. In the event the Board finds any of original claims 2-5, 7, and 9-19 unpatentable, PO requests that the Board grant this motion to amend and issue the corresponding substitute claims presented herein.

II. STATEMENT OF REQUESTED RELIEF

First, PO requests preliminary guidance on this motion pursuant to the Board’s pilot program. *See Consolidated Trial Practice Guide* (Nov. 2019) at 67.

Second, to the extent the Board finds any of original claims 2-5, 7, and 9-19 unpatentable in this proceeding, PO respectfully requests that the Board grant this motion with respect to each corresponding substitute claim. The Board should not consider this motion for each of original claims 2-5, 7, and 9-19 found patentable.

III. THE SUBSTITUTE CLAIMS MEET ALL STATUTORY AND REGULATORY REQUIREMENTS OF 35 U.S.C. § 316 and 37 C.F.R. § 42.121

A motion to amend must (1) propose a reasonable number of substitute claims, (2) that respond to a ground of unpatentability involved in the trial (3) that do not enlarge the scope of the claims or introduce new matter, and (4) are not shown by a preponderance of the evidence to be unpatentable. *See Memorandum re: Guidance on Motions to Amend in view of Aqua Products* (Nov. 21, 2017) at 2; 35 U.S.C. § 316(d); 37 C.F.R. § 42.121. It is Petitioner’s burden to show that the substitute

claims are unpatentable. *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 4 (PTAB Feb. 25, 2019) (precedential) (“*Lectrosonics*”).

A. Listing of Proposed Substitute Claims.

PO submits substitute claims as shown in Appendix A (the “Substitute Claims”) as required by 37 C.F.R. § 42.121(b).

B. The Number of Substitute Claims is Reasonable.

“There is a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.” *Lectrosonics* at 4. In this proceeding, twenty claims are at issue. PO proposes sixteen substitute claims, which is reasonable (due to being fewer than the number of challenged claims) and thus satisfies 35 U.S.C. § 316(d)(1)(B) and 37 C.F.R. § 42.121(a)(3). *See Intuitive Surgical, Inc. v. Ethicon LLC*, IPR2018-00933, Paper 31 at 9 (PTAB Dec. 3, 2019); *see also Lectrosonics* at 45-46.

C. The Substitute Claims Respond to Patentability Grounds Involved in this Trial.

Proposed Substitute Claims 21-36 respond to the Petition’s grounds. For example, this motion proposes adding certain following limitations to those claims to distinguish them from Thomas (Ex. 1005) (regarding claims 2-5, 7, and 9-19 in Ground 1 of the Petition as to anticipation by Thomas, and claims 3, 5, and 12-14 in Ground 2 as to obviousness over Thomas); and from Buehler (Ex. 1006) (regarding claims 3 and 17 in Ground 3 as to anticipation by Buehler). This motion seeks to

amend those claims to address Petitioner’s arguments. *Compare* Petition (Paper 1) and Ex. 1001, *with* Appendix A (Proposed Substitute Claims). And these amendments directly overcome the asserted grounds.

D. The Substitute Claims Do Not Broaden the Claim Scope or Introduce New Subject Matter

“A motion to amend may not present substitute claims that enlarge the scope of the claims of the challenged patent or introduce new subject matter.” *Lectrosonics* at 6-8 (citing 35 U.S.C. § 316(d)(3); 37 C.F.R. § 41.121(a)(2)(ii)). PO’s proposed claims comply with both of these requirements.

1. The Substitute Claims Do Not Broaden Claim Scope

The proposed substitute claims retain all of their original features and only add narrowing elements as outlined in Section III.C above. The proposed amendments add limitations to independent claims 10 and 19, and rewrite each of dependent claims 2-5, 7, 9, and 11-18 in independent form, and further limit each of these claims by requiring that the first one or more object representations comprise first and second object representations that represent first and second three dimensional objects of the application, respectively, and that the first and second object representations include first and second data structures, respectively, and that the first data structure is generated at least in response to processing a type and a location of the first 3D object, and comprises a label indicating the processed type of the first 3D object, and a coordinate indicating the processed location of the first

3D object, wherein the first and second data structures are correlated with the first one or more instruction sets for operating the first avatar of the application. Each of these additions is made to further distinguish the claims over the prior art raised in the Petition and therefore narrows the claim scope in compliance with 37 C.F.R. § 42.12(a)(2)(ii). *See Lectrosonics* at 7 (noting that “a proposed substitute claim adding a novel and nonobvious feature or combination to avoid the prior art in an instituted ground of unpatentability will not enlarge the scope of the claims.”).

2. The Substitute Claims Do Not Introduce New Matter

As required by 37 C.F.R. § 42.121(b), the proposed substitute claims are supported by the original non-provisional application and thus do not introduce new subject matter as required by 37 C.F.R. § 42.121(a)(2)(ii). The '134 patent issued from U.S. Patent Application No. 15/382,743 (“the '743 Application”), which is found at pages 3-211 of Exhibit 1002.¹ For the purposes of this motion, PO identifies the following portions of the '743 Application as providing support for the proposed amendments. In addition, PO submits the declaration of Dr. Saber (Ex. 2007). These show that a person of ordinary skill in the art (“POSA”) would have understood, based on the disclosures of the '743 Application, that the inventor possessed the

¹ Citations to the '743 Application are to pages of the originally-filed specification or figures—e.g., '743 Application at [1:5-7] refers to Ex. 1002, 58:5-7.

Substitute Claims as of December 19, 2016, which is the earliest claimed priority date (the filing date of the '743 Application). Lastly, the written description of the '743 Application is sufficient to inform a POSA how to both make and use the invention as recited in the proposed Substitute Claims. Exemplary citations for each limitation of the Substitute Claims are summarized below (and detailed in the Declaration of Dr. Saber, *see* Ex. 2007, ¶¶ 141-142). The Substitute Claims add certain limitations to independent claims 10 and 19, and essentially rewrite claims 2-5, 7, 9, and 11-18 (each depends from claim 1) in independent form, so for convenience, support for claim 1 (whose limitations are now in the Substitute Claims corresponding to claims 2-5, 7, 9, and 11-18) is discussed below.

a) Support Regarding Limitations in Original Claim 1

The following features are in the Substitute Claims corresponding to claims 2-5, 7, 9, and 11-18 and are also in claim 1 (the base claim from which claims 2-5, 7, 9, and 11-18 depend), and Dr. Saber's testimony confirms that the inventor was in possession of these features (and each claim as a whole) at the time of filing the '743 Application. Ex. 2007, ¶ 142. The '743 App. discloses elements [21.pre]-[21.a] (*see* [Title], [Abstract], [Fig. 1], [1:25-26], [53:15-38]); discloses element [21.b] (*see* [Fig. 1], [15:28-30], [22:29-31]); discloses element [21.c] (*see* [Fig. 12], [91:1-13], [Figs. 13-15], [Fig. 30], [139:12-13], [Figs. 31-35], [Fig. 16], [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29]); discloses element [21.d] (*see*

[62:14-22], [147:33-35], [148:5-8], [Fig. 30], [140:3-3], [Fig. 31], [144:4-4], [Figs. 32-35], [Figs. 5A-5B], [73:27-29]); discloses element [21.e] (*see* [Fig. 36], [148:5-16], [Fig. 30], [140:33-34], [114:31-34], [114:38-115:4], [100:34-36], [101:12-13], [Fig. 31], [144:6-9], [88:35-39], [1:34-37], [Fig. 16]); and discloses element [21.f] (*see* [1:37-2:3], [16:25-29], [Fig. 30], [142:10-12], [143:17-18]).

b) Support Regarding Limitations in Original Claims 10 and 19

The following features are in Substitute Claims 34-35 (corresponding to claims 10 and 19), and Dr. Saber's testimony confirms that the inventor was in possession of these features (and Substitute Claims 34-35 as a whole) at the time of filing the '743 Application. Ex. 2007, ¶ 142.

Claim 10: The '743 Application discloses element [34.pre] (*see* [Title], [Abstract], [Fig. 1], [1:25-26], [53:15-38]); discloses "accessing a memory that stores at least a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application" (*see* [Fig. 1], [Fig. 12], [91:1-13], [Figs. 13-15], [Fig. 30], [139:12-13], [Figs. 31-35], [Fig. 16]); discloses "wherein the first one or more object representations represent one or more objects of the application" (*see* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29]); discloses element [34.b] ([62:14-22], [147:33-35], [148:5-8], [Fig. 30], [140:3-3], [Fig. 31], [144:4-4], [Figs. 32-35], [Figs. 5A-5B], [73:27-29]); discloses element [34.c] (*see* [Fig. 36], [148:5-

[16], [Fig. 30], [140:33-34], [114:31-34], [114:38-115:4], [100:34-36], [101:12-13], [Fig. 31], [144:6-9], [88:35-39], [1:34-37], [Fig. 16]); and discloses element [34.d] (*see* [1:37-2:3], [16:25-29], [Fig. 30], [142:10-12], [143:17-18]).

Claim 19: The '743 Application discloses elements [35.pre] (*see* [Title], [Abstract], [Fig. 1]); discloses “a memory that stores at least a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application” (*see* [Fig. 12], [91:1-13], [Figs. 13-15], [Fig. 30], [139:12-13], [Figs. 31-35], [Fig. 16]); discloses “wherein the first one or more object representations represent one or more objects of the application” (*see* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29]); discloses element [35.b] (*see* [Fig. 1], [1:25-26], [53:15-38], [62:14-22], [147:33-35], [148:5-8], [Fig. 30], [140:3-3], [Fig. 31], [144:4-4], [Figs. 32-35], [Figs. 5A-5B], [73:27-29]); discloses element [35.c] (*see* [Fig. 1], [1:25-26], [53:15-38], [Fig. 36], [148:5-16], [Fig. 30], [140:33-34], [114:31-34], [114:38-115:4], [100:34-36], [101:12-13], [Fig. 31], [144:6-9], [88:35-39], [1:34-37], [Fig. 16]); discloses element [35.d] (*see* [Fig. 1], [1:25-26], [53:15-38], [1:37-2:3], [16:25-29], [Fig. 30], [142:10-12], [143:17-18]).

c) Support Regarding Limitations in Original Claims 2-5, 7, 9, and 11-18

The following features are in the Substitute Claims corresponding to claims 2-5, 7, 9, and 11-18, and are also in issued claims 2-5, 7, 9, and 11-18 (prior to this

amendment), and Dr. Saber's testimony confirms that the inventor was in possession of these features (and the claims as a whole) at the time of filing the '743 Application. Ex. 2007, ¶ 142.

Substitute Claim 21: The '743 Application discloses element [21.g] (*see* [8:25-27], [102:3-9]).

Substitute Claim 22: The '743 Application discloses “wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating: the first avatar of the application, the second avatar of the application, a third avatar of the application, or an avatar of another application.” *See* [Fig. 12], [91:1-13], [Figs. 13-15], [139:13-16], [87:34-88:8], [148:23-32], [Fig. 39 – “first avatar of application”: Ship 605c1], [Fig. 39 – “second avatar of the application”: Ship 605c2], [Fig. 39 – “third avatar of the application”: Ship 605c3], [152:1-2], [152:14-29], [Fig. 36 – “avatar of first application”: Soldier 605a of Computer Game 18a], [147:32-148:5], [Fig. 37 – “avatar of another application”: Tank 605b of Computer Game 18b], [150:18-31], [Fig. 16].

The '743 Application discloses “and wherein the third one or more object representations represent one or more objects of: the application, or the another application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-

29], [87:34-88:8], [148:23-32], [Fig. 36 – “objects of first application”: Opponent 615aa, Dog 615ab, and Pedestrian 615ac of Computer Game 18a], [147:32-148:5], [Fig. 37 – “objects of another application”: Helicopter 615ba, Rocket Launcher 615bb, Communication Center 615bc, and Tank 615bd of Computer Game 18b], [150:18-31].

The ’743 Application discloses “and wherein the first correlation is connected with the third correlation by a connection.” *See* [94:37-39], [Fig. 17A-17C], [97:5-6], [Fig. 21], [14:21-27].

Substitute Claim 23: The ’743 Application discloses element [23.g]. *See* [1:37-2:3], [16:27-29], [Fig. 30], [143:17-18], [87:34-88:8], [148:23-32], [Fig. 39 – “first avatar of application”: Ship 605c1], [Fig. 39 – “second avatar of the application”: Ship 605c2], [152:1-2], [152:32-35].

Substitute Claim 24: The ’743 Application discloses element [24.g]. *See* [91:14-92:4], [4:1-16], [138:24-25].

Substitute Claim 25: The ’743 Application discloses element [25.g]. *See* [Fig. 12], [90:19-23], [91:1-13], [Figs. 13-15], [Fig. 30], [138:37-39], [Figs. 31-35], [Fig. 16].

Substitute Claim 26: The ’743 Application discloses “wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with

a third one or more instruction sets for operating the first avatar of the application.”

See [Fig. 12], [91:1-13], [Figs. 13-15], [139:13-15], [Fig. 16].

The '743 Application discloses “and wherein the third one or more object representations represent one or more objects of the application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29].

The '743 Application discloses “and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user.” *See* [Fig. 31], [143:28-31], [144:1-2], [Fig. 36], [147:38-148:2].

The '743 Application discloses “and wherein at least a portion of the third correlation is learned in another learning process that includes operating the first avatar of the application at least partially by the user, and wherein the user is: a human user, or a non-human user.” *See* [14:12-16], [61:23-35], [Fig. 36], [147:38-148:2], [Fig. 30 – “learning process”], [135:22-25], [Fig. 31 – “another learning process”], [143:28-31], [Fig. 21 – “learning process”], [Fig. 22 – “another learning process”].

Substitute Claim 27: The '743 Application discloses “wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with

a third one or more instruction sets for operating the first avatar of the application.”

See [Fig. 12], [91:1-13], [Figs. 13-15], [139:13-15], [Fig. 16].

The '743 Application discloses “and wherein the third one or more object representations represent one or more objects of the application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29].

The '743 Application discloses “and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user.” *See* [Fig. 31], [143:28-31], [144:1-2], [Fig. 36], [147:38-148:2].

The '743 Application discloses “and wherein at least a portion of the third correlation is learned in another learning process that includes operating the first avatar of the application at least partially by another user, and wherein the user is: a human user, or a non-human user, and wherein the another user is: a human user, or a non-human user.” *See* [Fig. 31], [144:1-2], [Fig. 36], [147:38-148:2], [14:12-16], [61:23-35], [Fig. 30 – “learning process”], [135:22-25], [Fig. 31 – “another learning process”], [143:28-31], [Fig. 21 – “learning process”], [Fig. 22 – “another learning process”], [88:4-8], [148:27-32].

Substitute Claim 28: The '743 Application discloses “wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with

a third one or more instruction sets for operating a third avatar of the application.”

See [Fig. 12], [91:1-13], [Figs. 13-15], [139:13-15], [Fig. 39 – “first avatar of application”: Ship 605c1], [Fig. 39 – “third avatar of the application”: Ship 605c2], [152:1-2], [152:14-29], [87:34-88:8], [148:23-32], [Fig. 16].

The '743 Application discloses “and wherein the third one or more object representations represent one or more objects of the application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29].

The '743 Application discloses “and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user.” *See* [Fig. 31], [143:28-31], [144:1-2], [Fig. 36], [147:38-148:2].

The '743 Application discloses “and wherein at least a portion of the third correlation is learned in another learning process that includes operating the third avatar of the application at least partially by: the user, or another user, and wherein the user is: a human user, or a non-human user, and wherein the another user is: a human user, or a non-human user.” *See* [Fig. 31], [144:1-2], [Fig. 36], [147:38-148:2], [14:12-16], [61:23-35], [Fig. 30 – “learning process”], [135:22-25], [Fig. 31 – “another learning process”], [143:28-31], [Fig. 21 – “learning process”], [Fig. 22 – “another learning process”], [Fig. 39 – “first avatar of application”: Ship

605c1], [Fig. 39 – “third avatar of the application”: Ship 605c2], [152:1-2], [152:14-29], [87:34-88:8], [148:23-32].

Substitute Claim 29: The '743 Application discloses “wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating an avatar of another application.” *See* [Fig. 12], [91:1-13], [Figs. 13-15], [139:13-16], [87:34-88:8], [148:23-32], [Fig. 36 – “avatar of first application”: Soldier 605a of Computer Game 18a], [147:32-148:5], [Fig. 37 – “avatar of another application”: Tank 605b of Computer Game 18b], [150:18-31], [Fig. 16].

The '743 Application discloses “and wherein the third one or more object representations represent one or more objects of the another application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-34], [1:27-29], [87:34-88:8], [148:23-32], [Fig. 36 – “objects of first application”: Opponent 615aa, Dog 615ab, and Pedestrian 615ac of Computer Game 18a], [147:32-148:5], [Fig. 37 – “objects of another application”: Helicopter 615ba, Rocket Launcher 615bb, Communication Center 615bc, and Tank 615bd of Computer Game 18b], [150:18-31].

Substitute Claim 30: The '743 Application discloses element [30.g]. *See* [4:24-27], [85:37-86:2].

Substitute Claim 31: The '743 Application discloses element [31.g]. *See* [Figs. 2-4 and 9-11 – modification interface 130], [127:26-32], [75:13-14], [10:20-23], [74:20-22], [89:9-10].

Substitute Claim 32: The '743 Application discloses elements [32.g]-[32.h] (*see* [10:20-23], [74:20-22], [142:29-30], [Figs. 2-4 and 9-11 – modification interface 130], [127:11-12], [89:9-10]); and discloses elements [32.i]-[32.j] (*see* [132:32-34], [134:22-22], [1:37-2:3], [16:25-29], [Fig. 31], [144:10-15]).

Substitute Claim 33: The '743 Application discloses elements [33.g]-[33.h] (*see* [Fig. 31], [143:28-31], [144:1-2], [Fig. 36], [147:38-148:2], [61:23-35]); discloses element [33.i] (*see* [62:14-22], [147:33-35], [Fig. 30], [135:29-29], [Figs. 31-35], [Figs. 5A-5B], [73:27-29]); and discloses element [33.j] (*see* [Figs. 30-32], [137:22-22], [1:29-30], [Figs. 12-15], [90:32-33], [77:1-4]).

Substitute Claim 36: The '743 Application discloses element [36.g]. *See* [62:14-63:8], [Fig. 30], [135:29-136:23], [Fig. 32], [144:23-23], [Fig. 14], [92:22-34], [Figs. 5A-5B], [73:27-29].

d) Support Regarding Added Limitations Common to Each Substitute Claim

The following features are additions to each Substitute Claim, and Dr. Saber's testimony confirms that the inventor was in possession of these features (and each claim as a whole) at the time of filing the '743 Application. Ex. 2007, ¶ 142. The '743 Application discloses “wherein the first one or more object representations

comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-31], [Fig. 36 – “first 3D object of application”: Opponent 615aa], [Fig. 36 – “second 3D object of the application”: Dog 615ab], [147:25-26], [147:32-35], [63:12-20], [Figs. 2, 31, 36 – overall system].

The ’743 Application discloses “wherein the first object representation includes a first data structure that: is generated at least in response to processing a type and a location of the first 3D object.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [62:9-11], [64:8-9], [Fig. 36 – “first 3D object of application”: Opponent 615aa], [147:32-35], [63:33-37], [136:34-38], [64:15-19], [64:33-38].

The ’743 Application discloses “and comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object.” *See* [63:33-37], [136:34-38], [Fig. 5B], [73:27-36], [64:15-19], [64:33-38].

The ’743 Application discloses “and wherein the second object representation includes a second data structure.” *See* [62:14-22], [Figs. 5A-5B], [73:27-29], [135:29-31].

The ’743 Application discloses “and wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for

operating the first avatar of the application.” *See* [Fig. 12], [91:1-13], [Figs. 13-15], [Fig. 30], [139:13-15], [Figs. 31-35], [Fig. 16].

IV. THE LEVEL OF ORDINARY SKILL IN THE ART

In this motion, as in the concurrently-filed PO Response, PO and its expert adopt Petitioner’s description of the level of skill of a POSA: at least: (1) a bachelor’s degree in electrical engineering, computer engineering, computer science, systems engineering, or equivalent course work with two to three years of work experience in computer vision, image/video processing, and/or machine learning; or (2) a master’s degree in electrical engineering, computer engineering, computer science, systems engineering, or equivalent course work with a focus in computer vision, image/video processing, and/or machine learning. *See* Ex. 2007, ¶ 45.

V. THE SCOPE AND CONTENT OF THE PRIOR ART

The Petition does not rely on any of the references cited during the original prosecution, and instead relies on grounds involving Thomas or Buehler. PO presumes that Petitioner has set forth what it believed to be the closest prior art in its Petition. As no prior art of record from the original prosecution of the ’743 Application is cited by Petitioner as a basis for unpatentability in this IPR proceeding, it is undisputed that such prosecution-related prior art of record does not disclose or suggest the elements of the originally issued claims (as confirmed by the USPTO’s issuance of the ’134 patent over that prior art). Similarly, no prior art of record (e.g.,

Thomas/Buehler) describes or suggests the additional elements recited in the Substitute Claims, as described below.

VI. CLAIM CONSTRUCTION

Under 37 C.F.R. § 42.100, claim terms should be given “their ordinary and customary meaning” as would be understood by a POSA in question at the time of the invention, in light of the claim language, the specification, and the prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). In this motion, PO applies the ordinary and customary meaning of the claim terms of the proposed substitute claims. Ex. 2007, ¶¶ 53, 142. The concurrently-filed PO Response provides a construction for one term (“connection”) in claim 4, and that term appears in amended claim 22, and also notes “means” plus function language in claim 19, that appears in amended claim 35. The Board, however, only construes the claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11 at 16 (Aug. 14, 2015). At this stage, construction of “connection” in claim 22 and the “means” terms in claim 35 is unnecessary because those term do not appear in the added limitations and so there is not a dispute for those terms in the amended claims.

VII. THE SUBSTITUTE CLAIMS ARE PATENTABLE OVER THE ART

Although PO does not bear the burden of persuasion or production regarding the patentability of the substitute claims, PO nevertheless sets forth reasons why the

art does not teach or suggest the amended subject matter. *Aqua Products, Inc. v. Matal*, 872 F.3d 1290, 1296 (Fed. Cir. 2017). This motion and Dr. Saber's declaration (Ex. 2007, ¶¶ 145-155) provide support.

A. Independent Substitute Claims 21-36 Are Patentable Over the Instituted Art in this Proceeding.

Claim 21 (substitute for claim 3): Claim 21 further narrows claim 3, as discussed above in Section III. For claim 3, the Petition relies on anticipation by Thomas in Ground 1, mapping Thomas' spatial position of an avatar and virtual weather/road conditions to the claimed "first one or more object representations" in base claim 1, from which claim 3 depends. Pet., 3, 12-13. And the Petition relies on anticipation by Buehler in Ground 3, mapping Buehler's template images and stored representations to the claimed "first one or more object representations" in claim 1. *Id.*, 56-57. But neither Thomas nor Buehler discloses, by such aforementioned disclosures or any other disclosure, all the features added via amendment—e.g., the first one or more object representations comprising first and second object representations representing first and second 3D objects, respectively, of the application, wherein (i) the first object representation include a first data structure comprising a label and coordinate as claimed, and the second object representation includes a second data structure, **AND** (ii) the data structures are correlated with instruction sets, **AND** (iii) the first data structure is generated in the claimed manner, as recited in claim 21. Ex. 2007, ¶¶ 146-151.

Indeed, neither Thomas nor Buehler discloses object representations representing 3D objects at all. *Id.*, ¶¶ 146-147, 149-150. Furthermore, regarding (i) and (iii), Thomas does not disclose that the first object representation includes a first data structure generated at least in response to processing a type and a location of the first 3D object, and comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object. *Id.*, ¶¶ 146-147. Even if Thomas' spatial position of an avatar or virtual weather/road conditions are mapped to the claimed "object representations," Thomas does not disclose that one of those object representations includes a first ***data structure*** generated in the claimed manner. *Id.*, ¶¶ 146-148. Petitioner has also not established that Thomas discloses that such a data structure is generated at least in response to processing a type and a label of the first 3D object, and comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object. *Id.*, ¶ 147. Further, Thomas does not disclose a ***second*** object representation including a ***second*** data structure as claimed. *Id.*, ¶¶ 146-148. Additionally, regarding (ii), given that Thomas does not disclose the claimed first and second data structures, Thomas also does not disclose the first and second data structures are ***correlated with*** Thomas's pressed button, combination of buttons, or joystick move of controller ("first one or more instruction sets," *see* Pet., 13-14). Ex. 2007, ¶¶ 146-148.

Similarly, regarding (i) and (iii), Buehler does not disclose that the first object representation includes a first data structure generated at least in response to processing a type and a location of the first 3D object, and comprises a label indicating the processed type of the first 3D object, and a coordinate indicating the processed location of the first 3D object. *Id.*, ¶¶ 149-150. Even if Buehler’s template images are mapped to the claimed “object representations,” Buehler does not disclose that one of those object representations includes a first ***data structure*** generated in the claimed manner. *Id.*, ¶¶ 149-151. Petitioner has also not established that Buehler discloses that such a data structure is generated at least in response to processing a type and a label of the first 3D object, and comprises a label indicating the processed type of the first 3D object, and a coordinate indicating the processed location of the first 3D object. *Id.*, ¶ 150. Further, Buehler does not disclose a ***second*** object representation including a ***second*** data structure as claimed. *Id.*, ¶¶ 149-151. Additionally, regarding (ii), given that Buehler does not disclose the claimed first and second data structures, Buehler also does not disclose the first and second data structures are ***correlated with*** Buehler’s routines for picking up an object (“first one or more instruction sets,” *see* Pet., 56-57). Ex. 2007, ¶¶ 141-151.

Neither Thomas nor Buehler renders claim 21 obvious because neither of these references discloses or suggests all the elements of the claim in their claimed configuration. Ex. 2007, ¶¶ 152-153. Further, a POSA would not have been

motivated or found it predictable to modify Thomas' system or Buehler's system to arrive at claim 21. For obviousness, the Board must consider the prior art reference(s) and what would have been predictable from the standpoint of a POSA reading the reference(s). Nothing in Thomas, or in Buehler, shows or suggests a modification of Thomas' system, or Buehler's system, to arrive at the amended claim. It would be impermissible hindsight to conclude that Thomas or Buehler would have been predictably modified to arrive at the amended claim.

Claims 22-33 and 36 (substitutes for claims 4, 5, 7, 9, and 11-18, and 2):

Claims 22-33 and 36 further narrow respective claims 4, 5, 7, 9, 11-18, and 2. As discussed in Section III, the amendments limit these claims by adding the same limitations that are also added to claim 21. Therefore, for the reasons discussed above regarding claim 21, neither Thomas nor Buehler discloses all the limitations of claims 22-33 and 36. Ex. 2007, ¶¶ 152-153. As to the grounds presented in the Petition, Thomas does not disclose all the limitations of claims 22-33 and 36 (relevant to Ground 1); Thomas does not disclose or suggest all the limitations of claims 23 and 27-29 (relevant to Ground 2); and Buehler does not disclose all the limitations of claim 32 (relevant to Ground 3). Pet., 4; Ex. 2007, ¶¶ 152-155. And a POSA would not have been motivated or found it predictable to modify Thomas' system or Buehler's system to arrive at claims 22-33 and 36. *Id.*

Claims 34 and 35 (substitute for claims 10/19): Claims 34 and 35 are method and means-plus-function versions of claim 1 with the added limitations discussed above (in Section III) regarding claim 21. Therefore, for the reasons discussed above regarding claim 21, neither Thomas nor Buehler discloses all the limitations of claims 34-35. Ex. 2007, ¶¶ 154-155. And a POSA would not have been motivated or found it predictable to modify Thomas' process/system or Buehler's process/system to arrive at claims 34-35. *Id.*

B. Independent Substitute Claims 21-36 Are Patentable Over the Art of Record From Prosecution.

As noted in Section V, PO presumes Petitioner has set forth in the Petition what it believed to be the closest prior art, and that does not include any prior art of record from prosecution. The original claims were allowed by the Examiner, and the Examiner specifically noted certain references but stated that “none of the prior art of record teaches all of the details of the object representations, avatars, determining instruction sets, and causing an avatar to perform the operations as recited by each of the independent claims.” Ex. 1002, 331. The amended (substitute) claims that further narrow the original claims are also patentable over art from original prosecution. Ex. 2007, ¶ 139.

C. Independent Substitute Claims 21-36 Are Patentable Over the Art at Issue in Other IPR Petitions.

The Substitute Claims are also patentable over all prior art identified in the petitions in IPR2023-{01054, 01055, 01172, 01173}, which are other proceedings challenging patents owned by PO. The prior art references in those proceedings do not disclose or suggest all the limitations of amended claims 21-36. Ex. 2007, ¶ 139. By way of example, none of the prior art references cited by Petitioner in those proceedings disclose or suggest the added limitations regarding the first and second object representations including first/second data structures, with the first data structure including the claimed label and coordinate, and with the first and second data structures correlated with instruction sets, and with the first data structure generated in the claimed manner, as recited in claims 21-36. To the extent Petitioner disagrees, and given it is Petitioner's burden, PO will respond at the appropriate time.

VIII. CONCLUSION

For each original claim among claims 2-5, 7, and 9-19 the Board finds unpatentable, PO requests the Board grant this contingent motion to amend as to the corresponding substitute claim.

Date: April 1, 2024

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S CONTINGENT MOTION TO AMEND** complies with the page limits of § 42.24(a) because it does not contain more than 25 pages. This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and the type style requirements of 37 C.F.R. § 42.6(a)(2)(iii) and (iv).

Dated: April 1, 2024

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the foregoing **PATENT OWNER'S CONTINGENT MOTION TO AMEND** and supporting exhibits have been served on Petitioner via email on the following counsel of record for Petitioner:

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APPENDIX A – SUBSTITUTE CLAIMS

Claim 21 (Proposed substitute for claim 3, if found unpatentable)

[21.pre]A system comprising:

[21.a]one or more processors; and

[21.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[21.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[21.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[21.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[21.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations

defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[21.g]wherein the determining the first one or more instruction sets for operating the first avatar of the application based on the at least partial match between the second one or more object representations and the first one or more object representations includes: determining that a number of at least partially matching portions of the second one or more object representations and portions of the first one or more object representations exceeds a threshold number, or determining that a percentage of at least partially matching portions of the second one or more object representations and portions of the first one or more object representations exceeds a threshold percentage;

[21.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[21.i]wherein the first object representation includes a first data structure that:

[21.j]is generated at least in response to processing a type and a location of the first 3D object, and

[21.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[21.l]wherein the second object representation includes a second data structure, and

[21.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 22 (Proposed substitute for claim 4, if found unpatentable)

[22.pre]A system comprising:

[22.a]one or more processors; and

[22.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[22.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[22.d]generating or receiving a second one or more object representations,

wherein the second one or more object representations represent one or more objects of the application;

[22.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[22.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[22.g]wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating: the first avatar of the application, the second avatar of the application, a third avatar of the application, or an avatar of another application, and wherein the third one or more object representations represent one or more objects of: the application, or the another application, and wherein the first correlation is connected with the third correlation by a connection;

[22.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the

application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[22.i]wherein the first object representation includes a first data structure that:

[22.j]is generated at least in response to processing a type and a location of the first 3D object, and

[22.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[22.l]wherein the second object representation includes a second data structure, and

[22.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 23 (Proposed substitute for claim 5, if found unpatentable)

[23.pre]A system comprising:

[23.a]one or more processors; and

[23.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or

more processors to perform at least:

[23.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[23.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[23.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[23.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[23.g]wherein the second avatar of the application performs the one or more operations defined by the first one or more instruction sets for operating the first avatar of the application;

[23.h]wherein the first one or more object representations comprise: a first

object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[23.i]wherein the first object representation includes a first data structure that:

[23.j]is generated at least in response to processing a type and a location of the first 3D object, and

[23.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[23.l]wherein the second object representation includes a second data structure, and

[23.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 24 (Proposed substitute for claim 7, if found unpatentable)

[24.pre]A system comprising:

[24.a]one or more processors; and

[24.b]one or more non-transitory machine readable media storing machine

readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[24.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[24.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[24.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[24.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[24.g]wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first avatar of the application, a 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;

[24.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[24.i]wherein the first object representation includes a first data structure that:

[24.j]is generated at least in response to processing a type and a location of the first 3D object, and

[24.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[24.l]wherein the second object representation includes a second data structure, and

[24.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 25 (Proposed substitute for claim 9, if found unpatentable)

[25.pre]A system comprising:

[25.a]one or more processors; and

[25.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[25.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[25.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[25.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[25.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[25.g]wherein the first correlation is included in a first knowledge cell, and wherein the first knowledge cell is a data structure for storing, structuring, or organizing the first correlation;

[25.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[25.i]wherein the first object representation includes a first data structure that:

[25.j]is generated at least in response to processing a type and a location of the first 3D object, and

[25.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[25.l]wherein the second object representation includes a second data structure, and

[25.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 26 (Proposed substitute for claim 11, if found unpatentable)

[26.pre]A system comprising:

[26.a]one or more processors; and

[26.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[26.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[26.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[26.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[26.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating

the first avatar of the application;

[26.g]wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first avatar of the application, and wherein the third one or more object representations represent one or more objects of the application, and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user, and wherein at least a portion of the third correlation is learned in another learning process that includes operating the first avatar of the application at least partially by the user, and wherein the user is: a human user, or a non-human user;

[26.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[26.i]wherein the first object representation includes a first data structure that:

[26.j]is generated at least in response to processing a type and a location of the first 3D object, and

[26.k]comprises a label indicating the processed type of the first 3D

object and a coordinate indicating the processed location of the first 3D
object, and

[26.l]wherein the second object representation includes a second data
structure, and

[26.m]wherein the first data structure and the second data structure are
correlated with the first one or more instruction sets for operating the first avatar of
the application.

Claim 27 (Proposed substitute for claim 12, if found unpatentable)

[27.pre]A system comprising:

[27.a]one or more processors; and

[27.b]one or more non-transitory machine readable media storing machine
readable code that, when executed by the one or more processors, causes the one or
more processors to perform at least:

[27.c]accessing a first correlation including a first one or more object
representations correlated with a first one or more instruction sets for operating a
first avatar of an application, wherein the first one or more object representations
represent one or more objects of the application;

[27.d]generating or receiving a second one or more object representations,
wherein the second one or more object representations represent one or more

objects of the application;

[27.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[27.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[27.g]wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first avatar of the application, and wherein the third one or more object representations represent one or more objects of the application, and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user, and wherein at least a portion of the third correlation is learned in another learning process that includes operating the first avatar of the application at least partially by another user, and wherein the user is: a human user, or a non-human user, and wherein the another user is: a human user, or a non-human user;

[27.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[27.i]wherein the first object representation includes a first data structure that:

[27.j]is generated at least in response to processing a type and a location of the first 3D object, and

[27.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[27.l]wherein the second object representation includes a second data structure, and

[27.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 28 (Proposed substitute for claim 13, if found unpatentable)

[28.pre]A system comprising:

[28.a]one or more processors; and

[28.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[28.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[28.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[28.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[28.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[28.g]wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third

one or more object representations correlated with a third one or more instruction sets for operating a third avatar of the application, and wherein the third one or more object representations represent one or more objects of the application, and wherein at least a portion of the first correlation is learned in a learning process that includes operating the first avatar of the application at least partially by a user, and wherein at least a portion of the third correlation is learned in another learning process that includes operating the third avatar of the application at least partially by: the user, or another user, and wherein the user is: a human user, or a non-human user, and wherein the another user is: a human user, or a non-human user;

[28.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[28.i]wherein the first object representation includes a first data structure that:

[28.j]is generated at least in response to processing a type and a location of the first 3D object, and

[28.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[28.l]wherein the second object representation includes a second data structure, and

[28.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 29 (Proposed substitute for claim 14, if found unpatentable)

[29.pre]A system comprising:

[29.a]one or more processors; and

[29.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[29.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[29.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[29.e]determining the first one or more instruction sets for operating the first

avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[29.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[29.g]wherein the first correlation is included in a knowledgebase, and wherein the knowledgebase further includes a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating an avatar of another application, and wherein the third one or more object representations represent one or more objects of the another application;

[29.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[29.i]wherein the first object representation includes a first data structure that:

[29.j]is generated at least in response to processing a type and a

location of the first 3D object, and

[29.k]comprises a label indicating the processed type of the first 3D
object and a coordinate indicating the processed location of the first 3D
object, and

[29.l]wherein the second object representation includes a second data
structure, and

[29.m]wherein the first data structure and the second data structure are
correlated with the first one or more instruction sets for operating the first avatar of
the application.

Claim 30 (Proposed substitute for claim 15, if found unpatentable)

[30.pre]A system comprising:

[30.a]one or more processors; and

[30.b]one or more non-transitory machine readable media storing machine
readable code that, when executed by the one or more processors, causes the one or
more processors to perform at least:

[30.c]accessing a first correlation including a first one or more object
representations correlated with a first one or more instruction sets for operating a
first avatar of an application, wherein the first one or more object representations
represent one or more objects of the application;

[30.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[30.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[30.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[30.g]wherein the first one or more instruction sets for operating the first avatar of the application include one or more information about one or more states of: the first avatar of the application or a portion of the first avatar of the application;

[30.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[30.i]wherein the first object representation includes a first data structure

that:

[30.i]is generated at least in response to processing a type and a location of the first 3D object, and

[30.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[30.l]wherein the second object representation includes a second data structure, and

[30.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 31 (Proposed substitute for claim 16, if found unpatentable)

[31.pre]A system comprising:

[31.a]one or more processors; and

[31.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[31.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a

first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[31.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[31.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[31.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[31.g]wherein: an element of the first correlation is deleted after the first correlation is generated, an element of the first correlation is modified after the first correlation is generated, an element of the first correlation is manipulated after the first correlation is generated, or an element is inserted into the first correlation after the first correlation is generated;

[31.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the

application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[31.i]wherein the first object representation includes a first data structure that:

[31.j]is generated at least in response to processing a type and a location of the first 3D object, and

[31.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[31.l]wherein the second object representation includes a second data structure, and

[31.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 32 (Proposed substitute for claim 17, if found unpatentable)

[32.pre]A system comprising:

[32.a]one or more processors; and

[32.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or

more processors to perform at least:

[32.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[32.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[32.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[32.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[32.g]wherein the machine readable code, when executed by the one or more processors, causes the one or more processors to further perform at least:

[32.h]modifying: the first one or more instruction sets for operating the first avatar of the application, or a copy of the first one or more instruction sets for

operating the first avatar of the application, and

[32.i]wherein the executing the first one or more instruction sets for operating the first avatar of the application includes executing: the modified the first one or more instruction sets for operating the first avatar of the application, or the modified the copy of the first one or more instruction sets for operating the first avatar of the application, and

[32.j]wherein the performing, by the first avatar of the application or by the second avatar of the application, the one or more operations defined by the first one or more instruction sets for operating the first avatar of the application includes 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 for operating the first avatar of the application, or the modified the copy of the first one or more instruction sets for operating the first avatar of the application;

[32.k]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[32.l]wherein the first object representation includes a first data structure that:

[32.m]is generated at least in response to processing a type and a location of the first 3D object, and

[32.n]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[32.o]wherein the second object representation includes a second data structure, and

[32.p]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 33 (Proposed substitute for claim 18, if found unpatentable)

[33.pre]A system comprising:

[33.a]one or more processors; and

[33.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[33.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations

represent one or more objects of the application;

[33.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[33.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[33.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[33.g]wherein at least a portion of the first correlation is learned in a learning process that includes:

[33.h]operating the first avatar of the application at least partially by: a human user, or a non-human user;

[33.i]generating or receiving the first one or more object representations; and

[33.j]obtaining or receiving the first one or more instruction sets for operating the first avatar of the application;

[33.k]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[33.l]wherein the first object representation includes a first data structure that:

[33.m]is generated at least in response to processing a type and a location of the first 3D object, and

[33.n]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[33.o]wherein the second object representation includes a second data structure, and

[33.p]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 34 (Proposed substitute for claim 10, if found unpatentable)

[34.pre]A method implemented using a computing system that includes one or more processors, the method comprising:

[34.a]accessing a memory that stores at least a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[34.b]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[34.c]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[34.d]at least in response to the determining, executing the first one or more instruction sets for operating the first avatar of the application, wherein the first avatar of the application or a second avatar of the application performs one or more operations defined by the first one or more instruction sets for operating the first avatar of the application;

[34.e]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[34.f]wherein the first object representation includes a first data structure

that:

[34.g]is generated at least in response to processing a type and a location of the first 3D object, and

[34.h]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[34.i]wherein the second object representation includes a second data structure, and

[34.j]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 35 (Proposed substitute for claim 19, if found unpatentable)

[35.pre]A system comprising:

[35.a]a memory that stores at least a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[35.b]means for generating or receiving a second one or more object representations, wherein the second one or more object representations represent

one or more objects of the application;

[35.c]means for determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[35.d]means for executing, at least in response to the determining, the first one or more instruction sets for operating the first avatar of the application, wherein the first avatar of the application or a second avatar of the application performs one or more operations defined by the first one or more instruction sets for operating the first avatar of the application;

[35.e]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[35.f]wherein the first object representation includes a first data structure that:

[35.g]is generated at least in response to processing a type and a location of the first 3D object, and

[35.h]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D

object, and

[35.i]wherein the second object representation includes a second data structure, and

[35.j]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.

Claim 36 (Proposed substitute for claim 2, if found unpatentable)

[36.pre]A system comprising:

[36.a]one or more processors; and

[36.b]one or more non-transitory machine readable media storing machine readable code that, when executed by the one or more processors, causes the one or more processors to perform at least:

[36.c]accessing a first correlation including a first one or more object representations correlated with a first one or more instruction sets for operating a first avatar of an application, wherein the first one or more object representations represent one or more objects of the application;

[36.d]generating or receiving a second one or more object representations, wherein the second one or more object representations represent one or more objects of the application;

[36.e]determining the first one or more instruction sets for operating the first avatar of the application based on at least partial match between the second one or more object representations and the first one or more object representations; and

[36.f]at least in response to the determining, causing the first avatar of the application or a second avatar of the application to perform one or more operations defined by the first one or more instruction sets for operating the first avatar of the application at least by executing the first one or more instruction sets for operating the first avatar of the application;

[36.g]wherein the first one or more object representations include: one object representation, a stream of object representations, a collection of object representations, or a stream of collections of object representations, and wherein the second one or more object representations include: one object representation, a stream of object representations, a collection of object representations, or a stream of collections of object representations, and wherein the one or more objects of the application represented by the first one or more object representations are detected at a first time or during a first time period, and wherein the one or more objects of the application represented by the second one or more object representations are detected at a second time or during a second time period;

[36.h]wherein the first one or more object representations comprise: a first object representation that represents a first three dimensional (3D) object of the

application, and a second object representation that represents a second three dimensional (3D) object of the application, and

[36.i]wherein the first object representation includes a first data structure that:

[36.j]is generated at least in response to processing a type and a location of the first 3D object, and

[36.k]comprises a label indicating the processed type of the first 3D object and a coordinate indicating the processed location of the first 3D object, and

[36.l]wherein the second object representation includes a second data structure, and

[36.m]wherein the first data structure and the second data structure are correlated with the first one or more instruction sets for operating the first avatar of the application.