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Paper 20
Date: December 13, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TESLA, INC.,
Petitioner,

v.

AUTONOMOUS DEVICES, LLC,
Patent Owner.

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IPR2023-01054
Patent 10,452,974 B1

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Before BARBARA A. PARVIS, ROBERT J. WEINSCHENK, and RUSSELL E. CASS, *Administrative Patent Judges.*

CASS, *Administrative Patent Judge.*

# DECISION
Granting Institution of *Inter Partes* Review
*35 U.S.C. § 314*

## I. INTRODUCTION

Tesla, Inc. ("Petitioner") filed a Petition (Paper 1 ("Pet.")) requesting *inter partes* review of claims 1–20 of U.S. Patent No. 10,452,974 B1 (Ex. 1001, "the '974 patent"). Autonomous Devices, LLC ("Patent Owner") filed a Preliminary Response. Paper 11 ("Prelim. Resp."). In its Preliminary Response, Patent Owner states that it has disclaimed claims 1–3, 6, 8–10, 12–13, and 16–20 of the '974 patent. *Id.* at 1 (citing Ex. 2004; 37 C.F.R. § 42.107(e)). In light of the disclaimer, only claims 4–5, 7, 11, and 14–15 (the "challenged claims") of the '974 patent remain at issue in this proceeding. With authorization, Petitioner filed a Preliminary Reply (Paper 12 ("Prelim. Reply")), and Patent Owner filed a Preliminary Sur-reply. Paper 13 ("Prelim. Sur-reply").

We have authority to determine whether to institute review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that "the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a).

Upon consideration of the contentions and the evidence of record at this preliminary stage, we conclude Petitioner establishes a reasonable likelihood of prevailing in demonstrating the unpatentability of at least one of the challenged claims of the '974 patent. Accordingly, we grant Petitioner's request and institute an *inter partes* review of all challenged claims of the '974 patent and with respect to all grounds set forth in the Petition.



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## II. BACKGROUND

### *A. Real Parties-in-Interest*

Petitioner identifies itself as the real party-in-interest. Pet. 1. Patent Owner names itself as the real party-in-interest. Paper 4, 1.

### *B. Related Matters*

The parties inform us that the '974 patent was asserted in *Autonomous Devices LLC v. Tesla, Inc.*, No. 22-cv-1466 (MN) (D. Del.) (the "parallel district court proceeding"). Pet. 1; Paper 4, 1. The parties also identify a concurrently filed petition, IPR2023-01055, challenging U.S. Patent No. 11,238,344 (the "'344 patent"), a continuation of the '974 patent. Pet. 1; Paper 4, 1.

### *C. The '974 Patent*

The '974 patent is titled "Artificially Intelligent Systems, Devices, and Methods for Learning and/or Using a Device's Circumstances for Autonomous Device Operation." Ex. 1001, code (54). The '974 patent is directed to "devices, apparatuses, systems, and related methods for providing advanced learning, anticipating, decision making, automation, and/or other functionalities." *Id.* at 1:10–13. The '974 patent describes artificially intelligent devices, systems, and methods

> that enable learning a device's circumstances including objects with various properties along with correlated instruction sets for operating the device, storing this knowledge in a Knowledgebase (i.e. neural network, graph, sequences, etc.), and operating a device autonomously.

*Id.* at 57:49–57.

Figure 2 of the '974 patent is depicted below.



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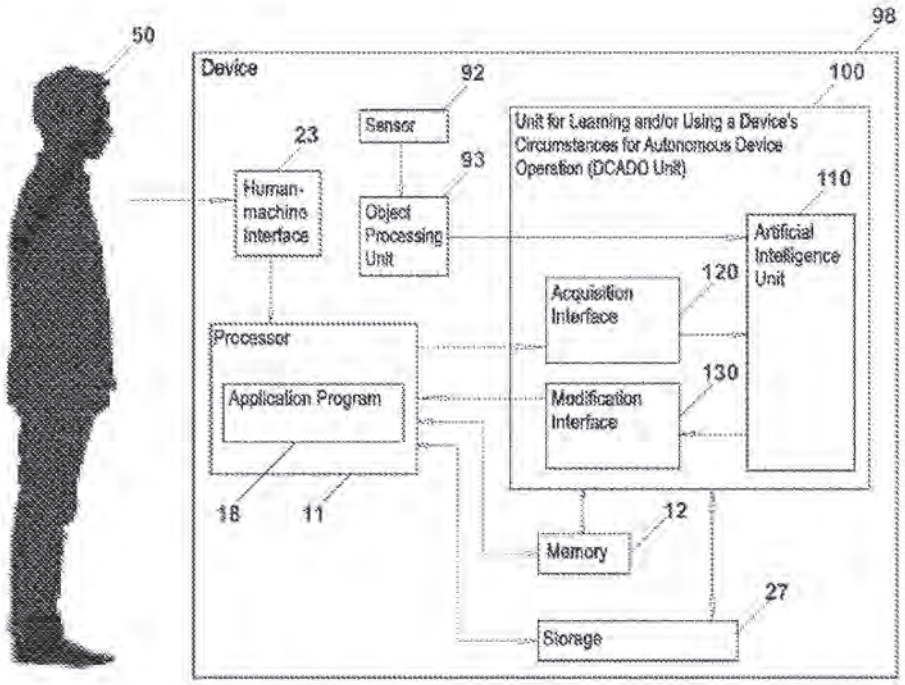



FIG. 2

Figure 2 illustrates an embodiment of device 98 comprising "Unit for Learning and/or Using a Device's Circumstances for Autonomous Device Operation" (DCADO Unit) 100, processor 11, human-machine interface 23, sensor 92, object processing unit 93, memory 12, and storage 27. *Id.* at 66:55–66:60.

Processor 11 is configured to execute instruction sets for operating the device. Ex. 1001, 67:4–7. User 50 issues an operation direction to application program 18 responsive to which application program's 18 instructions or instruction sets are executed by processor 11 to perform a desired operation on device 98. *Id.* at 68:26–30. Sensor 92 "comprises the functionality for obtaining or detecting information about [the sensor's] environment" and "can be used to detect objects and/or their properties" near device 98. *Id.* at 69:4–9. Object processing unit 93 "comprises the functionality for processing output from [s]ensor 92" and can be used "to

detect objects and/or their properties." *Id.* at 71:38–43. DCADO Unit 100 comprises artificial intelligence unit 110, acquisition interface 120, and modification interface 130. *Id.* at 66:62–64. Artificial intelligence unit 110 is "configured to receive a first collection of object representations" that include "one or more representations of objects detected by the sensor." *Id.* at 67:13–17.

Artificial intelligence unit 110 comprises functionality for learning device's 98 operation. *Id.* at 96:27–28. An embodiment of this functionality is shown in Figure 32 of the '974 patent, depicted below.

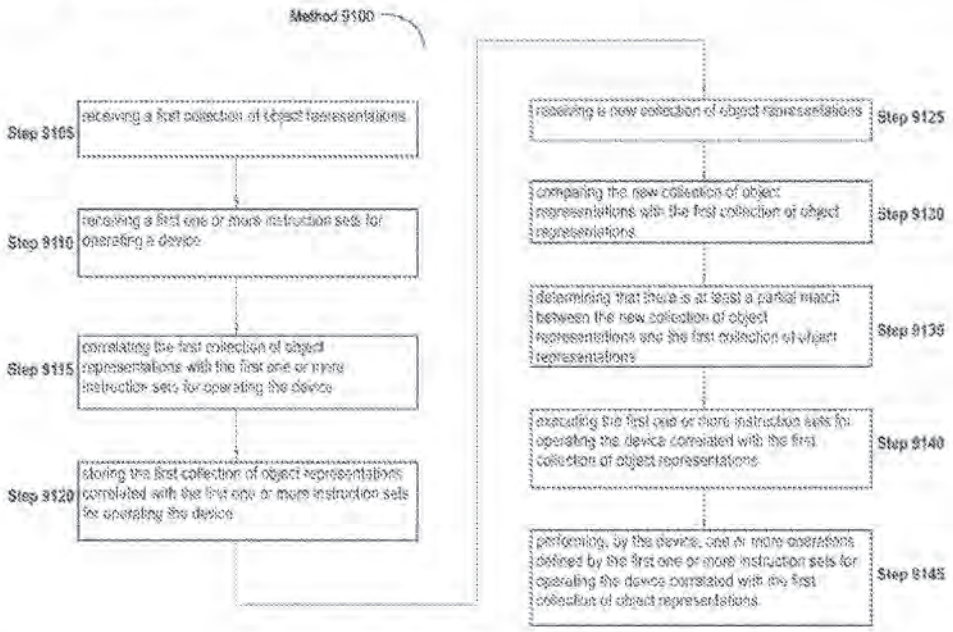



FIG. 32

Figure 32 is an illustration showing an embodiment of method 9100 "for learning and/or using a device's circumstances for autonomous device operation." *Id.* at 150:7–9. At step 9105 of Figure 32, "a first collection of object representations is received." *Id.* at 150:21–22. "An object representation may include an electronic representation of an object (i.e. Object 615, etc.) detected in a device's surrounding." *Id.* at 150:26–28. At



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step 9110, "a first one or more instruction sets for operating a device are received." *Id.* at 151:60–61. At step 9115, "the first collection of object representations is correlated with the first one or more instruction sets for operating the device." *Id.* at 153:15–17. At steps 9125 and 9130, a new collection of object representations is received and "compared with the first collection of object representations." *Id.* at 154:39–44. At step 9135, "a determination is made that there is at least a partial match between" the two collections. *Id.* at 155:27–29. At step 9140, the "first one or more instruction sets for operating the device correlated with the first collection of object representations are executed." *Id.* at 156:66–157:1.

*D. Illustrative Claims*

Claims 4–5, 7, 11, and 14–15 of the '974 patent are at issue in this proceeding. These claims depend, directly or indirectly, from disclaimed claim 1, and thus incorporate the subject matter of claim 1. Ex. 1001, 170:16–172:26.

Claims 4 and 14 are illustrative of the claimed subject matter at issue and are reproduced below, along with disclaimed independent claim 1, from which they depend.

> 1.[1.1[1]] A method implemented using a computing system that includes one or more processor circuits, the method comprising:
>
> [1.2] accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the

[1] We use Petitioner's designations for the elements of claim 1. *See* Pet. 11–22.



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first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device,

[1.3] and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

[1.4] generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

[1.5] anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

[1.6] at least in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

4. [4.1] The method of claim 1, wherein the learning process includes: generating or receiving the first circumstance representation, and generating or receiving the second circumstance representation; and,

[4.2] obtaining or receiving the first one or more instruction sets for operating the first device, and obtaining or receiving the second one or more instruction sets for operating the first device,

[4.3] and wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation

> correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes: generating or receiving the fourth circumstance representation; and obtaining or receiving the fourth one or more instruction sets for operating the second device.
>
> 14. The method of claim 1, wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more object representations, or one or more collections of object representations.

Ex. 1001, 169:36–170:4, 170:15–36, 172:10–18.

*E. Evidence*

Petitioner relies on the references summarized in the table below.

| Name | Reference | Exhibit |
|---|---|---|
| Grotmol | US 9,604,359 B1, filed Jan. 27, 2015, issued Mar. 28, 2017 | 1004 |
| Hickman | US 8,639,644 B1, filed May 4, 2012, issued Jan. 28, 2014 | 1005 |

Petitioner also relies on the Declaration of Jason Janet, Ph.D. (Ex. 1002) to support its contentions that the challenged claims are unpatentable.

*F. Asserted Grounds*

Petitioner asserts that the challenged claims of the '974 patent are unpatentable based on the following grounds summarized in the table below (Pet. 3–4):

| Claim(s) Challenged | 35 U.S.C. § | Reference(s)/Basis |
|---|---|---|
| 4–5, 7, 14–15 | 102(a)(2) | Grotmol |
| 11 | 103 | Grotmol in view of the knowledge of a person of ordinary skill |
| 4, 11 | 103 | Grotmol, Hickman |

## III. DISCRETION UNDER 35 U.S.C. § 314(A) BASED ON RELATED DISTRICT COURT PROCEEDING

Patent Owner argues we should exercise our discretion under 35 U.S.C. § 314(a) to deny institution of *inter partes* review in view of the parallel district court proceeding. Prelim. Resp. 46–52; Prelim. Sur-reply 4–5. Petitioner disagrees. Prelim. Reply 3–5. We address the parties' arguments regarding discretionary denial below.

Under Section 314(a), the Director has discretion to deny institution. *See* 35 U.S.C. § 314(a) (stating "[t]he Director *may not* authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition") (emphasis added); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review." (emphasis omitted)); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.").



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In determining whether to exercise this discretion based on a related litigation, the Board assesses all relevant circumstances, including the merits, to balance considerations such as system efficiency, fairness, and patent quality. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"); *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 19–20 (PTAB Sept. 12, 2018) (precedential). We consider six factors as part of this balanced assessment when determining whether to use our discretion to deny institution:

> 1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> 2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> 3. investment in the parallel proceeding by the court and the parties;
>
> 4. overlap between issues raised in the petition and in the parallel proceeding;
>
> 5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
>
> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

*Fintiv*, Paper 11 at 5–6. In evaluating these factors, we "take[] a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* at 6.

On June 21, 2022, the Director issued an Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation ("Interim *Fintiv* Guidance").[2] The Interim *Fintiv* Guidance

[2] The Interim *Fintiv* Guidance is available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_



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provides "several clarifications" to "the PTAB's current application of *Fintiv* to discretionary denial where there is parallel litigation" in response to comments received from stakeholders in response to a Request for Comments. Interim *Fintiv* Guidance 2.

We now apply the six factors to the facts and circumstances present here.

*A. Fintiv Factor 1: Stay in the Parallel Proceeding*

Under the first *Fintiv* factor, we consider "whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted." *Fintiv*, Paper 11 at 6. Patent Owner contends that this factor weighs in favor of denial because "there is no stay in the district court proceeding, and there is a low likelihood of a stay." Prelim. Resp. 48; *see also* Prelim. Sur-Reply 4 ("a stay is unlikely"). Patent Owner also asserts that the parallel district court proceeding is at an advanced stage of litigation. Prelim. Resp. at 48. Petitioner argues that neither party has requested a stay in the district court proceeding, and this factor should be considered neutral. Prelim. Reply 3.

Patent Owner does not dispute Petitioner's argument that no stay has been requested in the parallel district court litigation. Prelim. Sur-reply 4. Although Patent Owner argues that resources are being expended on discovery, based on the current schedule in the parallel district court proceeding significant investment remains including claim construction briefing, which does not begin until April 26, 2024, and the claim construction hearing, which is not scheduled until July 26, 2024. *See generally* Ex. 2006. We, therefore, do not agree that the evidence supports

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Patent Owner's argument that the parallel district court proceeding is in an advanced stage such that a stay, if requested, would not be granted.

We will not attempt to predict how the district court in the parallel district court proceeding would proceed if a stay is requested because the court may determine whether or not to stay any individual case, including the related one, based on a variety of circumstances and facts beyond our control and to which the Board is not privy. *Sand Revolution II, LLC v. Cont'l Intermodal Grp. - Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) ("*Sand Revolution*"). Accordingly, we find that factor 1 is neutral.

*B.* Fintiv *Factor 2: Trial Date in the Parallel Proceeding*

Under the second *Fintiv* factor, we consider the "proximity of the court's trial date to the Board's projected statutory deadline for a final written decision." *Fintiv*, Paper 11 at 6. Petitioner states that trial in the parallel district court proceeding "is currently set for June 23, 2025." Prelim. Reply 4 (citing Ex. 2006). Patent Owner does not dispute that trial is set for June 23, 2025. Prelim. Sur-reply 4–5. Because the deadline for our final written decision is approximately six months before the current trial date in the parallel district court proceeding, we find that factor 2 weighs against exercising discretion to deny institution.

*C.* Fintiv *Factor 3: Investment by the Court and the Parties in the Parallel Proceeding*

Under the third *Fintiv* factor, we consider the "investment in the parallel proceeding by the court and the parties." *Fintiv*, Paper 11 at 6. Patent Owner asserts that substantial resources will have already been invested, including exchanging preliminary contentions, substantially



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completing document production, and likely engaging in deposition discovery. Prelim. Resp. 48–49; Prelim. Sur-Reply 5. Patent Owner also argues that Petitioner "waited seven months after the parallel district court litigation was filed to file its petition" and that Petitioner's delay was "unreasonable." Prelim. Resp. 49. Petitioner also contends that the institution decision will occur prior to the close of fact discovery, claim construction briefing, and the start of expert discovery. Prelim. Reply 4–5.

Claim construction briefing does not begin until April 26, 2024 and the hearing on claim construction is scheduled for July 26, 2024. Ex. 2006, 3, 7. The parties do not dispute that trial in the parallel district court proceeding is currently set for June 23, 2025. *Id.* at 11. Because of the significant investment that remains in the parallel district court proceeding (*see generally* Ex. 2006), we find that factor 3 weighs against exercising discretion to deny institution.

*D.* Fintiv *Factor 4: Overlap Between Issues Raised in the Petition and Parallel Proceeding*

Under the fourth *Fintiv* factor, we consider the "overlap between issues raised in the petition and in the parallel proceeding." *Fintiv*, Paper 11 at 6. Petitioner stipulates that,

> if the Board institutes IPR on the Petition grounds, Petitioner will not pursue an invalidity defense in the district court (C.A. No. 22-cv-1466-MN) that the patent claims subject to the instituted IPR are invalid based on the same Petition grounds.

Prelim. Reply 5.

Patent Owner argues that the fourth *Fintiv* factor favors institution despite Petitioner's stipulation. Prelim. Sur-Reply 5. In particular, Patent Owner asserts that Petitioner "provided a weak stipulation under *Sand*



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*Revolution* that falls short of a *Sotera* stipulation." *Id.* (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential)).

Petitioner's stipulation that it will not rely on the grounds asserted in the Petition in the parallel district court proceeding mitigates to at least some degree concerns of duplicative efforts and potentially conflicting decisions. Prelim. Reply 5; *see Sand Revolution*, Paper 24 at 12. Thus, we determine that factor four weighs marginally against exercising discretion to deny institution.

*E.* Fintiv *Factor 5: Whether Petitioner is the Defendant in the Parallel Proceeding*

Under the fifth *Fintiv* factor, we consider "whether the petitioner and the defendant in the parallel proceeding are the same party." *Fintiv*, Paper 11 at 6. When the Board's deadline for a Final Written Decision precedes the district court trial date and the parties are the same in both proceedings, *Fintiv* factor 5 typically weighs against exercising discretion to deny institution. *See Hanwha Solutions Corp. v. REC Solar Pte. Ltd.*, IPR2021-00989, Paper 12 at 14, 17 (PTAB Dec. 13, 2021) (determining that factor 5 did not weigh in favor of exercising discretion to deny institution where district court trial date was set for three months after statutory deadline for a final written decision); *Carrier Fire & Security Americas Corp. v. Sentrilock, LLC*, IPR2021-00665, Paper 12 at 13–14 (PTAB Sept. 16, 2021) (The parties being the same "could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal is likely to address the challenged patent first," and the Board reaching the merits before the district court means "estoppel will apply against Petitioner should we determine that Petitioner failed to demonstrate unpatentability of



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the challenged claims.")). Because the deadline for our final written decision is approximately six months before the current trial date in the parallel district court proceeding, we find that factor 5 weighs against exercising discretion to deny institution.

*F.* Fintiv *Factor 6: Other Considerations*

Under the sixth *Fintiv* factor, we consider "other circumstances that impact the Board's exercise of discretion, including the merits." *Fintiv*, Paper 11 at 6. As discussed below, we determine that Petitioner has shown a reasonable likelihood of unpatentability of several of the challenged claims. Beyond that, given the facts relating to the other *Fintiv* factors in this case, we need not make further determinations regarding Petitioner's showing in order to decide whether to exercise our discretion to deny institution in this proceeding. Therefore, we treat this factor as neutral in our analysis.

*G. Conclusion*

As noted above, we take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Fintiv*, Paper 11 at 6. Weighing all of the factors, we are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking 35 U.S.C. § 314(a) to deny institution of a potentially meritorious petition. Based on the record before us, we determine the facts of this case do not warrant discretionary denial.

## IV. ANALYSIS

*A. Legal Standards*

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628,



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631 (Fed. Cir. 1987). To establish anticipation, "all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim." *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness, i.e., secondary considerations.[3] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

*B. Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art,

> would have [had] 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.

[3] Patent Owner does not present objective evidence of nonobviousness at this stage of the proceeding.



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Pet. 4 (citing Ex. 1002 ¶¶ 40–42). At this stage in the proceeding, Patent Owner adopts Petitioner's proposal. *See* Prelim. Resp. 5.

Considering the subject matter of the '974 patent, the background technical field, and the asserted prior art, we agree with Petitioner's proposed qualifications for the person of ordinary skill in the art, except we decline to adopt "at least," as that language is vague and open-ended. Otherwise, Petitioner's proposed definition is consistent with the level of skill reflected in the specification of the '974 patent and the asserted prior art references. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Accordingly, for purposes of this Decision, and based on the current record, except as noted above, we adopt Petitioner's assessment of the level of skill for one of ordinary skill in the art.

*C. Claim Construction*

We construe the challenged claims by applying the standard used in federal courts, in other words, "the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b)," which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2020). Under this standard, the words of a claim generally are given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13. "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence."



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*DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner provides a construction for "means for generating or receiving," "means for anticipating," and "means for executing" in disclaimed claim 19. Pet. 4–5. Patent Owner argues that "construction of these terms is unnecessary" due to the disclaimer of claim 19. Prelim. Resp. 14. We agree. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (alteration in original)).

Petitioner states that it "applies the ordinary and customary meaning of the claim terms" and "explains the meaning of claim terms" in its element-by-element analysis where appropriate. Pet. 4. Patent Owner provides a proposed construction for "object representation." Prelim. Resp. 9–13. We discuss the parties' dispute regarding that term below.

*1. "object representation"*

Petitioner argues that the '974 patent "does not define 'object representations' beyond its use in the phrase 'collection of object representations,' which it defines as 'one or more representations of objects detected by the sensor at a time.'" Pet. 42 (citing Ex. 1001, 3:31–33). Petitioner argues that the '974 patent explains that the sensor may include a camera or motion picture camera and "provides examples of objects represented in pictures." *Id.* at 36–37 (citing Ex. 1001, 69:45–56, 72:52–57). Petitioner also argues that the '974 patent describes "various approaches to object recognition." *Id.* (citing Ex. 1001, 75:1–5).



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Patent Owner asserts that the term "object representation" should be construed as "a 'data structure that includes an object property generated by object processing.'" Prelim. Resp. 10. Patent Owner argues that its proposed construction is apparent "[i]n the context of the '974 patent," including Figure 4B of the '974 patent, and further that its construction is correct "[b]ecause [the '974 patent describes] the object properties are generated by Object Processing Unit 93 and stored in the object representations." *Id.* at 10–13 (citing Ex. 1001, 71:38–53, 71:64–66, 80:16–34, Figs. 2, 4B). Patent Owner argues that its construction "is confirmed by and consistent with the language of the claims." *Id.* at 13.

In its Preliminary Reply, Petitioner counters that Patent Owner's proposed construction "imports limitations from cherrypicked embodiments in the specification and unjustifiably restricts the ordinary meaning of a 'representation' of an object to a particular 'data structure.'" Prelim. Reply 1. Petitioner argues that because "the '974 patent does not expressly define 'object representation'" and the Specification and file history do not include "any relevant disclaimer or disavowal," Patent Owner's proposed construction should be rejected. *Id.* at 1–2 (citing, e.g., *Polaris Innovations Ltd. v. Brent*, 48 F.4th 1365, 1376 (Fed. Cir. 2022)). Petitioner also argues that Patent Owner's proposed construction "improperly reads out embodiments of the '974 patent that refer to object representations in broader contexts." *Id.* at 2 (citing Ex. 1001, 3:31–51, 28:9–12). Petitioner further argues that the language of claim 18 of the continuation '344 patent supports Petitioner's position. *Id.* (citing Ex. 1001, 173:66–174:4).

Patent Owner argues that the '974 patent Specification is "highly relevant" and "provide[s] important context and meaning" for the term



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"object representation." Prelim Sur-reply 2; *see also id.* at 3 (arguing the claim term should not be analyzed "in a vacuum"). Patent Owner argues that its proposed construction also does not improperly read out embodiments "that refer to object representations in broader contexts." *Id.* (citing Ex. 1001, 3:50–51, 28:10–12). Additionally, Patent Owner contends that the '974 patent disclosures relied on by Petitioner simply acknowledge "that sensors are used, in part, to detect objects in the sensors' normal operation of capturing the device's general environment." *Id.* Patent Owner also asserts that the recitation in claim 18 "that an object representation includes 'one or more digital pictures that depict one or more objects'" is consistent with Patent Owner's construction and "provides an example of what the data structure can include." *Id.* at 3.

We start first with the language of claim 18 of the continuation '344 patent (challenged in IPR2023-01055), which recites

> wherein the first one or more object representations include: one or more three dimensional representations of one or more objects, one or more digital pictures that depict one or more objects, one or more digital pictures that depict one or more representations of one or more objects, one or more information about one or more properties of one or more objects, ***or*** one or more computer representations of one or more objects.

Ex. 1008, 173:66–174:6 (emphasis added). At this preliminary stage in the proceeding, we find that the limitation in claim 18 relied on by both parties recites a list of possible "object representations" including the conjunction "or," which we preliminarily find links alternatives such that "the first one or more object representations" may include "one or more digital pictures that depict one or more objects" *or* "one or more information about one or more



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properties of one or more objects." *Id.* We, therefore, preliminarily find that the language of claim 18 supports Petitioner's position.

Next, we turn to the '974 patent Specification. We preliminarily find that the '974 patent Specification suggests a broader interpretation of "object representations" than that proposed by Patent Owner. In particular, the Specification explains that '[i]n *some embodiments, the first collection of object representations includes one or more representations of objects detected by the sensor at a time*" (*id.* at 3:31–33 (emphasis added)) and "[i]n *further embodiments*, an object representation of one or more object representations includes *one or more object properties*" (*id.* at 3:49–51 (emphases added)). We preliminarily find that this disclosure is consistent with Petitioner's argument that the '974 patent refers "to object representations in broader contexts" than the embodiment relied on by Patent Owner. *See* Prelim. Reply 2.

Furthermore, Patent Owner relies on non-limiting examples in the Specification to support its proposed construction. For instance, the '974 patent describes Figure 4B as illustrating "an exemplary embodiment." Ex. 1001, 55:45–47. The '974 patent also explains that object processing unit 93 "*may* create or generate" collection of object representations 525 and that object representation 625*a* "*may* include" object property 630*aa*. *Id.* at 80:16–23 (emphases added). Neither party relies on the prosecution history of the '974 patent.

Our reviewing court has repeatedly "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015) (internal quotations omitted); *SuperGuide Corp. v. DirecTV*



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*Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (noting that "it is important not to import into a claim limitations that are not a part of the claim"). "[I]t is the *claims*, not the written description, which define the scope of the patent right." *Williamson*, 792 F.3d at 1346–47; *see also Phillips*, 415 F.3d at 1312 (noting that "[i]t is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude'"). Thus, "a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment." *SuperGuide*, 358 F.3d at 875.

At this preliminary stage, therefore, we decline to adopt Patent Owner's proposal that the term "object representation" should be construed as "a 'data structure that includes an object property generated by object processing.'" Prelim. Resp. 10. At this early stage, we, instead, agree with Petitioner that the '974 patent refers to object representations in broader contexts, including that "the first collection of object representations includes one or more representations of objects detected by the sensor at a time." Prelim. Reply 2 (citing Ex. 1001, 3:31–51); *see also* Pet. 42 (arguing that the '974 patent describes "object representations" in the phrase "one or more representations of objects detected by the sensor at a time") (citing Ex. 1001, 3:31–33)). We also agree with Petitioner that the '974 patent Specification describes a camera as an exemplary sensor. Pet. 42 (citing Ex. 1001, 69:45–56). No further determinations are needed to resolve disputes between the parties at this preliminary stage in the proceeding.

*D. Anticipation of Claims 4–5, 7, and 14–15 by Grotmol*

Petitioner asserts that claims 4–5, 7, and 14–15 are anticipated by Grotmol. Pet. 3–4. Patent Owner disagrees. Prelim. Resp. 14–34.



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We begin with an overview of Grotmol. We then turn to the parties' contentions.

*1. Overview of Grotmol (Ex. 1004)*

Grotmol is titled "Apparatus and Methods for Training Path Navigation by Robots." Ex. 1004, code (54). Grotmol describes an apparatus and methods for training and operating a robotic device to follow a trajectory. *Id.* at code (57).

More specifically, Grotmol describes exemplary mobile robotic apparatus 160, shown in Figure 1 below. *Id.* at 8:57–61.

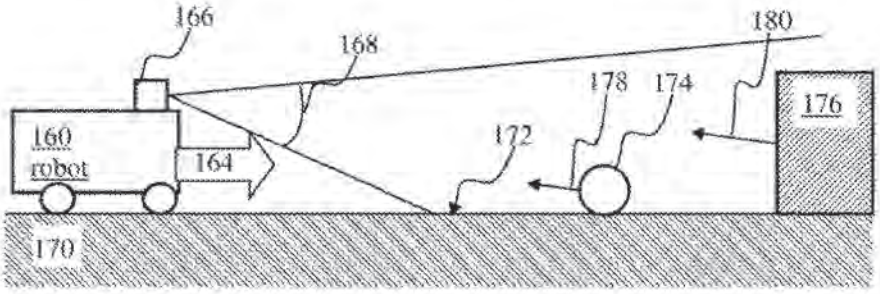



**FIG. 1**

Figure 1 depicts mobile robotic apparatus 160 that contains sensor component 166. *Id.* Sensor component 166 provides "information associated with objects within the field-of-view 168." *Id.* at 8:64–66. Grotmol's sensor 166 comprises "a camera configured to provide an output comprising a plurality of digital image frames." *Id.* at 10:16–20. A user "may train the system to switch between tasks based on the sensory context." *Id.* at 10:45–47.

Grotmol further describes a "mechanism for enabling a robot to learn navigating a target trajectory while reducing deviation from a target path." *Id.* at 38:33–35. The robot comprises robotic vehicle 160, camera 166, and



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"a controller configured to store a sequence of images obtained during training phase." *Id.* at 38:36–39. Figure 20A from Grotmol is shown below.

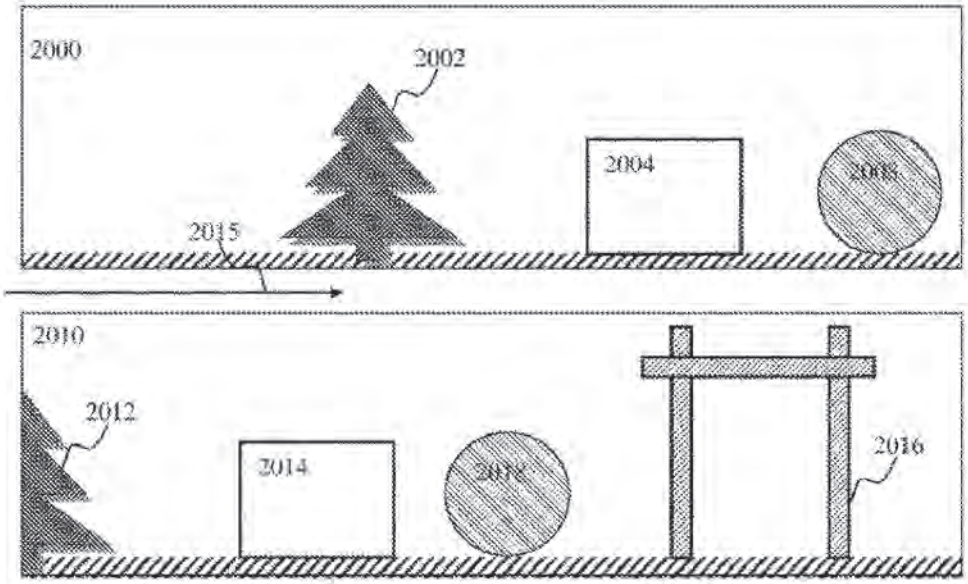



FIG. 20A

Figure 20A illustrates images 2000, 2010 obtained with a camera 166 mounted on a robotic vehicle 160. *Id.* at 38:43–54. Grotmol explains that image 2000 comprises "representations [of] one or more objects, e.g., a tree 2002, a rectangle, a ball 2008, and/or other objects." *Id.* at 38:56–58. Grotmol further explains that image 2010 is obtained after execution of a turn and representations of objects are shifted "relative [to] representations of the same objects in the frame obtained prior to the turn execution." *Id.* at 38:60–65.

During autonomous operation, the control process of the robot is configured to compare a current or recent image with the one or more images from the training buffer. *Id.* at 39:23–28. "Motor commands issued by a trainer corresponding to time instances when the images are acquired" also are stored." *Id.* at 39:17–19. Grotmol explains that "in order to reduce/maintain the error metric during operation of the robot," motor



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commands are obtained "by taking the stored motor commands from the training buffer" that correspond to "the best matching stored image." *Id.* at 43:4–9.

*2. Disclaimed Independent Claim 1*

We begin our analysis with disclaimed independent claim 1 because claims 4–5, 7, and 14–15, which are at issue in this proceeding, depend from claim 1.

*a) [1.1] (preamble) "A method implemented using a computing system that includes one or more processor circuits, the method comprising:"*

Petitioner argues that Grotmol discloses the preamble by describing a robotic apparatus with one or more processors. Pet. 11 (citing Ex. 1004, 3:27–30, 8:5–15; Ex. 1002 ¶¶ 65–66).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses the preamble of claim 1 for purposes of institution.

*b) [1.2] accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected*



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*at least in part by the one or more sensors of the first device,*

Petitioner argues that "Grotmol discloses a 'memory component may be configured to store training sets,' where '[a] given training set may comprise an instance of the video frame, an instance of the binary signal, and an instance of a motor control indication configured to cause the robot to execute an action.'" Pet. 12 (citing Ex. 1004, code (57), 3:27–39) (alteration in original). "Thus," Petitioner asserts, "Grotmol discloses a memory that stores a knowledgebase including multiple correlations (training sets), where each correlation includes a 'circumstance representation' (image of scene from a robot vehicle's operation) correlated with an 'instruction set[] for operating a first device' (motor control indication configured to cause the robot to execute an action)." *Id.* at 12–13 (alteration in original).

Petitioner also argues that "[t]he images in Grotmol are 'associated with' or 'correspond to'—*i.e.*, are correlated with—motor control indications issued around the same time." Pet. 13 (citing Ex. 1002 ¶ 68). According to Petitioner, "Grotmol describes training behaviors in a robotic device by 'learning of *associations* between sensory context . . . and a respective action . . . during training.'" *Id.* at 13–14 (citing Ex. 1004, code (57), 33:59–62) (alteration in original). "This association," Petitioner contends, "may be based on the timing of the images and the motor commands." *Id.* at 14 (citing Ex. 1004, 39:17–19, 43:5–9).

Additionally, Petitioner argues, "Grotmol discloses that circumstance representations (images) represent circumstances detected by a sensor of the first device." Pet. 14. "Specifically," Petitioner asserts, "Grotmol discloses the video frame instances are detected by a 'sensor component' of the robotic vehicle." *Id.* (citing Ex. 1004, code (57), 3:31–33). According to



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Petitioner, Figure 8 of Grotmol shows that "the 'memory' of Grotmol is connected to the 'sensory' functionality through the 'processing' functionality." *Id.* (citing Ex. 1004, 9:1–3). Thus, Petitioner contends, "[b]oth Grotmol and the '974 patent disclose that digital images may come from, for example, a CCD image sensor in the form of color encoded pixels." *Id.* at 14–15 (citing Ex. 1001, 69:67–70:5, 112:24–32; Ex. 1004, 9:8–22). And, according to Petitioner, "Grotmol further discloses that these pixels are used for object (or circumstance) recognition." *Id.* at 15 (citing Ex. 1004, 8:66–9:3). Finally, Petitioner argues, Grotmol discloses "accessing the training sets stored in the memory component to perform autonomous operation." *Id.* (citing Ex. 1004, code (57), 39:23–28).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [1.2] for purposes of institution.

> c) *[1.3] and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;*

Petitioner argues that "Grotmol discloses that a human ('user') can operate the robot during a training process and '[t]rained behaviors of the robotic device may be configured based on *learning* of associations between sensory context (e.g., presence of an obstacle in front of the robotic vehicle) and a respective action (e.g., right turn) during training.'" Pet. 16 (citing Ex. 1004, 33:59–62). "In both the 'listen mode' and 'override mode,'" Petitioner asserts, "Grotmol teaches that the robot will listen to commands sent by a trainer (user) 'and try to remember it for the next time the same



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situation occurs.'" *Id.* (citing Ex. 1004, 23:3–29, 24:55–25:5, 34:50–55). According to Petitioner, "Grotmol describes this training as a learning process." *Id.* (citing Ex. 1004, 24:17–20, claim 12). "Accordingly," Petitioner contends, "Grotmol discloses a first correlation and a second correlation are learned during a learning process in which a user operates the first device." *Id.* at 17 (citing Ex. 1002 ¶ 74).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [1.3] for purposes of institution.

> *d) [1.4] generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;*

Petitioner argues that "Grotmol discloses that its processor or a feature of an application running thereon receives additional digital pictures from the camera over time." Pet. 17 (citing Ex. 1004, 38:36–39, 39:23–28). "In Grotmol," Petitioner asserts, "'the most recent, current' image corresponds to the claimed 'third circumstance representation' and it is compared to the stored images in the training buffer (the claimed first and second circumstance representations)." *Id.* (citing Ex. 1002 ¶¶ 75–76). "Furthermore," according to Petitioner, "Grotmol discloses that the 'most recent, current' image (*i.e.*, third circumstance representation) can be detected by a camera of the robot that was used during the training mode (*i.e.*, first device), or it can be detected by the camera of a different robot (*i.e.*, second device)." *Id.* at 17–18 (citing Ex. 1002 ¶ 76). "Accordingly,"



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Petitioner contends, "Grotmol discloses generating or receiving a third circumstance representation detected by a sensor of the first device or a second device." *Id.* at 18 (citing Ex. 1002 ¶¶ 75–77).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [1.4] for purposes of institution.

> e) *[1.5] anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and*

Petitioner argues that "Grotmol discloses that 'motor commands at a given time step may be obtained by taking the stored motor commands from the training buffer that may correspond to the *best matching* stored image.'" Pet. 18 (citing Ex. 1004, 43:5–9). Petitioner asserts that "Grotmol discloses that the matching step may comprise calculating a similarity measure between a current image and a stored image, then determining whether that similarity measure breaches a threshold (*i.e.*, 'at least partial match between the third circumstance representation and the first circumstance representation')." *Id.* (quoting Ex. 1004, 2:30–39). "As used in Grotmol," Petitioner contends, "'the term feature may be used to describe one or more integer or floating point values characterizing the input, e.g., the presence or absence of an edge, corner, shape, texture, color, object, at particular locations in the image, *values of pixels in an image*, patches of color texture, brightness in the image, and/or in the image as a whole . . . .'" *Id.* at 19 (citing Ex. 1004, 28:19–24) (alteration in original). Additionally, according to Petitioner, a "training set," as used in Grotmol "may comprise 'an



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instance of the video frame, an instance of the binary signal, and an instance of a motor control indication configured to cause the robot to execute an action.'" *Id.* (citing Ex. 1004, 3:35–39).

Moreover, according to Petitioner, "[b]oth Grotmol and the '974 patent disclose that determining a 'partial match' may comprise pixel-wise difference analysis between two digital pictures." Pet. 19–20 (citing Ex. 1001, 66:24–28, 73:21–54; Ex. 1004, 3:13–15, 41:8–17). "Accordingly," Petitioner contends, "Grotmol discloses anticipating an instruction set for operating the first device learned in the learning process based on a partial match between the third circumstance representation and the first circumstance representation." *Id.* at 20 (citing Ex. 1002 ¶¶ 78–79).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [1.5] for purposes of institution.

> *f) [1.6] at least in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.*

Petitioner argues that, as described above for limitation [1.5], "Grotmol discloses anticipating the learned instruction sets for operating the device by comparing a new image with a stored image at least by matching portions of the images and determining whether those matching portions exceed a threshold number." Pet. 20 (citing Ex. 1002 ¶¶ 78–79). According to Petitioner, "Grotmol further discloses 'executing the first one or more



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instruction sets for operating the first device learned in the learning process' in response to the 'anticipating.'" *Id.* According to Petitioner, "Grotmol describes that after it is determined that the similarity measure between the new image and image from the training set breaches a threshold, one or more potential control signals corresponding to the image from the training set that were obtained during a training operation of the robot (the instruction sets correlated with the first digital picture) are determined and executed." *Id.* at 20–21 (quoting Ex. 1004, 2:34–41, 3:12–13).

Additionally, Petitioner argues, "Grotmol discloses that the robot (first device) autonomously performs the operations defined by the first instruction set for operating the device." Pet. 21 (citing Ex. 1004, code (57), 34:56–62, 43:4–11). According to Petitioner, "Grotmol further discloses that training sets for performing autonomous operation may be loaded into the robot used for training (*i.e.*, first device), or may be loaded into another robot (*i.e.*, second device), and therefore, discloses that a first device or a second device autonomously performs the operations defined by the instructions stored in the training set." *Id.* at 21–22 (citing Ex. 1004, 33:21–32). "Accordingly," Petitioner contends, "Grotmol discloses executing the instruction set for operating the first device learned in the learning process, where the first device or the second device autonomously performs an operation defined by the instruction set." *Id.* at 22 (citing Ex. 1002 ¶¶ 80–82).

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [1.6] for purposes of institution.



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*g) Conclusion—Disclaimed Claim 1*

After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has established a reasonable likelihood that Grotmol discloses each recitation of claim 1.

*3. Dependent Claim 4*

*a) [4.1] The method of claim 1, wherein the learning process includes: generating or receiving the first circumstance representation, and generating or receiving the second circumstance representation; and,*

Petitioner argues that, as discussed above for limitations [1.2] and [1.3], "Grotmol discloses a learning process that results in a memory storing multiple correlations (training sets)," where "each correlation includes a 'circumstance representation' (image of scene from a robot vehicle's operation) correlated with an 'instruction set[] for operating a first device' (motor control indication configured to cause the robot to execute an action)." Pet. 26 (citing Ex. 1002 ¶¶ 67–74) (alteration in original). Petitioner further contends that "[t]he images are generated during a training process and are received by the memory." *Id.* (citing Ex. 1004, code (57)).

Patent Owner does not present arguments specifically directed to limitation [4.1] *See* Prelim. Resp.

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [4.1] for purposes of institution.

*b) [4.2] obtaining or receiving the first one or more instruction sets for operating the first device, and obtaining*



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*or receiving the second one or more instruction sets for operating the first device,*

Petitioner argues that, as discussed above for limitations [1.2] and [1.3], "Grotmol discloses a learning process in which multiple correlations (training sets) are stored in memory," where "each correlation includes a 'circumstance representation' (image of scene from a robot vehicle's operation) correlated with an 'instruction set[] for operating a first device' (motor control indication configured to cause the robot to execute an action)." Pet. 26 (citing Ex. 1002 ¶¶ 67–77). Petitioner further contends that "[t]he motor commands are issued by a trainer and are received by the memory during the training process." *Id.* at 26–27 (citing Ex. 1004, 39:13–22).

Patent Owner does not present arguments specifically directed to limitation [4.2] *See* Prelim. Resp.

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [4.2] for purposes of institution.

c) *[4.3] and wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes: generating or receiving the fourth circumstance representation; and obtaining or*



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*receiving the fourth one or more instruction sets for operating the second device.*

Petitioner argues that, as described above with respect to limitations [1.2] and [1.3] of claim 1, "Grotmol discloses that multiple images may be acquired, with images respectively stored in association with corresponding motor commands issued at the time the image was acquired." Pet. 27 (citing Ex. 1004, 3:31–39, 16:4–12, 24:17–23, 24:49–55). "Accordingly," Petitioner contends, "Grotmol discloses first, second, third, fourth, etc. correlations, where each correlation includes a circumstance representation correlated with an instruction for operating the robotic device." *Id.* (citing Ex. 1002 ¶¶ 67–74).

Petitioner also argues that Grotmol "discloses that the training sets and training configurations from a robot (which include the instruction sets for operating first device) can be 'stored' or 'saved.'" Pet. 27 (citing Ex. 1004, 33:12–58). "The saved training configuration," Petitioner asserts, "may then be 'loaded into the robot being trained thereby providing one or more trained behaviors to the robot.'" *Id.* at 27–28 (citing Ex. 1004, 33:27–30). "Further," according to Petitioner, "the 'trained configuration may be loaded to one or more *other robots* in order to provide learned behaviors.'" *Id.* at 28 (citing Ex. 1004, 33:30–32). "Thus," Petitioner contends, "Grotmol discloses that the memory component of a first robot can store the claimed first and second correlations as well as a fourth correlation learned in another learning process involving the operation of a second robot—*i.e.*, a circumstance detected by the sensor of a second robot correlated with instructions for operating that second robot." *Id.* (citing Ex. 1002 ¶¶ 93–94).

Patent Owner responds that "Grotmol fails to disclose that the knowledgebase includes the claimed fourth correlation learned in another



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learning process involving the second device." Prelim. Resp. 14. Rather, Patent Owner argues, "Grotmol only discloses one user operating one device in one learning process," and "does not disclose a knowledgebase that mixed knowledge of a first correlation and a second correlation learned on one device in one learning process and a fourth correlation learned on a ***second*** device in a ***second*** learning process." *Id.* at 15. With regard to Grotmol's statement that the "trained configuration may be loaded to one or more other robots in order to provide learned behaviors," Patent Owner contends that "this portion of Grotmol only discloses that a trained configuration may be loaded from a first robot to a second robot," and does not disclose "that the second robot detects a circumstance that is later included in a fourth circumstance representation as part of a fourth correlation in the knowledgebase." *Id.* "Further," according to Patent Owner, "Grotmol does not disclose that 'at least a portion of the fourth correlation is learned in another learning process,' as required by claim 4." *Id.* at 15–16.

We agree with Petitioner that Grotmol discloses that, for a particular robot, "[t]he trained configuration may be stored," and "[a] saved configuration may be loaded into the robot being trained" in order to provide "one or more trained behaviors to the robot." Ex. 1004, 33:27–30. Grotmol also discloses that "[i]n some implementations, the trained configuration may be loaded to one or more other robots to provide learned behaviors." *Id.* at 33:30–32. However, based on the present record, we question whether Petitioner has sufficiently shown that Grotmol discloses more than loading a trained configuration from a first robot to a second robot, and whether Grotmol discloses a fourth correlation learned in another learning process by a second robot that is included as part of the knowledgebase along with the



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first and second correlations learned by the first robot. However, as discussed further in Section IV.F.3 below, we find that Petitioner has sufficiently shown for purposes of institution that this limitation would have been obvious over the combination of Grotmol and Hickman. Petitioner, if it so desires, may further address the issue of whether Grotmol anticipates limitation [4.3] during the trial.

*4. Dependent Claim 5*

Dependent claim 5 recites as follows:

> 5. The method of claim 1, wherein the anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation includes:
>
> determining that a number of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number, or
>
> determining that a percentage of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold percentage.

Ex. 1001, 170:38–50.

Petitioner argues that "Grotmol discloses that the control process for autonomous operation may involve comparing a current image (*i.e.*, third circumstance representation) with an image from the training buffer (*i.e.*, first circumstance representation)," and "further discloses that determining a control signal for operation of the robot may involve computing a similarity measure for a given training set and another training set, and determining whether that similarity measure exceeds a threshold." Pet. 29 (citing Ex. 1004, 3:13–15; 3:35–58, 4:30–39, 39:23–41, 41:8–17, 43:5–9). "Thus,"



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Petitioner contends, "Grotmol discloses determining that a number of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number." *Id.* (citing Ex. 1002 ¶ 95).

Patent Owner responds that "Grotmol's disclosure regarding computing a similarity measure (how similar images are to one another) and comparing that similarity measure against a threshold" is "different from the matching of claim 5, which requires determining that a number of partially matching portions exceeds a threshold number or percentage (of portions)." Prelim. Resp. 16–17. Patent Owner argues that "[u]sing the number of at least partially matching portions in the matching process involves counting the portions and determining whether this counted number of portions exceeds a numerical threshold, and Grotmol does not disclose any such counting of portions and numerical threshold." *Id.* at 18. "Further," according to Patent Owner, "using the percentage of at least partially matching portions in the matching process involves counting the portions to compute the percentage and determining whether this computed percentage of portions exceeds a percentage threshold, and Grotmol does not disclose any such counting of portions and percentage threshold." *Id.* "A similarity measure," Patent Owner contends, "is for measuring similarity of elements, not for counting their number or computing their percentage," and thus "a similarity measure is clearly different than the number or percentage of the similar elements after the similarity measure of those elements is determined." *Id.* at 18–19.

Based on the present record, we question whether Petitioner has sufficiently shown that Grotmol discloses determining that a number or a



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percentage of "at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number," as claim 5 requires. Petitioner argues that Grotmol computes a similarity measure between two training sets and determines whether that similarity measure exceeds a threshold, but Petitioner does not specifically explain how Grotmol discloses determining a ***number*** (or ***percentage***) of at least partially matching portions of two training sets. The parties may further address this issue during the trial.

5. *Dependent Claim 7*

a) *[7.1] The method of claim 1, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating: the first device, the second device, or a third device,*

Petitioner argues that, as discussed above with respect to limitations [1.2] and [1.3], "Grotmol discloses that multiple images may be acquired, with images respectively stored in association with corresponding motor commands issued at the time the image was acquired." Pet. 31. "Accordingly," Petitioner asserts, "Grotmol discloses first, second, third, fourth, etc. correlations, where each correlation includes a circumstance representation correlated with an instruction for operating the robotic device." *Id.* (citing Ex. 1002 ¶¶ 67–74).

Petitioner also argues that Grotmol discloses "that the training sets and training configurations from a first robot (which include the instruction sets for operating first device) can be 'stored' or 'saved.'" Pet. 31 (citing Ex. 1004, 33:12–58). "The saved training configuration," Petitioner asserts, "may then be 'loaded into the robot being trained thereby providing one or more trained behaviors to the robot.'" *Id.* (citing Ex. 1004, 33:27–30).



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"Further," according to Petitioner, "the 'trained configuration may be loaded to one or more *other robots* in order to provide learned behaviors.'" *Id.* (citing Ex. 1004, 33:30–32). "Thus," Petitioner contends, "Grotmol discloses a second and third device ('one or more other robots') that can autonomously perform one or more operations defined by one or more instruction sets for operating the first device training configuration from [the] first robot (*e.g.*, training sets with circumstance representations correlated to instruction sets)" that "is loaded into a second or third other robots to 'provide learned behaviors.'" *Id.* at 31–32 (citing Ex. 1002 ¶¶ 98–99).

Patent Owner does not present arguments specifically directed to limitation [7.1] *See* Prelim. Resp.

Petitioner's contentions are supported by the cited portions of Grotmol. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that Grotmol discloses claim element [7.1] for purposes of institution.

> b) *[7.2] and wherein a first connection is generated to connect the first correlation with the second correlation, and wherein a second connection is generated to connect the second correlation with the fourth correlation.*

Petitioner argues that "[t]he '974 patent describes that '[k]nowledge cells [*containing correlations* (*see supra* claim 2)] may be *connected*, interrelated, or interlinked into knowledge structures using statistical, artificial intelligence, machine learning, and/or other models or techniques.'" Pet. 32 (citing Ex. 1001, 153:66–154:2). Petitioner asserts that "Grotmol discloses these 'connections' between . . . the correlations in the knowledg[e]base," for example by describing "storing sequences of images



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with their corresponding instruction sets (*i.e.*, a sequence of knowledge cells)." *Id.* (citing Ex. 1004, code (57), 38:21–42; Ex. 1002 ¶ 101). "An ordered buffer," according to Petitioner, "is a region of memory that is allocated for storing data in a specific order or sequence." *Id.* (citing Ex. 1002 ¶ 101). Therefore, Petitioner contends, "Grotmol describes that the training buffer may be ordered temporally, according to when the images were acquired." *Id.* at 32–33 (citing Ex. 1004, 39:65–40:4; Ex. 1002 ¶ 101). According to Petitioner, "Grotmol also describes alternative ways to order the training buffer, such as 'particle filtering,' in which images 'may be moved to a nearby location in the training buffer where the stored image matches closely with the newly arrived image,' and ordering at random." *Id.* at 33 (citing Ex. 1004, 39:42–40:19; Ex. 1002 ¶ 101). Petitioner argues that "[t]he training data stored in memory in an order or sequence corresponds to the claimed first and second 'connections' between the first and second correlations, and the second and fourth correlations." *Id.* (citing Ex. 1002 ¶¶ 100–101).

Patent Owner responds that "Grotmol fails to disclose the claimed 'first connection' and 'second connection'" because "[e]ach claimed connection links (connects) correlation data structures" and "Grotmol does not disclose correlations connected with such connections." Prelim. Resp. 19. Patent Owner argues that "[t]he connections disclosed in the '974 patent are specific links generated to connect correlation data structures in a knowledgebase," but "Grotmol merely discloses storing information in a sequence and fails to disclose connections or links between correlation data structures." *Id.* at 20. More specifically, according to Patent Owner, in the '974 patent, "[c]onnections are used to indicate and track relationships



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between knowledge cells or correlations" and "are used to create paths through the knowledgebase for efficient storage and autonomous operation." *Id.* at 21 (citing Ex. 1001, 106:6–57, 108:31–35). Thus, Patent Owner contends, Grotmol's "knowledge cells are not merely basic storage but are specifically created, constructed, and structured data structures that may be connected or interlinked using connections," and "[n]o such connections are disclosed in Grotmol." *Id.* at 22 (citing Ex. 1001, 98:54–99:10, 131:64–132:26).

"Moreover," Patent Owner argues, "claim 7 additionally requires that the first and second connections are generated," but "Grotmol does not disclose generation of connections." Prelim. Resp. 22. With respect to Petitioner's argument that Grotmol discloses "storing sequences of images with their corresponding instruction sets," Patent Owner asserts that "[a] sequence of elements inherently does not need any connections since the sequence is an ordered group of elements of a single path (i.e. sequence)," and "Grotmol never discloses connections because Grotmol does not need them." *Id.*

We believe this issue would benefit from additional development. For example, it appears that the parties may have a dispute concerning the proper construction of the term "connection" and what is required to generate "a first connection" and "a second connection." Neither party proposes a claim construction for this term, or explains how Grotmol would satisfy the claims under such a construction. The parties may further address this issue during the trial.

6. *Dependent Claim 14*

   a) *The method of claim 1, wherein the first circumstance representation includes: one or more object*



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> *representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more object representations, or one or more collections of object representations.*

Petitioner argues that "Grotmol discloses first, second, and third circumstance representations representing first, second, and third circumstances detected at least in part by one or more sensors of the first device." Pet. 41. Petitioner asserts that "Grotmol discloses object representations in the form of images 2000 and 2010 which may "comprise *representations* of one or more objects, e.g., a tree 2002, a rectangle, a ball 2008, and/or other objects." *Id.* at 42 (citing Ex. 1004, 38:54–39:12). According to Petitioner, "Grotmol likewise discloses that the sensor used to capture these images 'may provide information associated with objects within the field-of-view" and "[i]n one or more implementations, such as *object recognition*, and/or obstacle avoidance, the output provided by the sensor component 166 may comprise a stream of pixel values associated with one or more digital images." *Id.* at 43 (citing Ex. 1004, 8:57–9:13). "Accordingly," Patent Owner contends, "Grotmol discloses first, second and third circumstance representations include one or more object representations, or one or more collections of object representations." *Id.* (citing Ex. 1002 ¶¶ 117–121).

Patent Owner responds that "images are not 'object representations' under the proper construction of that term" because images are not "data structures that include an object property generated by object processing." Prelim. Resp. 24. Patent Owner's arguments disputing Petitioner's showing



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center on its proposed claim construction of "object representation." *Id.* at 23–34. More specifically, Patent Owner argues the "generated object property" required by the recitation of "object representation" in claim 14 is like exemplary object properties in the '974 patent including "Object Property 630aa 'Cat' in Category 635aa 'Type', Object Property 630ab '6 m' in Category 635ab 'Distance', Object Property 630ac '56°' in Category 635ac 'Bearing.'" *Id.* at 26 (citing Ex. 1001, 80:21–25). "Grotmol's image and its pixels," Patent Owner asserts, are "significantly different" because "a pixel or value" such as that disclosed in Grotmol "is not processed to generate object properties," which are "useful." *Id.* at 26–27; *see also id.* at 28 (arguing that "input into object processing is different than output of object processing" so "Grotmol's images do not disclose 'object representations' as properly construed"); 31 (arguing that Grotmol's images 2000 and 2010 "are merely pictures"); 32 (arguing the '974 patent describes "object properties including characteristics, labels, and numbers" and that "Grotmol's image is logically, structurally, and functionally different than the object representation data structure as properly construed"). With respect to Grotmol's use of the term "representations" in its statement that image 2000 "may comprise representations [of] one or more objects" (Ex. 1004, 38:56–57), Patent Owner argues that those representations "are not object representation data structures including an object property generated by object processing, as disclosed and claimed in the '974 patent." Prelim. Resp. 33. Lastly, Patent Owner contends, "Grotmol's disclosure that a sensor can be used for object recognition and edge detection does not mean that Grotmol discloses object representations." *Id.* at 34.



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In its Preliminary Reply, Petitioner argues that "Grotmol anticipates the use of 'object representations' even under Patent Owner's construction." Prelim. Reply 3. Patent Owner argues in its Preliminary Sur-reply that "Grotmol provides almost no disclosure regarding how object detection or feature comparison is performed, including what, if any, data structures are used in these processes." Prelim. Sur-reply 4. "Grotmol's cursory discussion of object and edge detection," according to Patent Owner, "does not support the argument that Grotmol discloses object representations that are ***data structures including an object property generated by*** object processing." *Id.*

As discussed above with respect to claim construction (*see* § IV.C.1), we decline to adopt Patent Owner's proposal that the term "object representation" should be construed as "a 'data structure that includes an object property generated by object processing.'" Prelim. Resp. 10. At this early stage, we, instead, agree with Petitioner that the '974 patent refers to object representations in broader contexts, including that "the first collection of object representations includes one or more representations of objects detected by the sensor at a time." Prelim. Reply 2 (citing Ex. 1001, 3:31–51); *see also* Pet. 42 (arguing that the '974 patent describes "object representations" in the phrase "one or more representations of objects detected by the sensor at a time") (citing Ex. 1001, 3:31–33)). We also agree with Petitioner that the '974 patent Specification describes a camera as an exemplary sensor. Pet. 42 (citing Ex. 1001, 69:45–56). Because we decline to adopt Patent Owner's proposed construction of the term "object representation," we preliminarily find that Patent Owner's arguments do not undermine Petitioner's showing at this early stage.



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We remind the parties, at this early juncture, our findings and determinations regarding claim construction and anticipation are preliminary. We welcome the parties addressing construction of the term "object representation" further, as well as the issue of whether Grotmol discloses "object representation" under a narrower construction, in accordance with our rules during trial.

After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently, for purposes of institution, that Grotmol discloses each recitation of claim 14. We preliminarily find that Patent Owner's arguments do not undermine Petitioner's showing. Accordingly, we conclude that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that claim 14 is anticipated by Grotmol.

7. *Dependent Claim 15*

a) *The method of claim 1, wherein, to correlate the first circumstance representation with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first circumstance representation, and wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations.*

Petitioner argues that, as described above with respect to limitation [1.2], "the images in Grotmol are . . . correlated with motor control indications issued around the same time." Pet. 44. Petitioner asserts that "Grotmol describes training behaviors in a robotic device by 'learning *associations* between sensory context . . . and a respective action . . . during training.'" *Id.* (citing Ex. 1004, 33:59–62). "This association," according to



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Petitioner, "may be based on the timing of the images and the motor commands." *Id.* (citing Ex. 1004, 39:17–19). "Accordingly," Petitioner contends, "Grotmol discloses that a determination is made that the first instruction set temporally corresponds to the first circumstance representation." *Id.* (citing Ex. 1002 ¶¶ 67–73, 122). Additionally, Petitioner argues, as discussed above for claim 14, "Grotmol discloses that the first circumstance representation includes one or more object representations, or one or more collections of object representations." *Id.* at 45 (citing Ex. 1002 ¶¶ 117–121, 123).

For claim 15, Patent Owner relies on its arguments concerning "object representations" as for claim 14.

After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently, for purposes of institution, that Grotmol discloses each recitation of claim 15. As discussed above for claim 14, we preliminarily find that Patent Owner's arguments that Grotmol does not disclose "object representations' does not undermine Petitioner's showing. Accordingly, we conclude that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that claim 15 is anticipated by Grotmol.

*E. Unpatentability of Claim 11 as Obvious over Grotmol*

Claim 11 recites as follows:

> The method of claim 1, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth



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> correlation is learned in another learning process that includes operating the second device at least partially by another user.

Ex. 1001, 171:44–53.

Petitioner argues that "Grotmol discloses that a human trainer ('user') can operate a robot during a training process for learning correlations," and that "multiple learning processes can be done to train multiple behaviors for the robot, including 'simple tasks' and 'complex tasks.'" Pet. 56 (citing Ex. 1004, 23:3–11, 24:17–67. 26:1–20, 39:13–22). Petitioner asserts that "Grotmol does not limit the number of users that can train the multiple behaviors for the robot," and one of ordinary skill "would have understood that different users can train different behaviors, particularly given that Grotmol describes the training of both simple and complex tasks." *Id.* at 56–57 (citing Ex. 1002 ¶ 139). According to Petitioner, it would have been obvious to a person of ordinary skill "that different trainers could be used to train behaviors involving different levels of complexity in order to take advantage of the varying skills and knowledge of trainers." *Id.* at 57. (citing Ex. 1002 ¶ 139). Thus, Petitioner contends, it would have been obvious in view of Grotmol and the knowledge of a person of ordinary skill "to have a second user perform an additional training resulting in additional correlation stored in the knowledgebase." *Id.*

Additionally, Petitioner argues, one of ordinary skill would have understood that "Grotmol discloses that a robot can be loaded with a first trained configuration learned during a training process involving operation of that robot by a user, and the robot can also be loaded with another trained configuration learned during [a] training process involving operation of a different (second) robot by a user." Pet. 57–58 (citing Ex. 1004, 33:24–35; Ex. 1002 ¶ 140).



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Patent Owner responds that "Grotmol discloses only one user operating one device in only one learning process," and therefore does not disclose the claimed "another user." Prelim. Resp. 35. Patent Owner acknowledges that Grotmol discloses that a "trained configuration may be loaded to one or more other robots in order to provide learned behaviors," but argues that "that portion of Grotmol only discloses that a trained configuration may be loaded from a first robot to a second robot," and does not disclose "that the second robot detects a fourth circumstance that is later included in a fourth circumstance representation as part of a fourth correlation in the knowledgebase." *Id.* at 36. Additionally, according to Patent Owner, "Grotmol fails to disclose that 'at least a portion of the fourth correlation is learned in another learning process' involving another user, as required by claim 11." *Id.* at 37. Thus, Petitioner contends, "Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in a second learning process with another user." *Id.*

Based on the present record, and as discussed above with respect to claim 4, we question whether Petitioner has sufficiently shown that Grotmol discloses a fourth correlation learned in another learning process by a second robot that is included as part of the knowledgebase along with the first and second correlations learned by the first robot. *See* § IV.D.3.(c). However, as discussed further in Section IV.F.4 below, we find that Petitioner has sufficiently shown for purposes of institution that this limitation would have been obvious over the combination of Grotmol and Hickman. Petitioner, if



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it so desires, may further address the issue of whether Grotmol anticipates claim 11 during the trial.

### *F. Unpatentability of Claims 4 and 11 as Obvious over Grotmol and Hickman*

Petitioner asserts that claims 4 and 11 would have been obvious over Grotmol in view of Hickman. Pet. 4, 58–66. We begin with an overview of Hickman, and then turn to the parties' contentions.

#### *1. Overview of Hickman (Ex. 1005)*

Hickman is titled "Shared Robot Knowledge Base for Use with Cloud Computing System." Ex. 1005, code (54). Hickman describes the following:

> The advantages of a shared robot knowledge base 306 multiply as robots are deployed around the world. If information about a particular object is "public" and therefore accessible by all robots, then information that a single robot learns about that object and uploads to the shared robot knowledge base 306 may be accessible by other robots all around the world. In operation, many millions or even many billions of robots may ultimately access the shared robot knowledge base 306. As a result, the shared robot knowledge base 306 enables robots to benefit from the collective information learned by many other robots.

*Id.* at 11:31–41.

#### *2. Motivation to Combine Grotmol and Hickman*

Petitioner argues that one of ordinary skill "would have been motivated to combine the autonomous robotic system of Grotmol with the shared robot knowledge base of Hickman." Pet. 58–61 (citing Ex. 1002 ¶¶ 142–149). Petitioner asserts that "Grotmol teaches that the training sets and training configurations from a first robot can be 'stored' or 'saved,'" and



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the saved training configuration "may then be 'loaded into the robot being trained thereby providing one or more trained behaviors to the robot.'" *Id.* at 59 (citing Ex. 1004, 33:12–58). "Further," according to Petitioner, "the 'trained configuration may be loaded to one or more *other robots* in order to provide learned behaviors.'" *Id.* (citing Ex. 1004, 33:30–32).

Petitioner argues that "Hickman teaches a shared robot knowledge base that could advantageously be paired with Grotmol's autonomous robotic system in order to further facilitate the sharing of learned behaviors." Pet. 59. Petitioner quotes the following excerpt from Hickman to support its position:

> The advantages of a shared robot knowledge base 306 multiply as robots are deployed around the world. If information about a particular object is "public" and therefore accessible by all robots, then information that a single robot learns about that object and uploads to the shared robot knowledge base 306 may be accessible by other robots all around the world. In operation, many millions or even many billions of robots may ultimately access the shared robot knowledge base 306. As a result, the shared robot knowledge base 306 enables robots to benefit from the collective information learned by many other robots.

*Id.* (quoting Ex. 1005, 11:31–41). According to Petitioner, "Hickman additionally teaches that 'dividing application execution and storage between client devices and the cloud computing system allows more processing to be performed by the cloud computing system, thereby taking advantage of the cloud computing system's processing power and capability, for example.'" *Id.* (quoting Ex. 1005, 5:42–46). Additionally, Petitioner contends, "Hickman further teaches that cloud computing may 'free users from certain hardware and software installation and maintenance tasks.'" *Id.* at 59–60 (citing Ex. 1005, 1:38–41).



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Petitioner argues that one of ordinary skill "would have been familiar with the teachings of both Grotmol and Hickman and would have readily appreciated the advantages of their combination." Pet. 60 (citing Ex. 1002 ¶¶ 142–149). In support, Petitioner cites a 2014 article in *Science* magazine including an interview with the CEO of the assignee of Grotmol which, Petitioner contends "expressly contemplated the benefits of the kinds of shared robot learning described in Hickman." *Id.* According to Petitioner, this article explains that:

> The Internet, in turn, will allow far-flung robots to share those lessons and skills. A robot that learns how to pick a strawberry without crushing it, for instance, could uplink that skill for the benefit of its kind around the globe.

*Id.* (quoting Ex. 1006, 183; citing Ex. 1002 ¶ 148).

Petitioner argues that both Grotmol and Hickman "are directed to the same field of the training and autonomous operation of robots," and "Hickman is listed on the face of Grotmol as a cited U.S. patent document." Pet. 60 (citing Ex. 1002 ¶¶ 142–147). Additionally, Petitioner contends, "Grotmol and Hickman also describe a similar problem in which a robot learns how to 'fetch' from a human," where "Grotmol describes the task as 'quite complex'" and "Hickman teaches that the fetch task can be 'optimiz[ed] . . . based on the collective experience of many different robots.'" *Id.* at 60–61 (citing Ex. 1005, 23:49–24:25; Ex. 1004, 24:31–48, 27:28–40, Fig. 9) (alteration in original). Relying on the testimony of Dr. Janet, Petitioner argues that "[t]he resulting combination of Grotmol's autonomous robotic system and Hickman's shared robot knowledgebase would have been expected and predictable." *Id.* at 61 (citing Ex. 1002 ¶ 150). "Grotmol expressly contemplates the sharing of trained configuration among robots," according to Petitioner, "and Hickman's



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expansion upon this idea does not interfere with Grotmol's autonomous robotic system." *Id.* (citing Ex. 1002 ¶¶ 142–149).

Patent Owner responds that Petitioner's proposed combination relies on "impermissible hindsight to arrive at the claimed invention." Prelim. Resp. 45. Patent Owner argues that "Grotmol discloses one user operating one device in one learning process," and that "[t]he knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process." *Id.* "Further," according to Patent Owner, "Hickman's simple cloud storage of object information does not contemplate using correlations and other data structures to learn knowledge for autonomous operation as required by claims 4 and 11." *Id.*

Patent Owner criticizes Petitioner's obviousness analysis as deficient "because it fails to explain what claim limitation is missing from Grotmol and how Hickman discloses the missing claim limitation." Prelim. Resp. 45. Patent Owner further argues that Petitioner's use of impermissible hindsight is highlighted by its assertion that "[i]n the combination of Grotmol and Hickman, the shared knowledge base[] would include multiple training sets (i.e., circumstance representations correlated with instruction set) learned during the operation of multiple devices," because "Petitioner is using the claimed sophisticated use of correlations, multiple users, and multiple devices as a roadmap for its obviousness combination." *Id.* at 45–46 (citing Pet. 63). Finally, according to Patent Owner, "it would not have been obvious to one skilled in the art to use Hickman's primitive cloud storage method with Grotmol's single-device training sets, as both references fail to



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contemplate the use of sophisticated data structures including correlations to enable autonomous operation." *Id.* at 46.

Based on the present record, we determined that Petitioner has established a reasonable likelihood that one of ordinary skill would have been motivated to combine Grotmol and Hickman as Petitioner proposes. First, we note that Patent Owner assertion that both Grotmol and Hickman "fail to contemplate the use of sophisticated data structures . . . to enable autonomous operation" does not appear to match up to the language of claims 4 and 11, which do not appear to require "sophisticated data structures." Based on the present record, we also find reasonable the assertions of Petitioner and Dr. Janet that both Grotmol and Hickman are directed to the same field of the training and autonomous operation of robots, that both references describe a similar problem in which a robot learns how to fetch from a human, and that one of ordinary skill would have understood that Hickman's shared robot knowledge base could have advantageously been paired with Grotmol's autonomous robotic system to further facilitate the sharing of learned behaviors. *See* Pet. 58–61; Ex. 1002 ¶¶ 142–149. Based on this record, we do not agree with Patent Owner's assertions that this analysis involves impermissible hindsight.

*3. Dependent Claim 4*

Petitioner argues that "Grotmol in combination with Hickman renders obvious the additional requirement of claim 4 that the knowledgebase includes a fourth correlation, which includes a circumstance representation detected by sensors of a second device correlated with an instruction set for operating the second device." Pet. 61 (citing Ex. 1002 ¶¶ 150–155). Petitioner asserts that "Grotmol discloses that the training sets and training



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configurations from a robot (which include the instruction sets for operating first device) can be 'stored' or 'saved," and the saved training configuration "may then be 'loaded into the robot being trained thereby providing one or more trained behaviors to the robot.'" *Id.* at 62 (citing Ex. 1004, 33:12–58). "Further," according to Petitioner, "the 'trained configuration may be loaded to one or more *other robots* in order to provide learned behaviors.'" *Id.* (citing Ex. 1004, 33:30–32). "Thus," Petitioner contends, "Grotmol discloses that the memory component of a first robot can store the claimed first and second correlations as well as a fourth correlation learned from operating a second robot—i.e., a circumstance detected by the sensor of a second robot correlated with instructions for operating that second robot." *Id.* (citing Ex. 1002 ¶ 152). For example, Petitioner argues, Grotmol discloses "situations in which the user may wish to train the robot to 'find an object, grasp it, and bring it back' (i.e., fetch)," explains that this "task of playing fetch may be quite complex," and "outlines numerous user training steps that would be needed in order to teach this skill to the robot." *Id.* (citing Ex. 1004, 24:31–25:5).

Petitioner argues that "Hickman discloses such a system wherein learned robot behaviors are uploaded to a shared knowledge base for use in other robots." Pet. 62. More specifically, Petitioner asserts, "Hickman discloses 'a shared robot knowledge bases for use with cloud computing systems'" that "'collects data from a robot about an object the robot has encountered in its environment," and "stores the received data in the shared robot knowledge base[,] . . . sends instructions for interacting with an object to a robot[,] . . . [and] sends instructions to a robot for executing an application based on information stored in the shared robot knowledge



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base.'" *Id.* at 63 (citing Ex. 1005, code (57)) (ellipses in original). "As noted in Hickman," Petitioner contends, "the 'information in the shared robot knowledge bases is updated based on robot experiences so that any particular robot may benefit from prior experiences of other robots.'" *Id.* And, according to Petitioner, Hickman discloses that "robot experiences" may include "'coaching' from humans" similar to "the training described in Grotmol." *Id.* (citing Ex. 1005, 23:36–48; Ex. 1002 ¶ 155). "For example," Petitioner asserts, "similar to the 'fetch' behavior described in Grotmol, Hickman describes a human coach training a robot how to properly grasp objects such as a cup, uploading and storing this information on a shared knowledge base (memory), then having another robot obtain these instructions from the memory and executing the instructions." *Id.* (citing Ex. 1005, 26:21–27:21).

"In the combination of Grotmol and Hickman," Petitioner argues, "the shared knowledge base[] would include multiple training sets (i.e., circumstance representations correlated with instruction set) learned during the operation of multiple devices." Pet. 63. "Accordingly," Petitioner contends, "the shared knowledge base[] would include training sets learned during operating of a first device (i.e., first and second circumstance representations correlated with first and second instruction sets for operating a first device) as well as trainings sets learned during operation of another device (i.e., fourth circumstance representation correlated with instruction set for operating a second device)." *Id.* (citing Ex. 1002 ¶¶ 150–155).

Patent Owner responds that "Grotmol does not disclose a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process and a



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fourth correlation learned on a second device in another learning process." Prelim. Resp. 41. Hickman, according to Patent Owner, "also does not disclose or suggest the claimed correlations including the fourth correlation learned in another learning process involving the second device, as required by claim 4." *Id.* Patent Owner acknowledges that "Hickman discloses a cloud system that can generally learn from multiple devices," but argues that "it does not disclose the claimed first and second correlations learned on one device in one learning process and the fourth correlation learned on a second device in a second learning process." *Id.* at 41–42. To the contrary, according to Patent Owner, Hickman merely "provides a primitive method for storing and sharing object information." *Id.* at 42 (citing Ex. 1005, code (57)). Thus, Patent Owner contends, Hickman does not disclose the claimed correlations and how those correlations are used in a knowledgebase to autonomously operate a device, as required by claim 4." *Id.*

Based on the present record, and for purposes of institution, we determine that Petitioner has demonstrated a reasonable likelihood that claim 4 would have been obvious over the combination of Grotmol and Hickman. *See* Pet. 61–64; Ex. 1002 ¶¶ 150–155. Additionally, based on the present record, Patent Owner's arguments do not overcome Petitioner's showing and do not squarely address Petitioner's proposed combination. Patent Owner argues that Grotmol does not disclose a knowledgebase with mixed knowledge of first and second correlations learned on one device and a fourth correlation learned on a second device, but Petitioner relies on Hickman to teach the use of a shared knowledgebase with learned multiple behaviors from multiple robots. *See* Pet. 62–63; Prelim Resp. 41. Patent Owner argues that Hickman does not disclose the claimed correlations, but



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Petitioner relies on Grotmol to disclose circumstance representations correlated with the various instruction sets. *See* Pet. 61–62; Prelim. Resp. 41–43. Therefore, Patent Owner's arguments view the references in isolation, rather than addressing the combination as a whole.

*4. Dependent Claim 11*

Petitioner argues that, as described above for Grounds 1 and 2, Grotmol discloses:

> (i) training a robot herein images (circumstance representations) detected by a camera during operation of the robot are correlated with motor commands (instructions); (ii) multiple training (learning) processes can be done to train multiple behaviors; and (iii) a robot can be loaded with a first trained configuration learned during a training process involving operation of that robot by a user, and can also be loaded with another trained configuration from a training process involving operation of a different robot by a user.

Pet. 64 (citing Ex. 1004, 33:24–35; Ex. 1002 ¶ 156).

Petitioner argues that "Hickman discloses 'a shared robot knowledge bases for use with cloud computing systems'" that "'collects data from a robot about an object the robot has encountered in its environment," and "stores the received data in the shared robot knowledge base[,] . . . sends instructions for interacting with an object to a robot[,] . . . [and] sends instructions to a robot for executing an application based on information stored in the shared robot knowledge base.'" Pet. 64–65 (citing Ex. 1005, code (57)) (ellipses in original). Petitioner asserts that, as noted in Hickman, the "information in the shared robot knowledge bases is updated based on robot experiences so that any particular robot may benefit from prior experiences of other robots." *Id.* at 65 (citing Ex. 1005, code (57)). Additionally, according to Patent Owner, Hickman discloses that "robot



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experiences" may include "'coaching' from *humans*'" like "the training described in Grotmol." *Id.* (citing Ex. 1005, 23:36–48; Ex. 1002 ¶ 156). "For example," Petitioner asserts, "similar to the 'fetch' behavior described in Grotmol, Hickman describes a human coach training a robot how to properly grasp objects such as a cup, uploading and storing this information on a shared knowledge base (memory), then having another robot obtain these instructions from the memory and executing the instructions." *Id.* (citing Ex. 1005, 26:21–27:21).

"As explained above," Petitioner argues, "it would have been obvious to combine Hickman's shared robot knowledge base with Grotmol's autonomous robot system such that the shared knowledgebase includes the training of multiple robots by multiple users." Pet. 65 (citing Ex. 1002 ¶ 157). "The combination," according to Petitioner, "discloses and renders obvious a knowledgebase that includes circumstance representations correlated with instructions for operating a first device (i.e., claimed first and second circumstance representations correlated with first and second instruction set for operating the first device) learned during a training using the first device," and "also includes a circumstance representation correlated with instructions for operating a different device (i.e., claimed fourth circumstance representation correlated with fourth instruction set for operating a second device) learned during a training using the different device." *Id.* at 65–66 (citing Ex. 1002 ¶¶ 156–157).

Patent Owner responds that, "as discussed above regarding Ground 1 and claim 11, Grotmol does not disclose or suggest the claimed 'fourth correlation,' 'another user' and the 'second device' in claim 11." Prelim. Resp. 43. More specifically, Patent Owner argues, "Grotmol does not



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disclose or suggest that the knowledgebase includes the claimed fourth correlation learned in another learning process involving the second device and another user." *Id.* at 43–44. "As discussed above regarding claim 4," Patent Owner asserts, "Grotmol discloses one user operating one device in one learning process," and "[t]he knowledge gained from this process in Grotmol, when loaded into a second device, is still knowledge of one user operating one device in one learning process." *Id.* at 44. Thus, according to Petitioner, "Grotmol does not disclose or suggest a knowledgebase that includes mixed knowledge of a first correlation and second correlation learned on one device in one learning process with one user and a fourth correlation learned on a second device in another learning process with another user." *Id.*

Petitioner argues that "Hickman also does not disclose or suggest the claimed correlations including the fourth correlation learned in another learning process involving the second device and another user, as required by claim 11." Prelim. Resp. 44. According to Petitioner, "Hickman discloses a cloud system that can generally learn from multiple devices, but it does not disclose the claimed first and second correlations learned on one device in one learning process with one user and the fourth correlation learned on a second device in a second learning process with another user." *Id.*

Accordingly, Patent Owner argues, "[f]or the same reasons discussed above with respect to claim 4, Hickman does not disclose or suggest the claimed correlations and how those correlations are used in a knowledgebase to autonomously operate a device, as required by claim 11." Prelim. Resp.



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44. " Thus," Patent Owner contends, "Grotmol and Hickman do not disclose or suggest the features of claim 11." *Id.*

Based on the present record, and for purposes of institution, we determine that Petitioner has demonstrated a reasonable likelihood that claim 11 would have been obvious over the combination of Grotmol and Hickman. *See* Pet. 64–66; Ex. 1002 ¶¶ 156–157. Additionally, based on the present record, Patent Owner's arguments, which are similar to its arguments for claim 4, do not overcome Petitioner's showing and do not squarely address Petitioner's proposed combination. Patent Owner argues that Grotmol does not disclose a knowledgebase with mixed knowledge of first and second correlations learned on one device and a fourth correlation learned on a second device in another learning process with another user, but Petitioner relies on Hickman to teach the use of a shared knowledgebase with learned multiple behaviors from multiple robots. *See* Pet. 64–66; Prelim Resp. 44. Additionally, Patent Owner argues that Hickman does not disclose the claimed correlations, but Petitioner relies on Grotmol to disclose circumstance representations correlated with the various instruction sets. *See* Pet. 27, 64; Prelim. Resp. 44. Therefore, Patent Owner's arguments view the references in isolation, rather than addressing the combination as a whole.

## V. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated that there is a reasonable likelihood that it would prevail in proving the unpatentability of at least one of the challenged claims of the '974 patent. We thus institute an *inter partes* review of all of the challenged



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claims of the '974 patent on all grounds asserted in the Petition. *See* 37 C.F.R. § 42.108(a).

Any findings or conclusions in this Decision are made only for the purposes of institution and are not dispositive of any issue. We have not made a final determination with respect to the patentability of any challenged claim. Our final determination will be based on the record as fully developed during trial, including any evidence or argument timely presented by the parties under our Rules.

## VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 4–5, 7, 11, and 14–15 of the '974 patent is hereby instituted on all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.



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Tesla v. Autonomous
IPR2023-01055

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## Disclaimer

**10,452,974 B1** - Jasmin Cosic, Miami, FL (US). ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION. Patent dated October 22, 2019. Disclaimer filed September 14, 2023, by the assignee, Autonomous Devices LLC.

I hereby disclaim the following complete claims 1, 2, 3, 6, 8, 9, 10, 12, 13, 16, 17, 18, 19 and 20 of said patent.

*(Official Gazette, October 24, 2023)*

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | |

**CONFIRMATION NO. 1993**

189567
Autonomous Devices LLC
2271 Myla Lane
Melbourne, FL 32935

**POA ACCEPTANCE LETTER**

*OC000000061920866*

Date Mailed: 09/15/2023

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/12/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/

Doc Code: STAT.DISCLMR
Document Description: Statutory Disclaimers per Manual of Patent Examining Procedure(MPEP) 1490

PTO/SB/43 (06-23)
Approved for use through 05/31/2024. OMB 0651-0031
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## DISCLAIMER IN A PATENT UNDER 37 CFR 1.321(a)

| Name of Patentee | Docket Number (optional) |
|---|---|
| Autonomous Devices LLC | |
| **Patent Number** 10,452,974 | **Date Patent Issued** 10/22/2019 |

Title of Invention: ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION

Patentee hereby disclaims:

- [x] the following complete claim(s) in the above-identified patent: 1, 2, 3, 6, 8, 9, 10, 12, 13, 16, 17, 18, 19, and 20.
- [ ] the terminal part of the term of the above-identified patent beginning on the date: _____.
- [ ] the entire term of the above-identified patent.

The disclaimer is binding on the patentee and its successors or assigns.

The extent of patentee's ownership interest in the above-identified patent is: 100% (REEL / FRAME. 060907 / 0195).

The fee for this disclaimer is set forth in 37 CFR 1.20(d) and is being paid in the following manner:

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- [ ] patentee. If patentee is a juristic entity, the undersigned is authorized to act on behalf of the juristic entity.
- [x] attorney or agent of record.

| Signature | Date |
|---|---|
| /Mark Marrello/ | 09/14/2023 |
| **Name (printed/typed)** Mark Marrello | **Practitioner registration number** 69378 |

***Note:*** See 37 CFR 1.4(d) for signature requirements and certifications.

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# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15340991 |
| **Filing Date:** | 02-Nov-2016 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Filer:** | Mark David Marrello |
| **Attorney Docket Number:** | |

Filed as Small Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
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| **Miscellaneous:** | | | | |
| STATUTORY OR TERMINAL DISCLAIMER | 2814 | 1 | 170 | 170 |
| | | **Total in USD ($)** | | **170** |

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|---|---|
| **EFS ID:** | 48590437 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 189567 |
| **Filer:** | Mark David Marrello |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 14-SEP-2023 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 20:13:12 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| 1 | Statutory disclaimers per Manual of Patent Examining Procedure(MPEP) 1490. | sb0043_10452974.pdf | 221833<br>1e89d1b3a969cf626610a7c94997982eceaf5f0c | no | 2 |
| **Warnings:** | | | | | |
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| 2 | Fee Worksheet (SB06) | fee-info.pdf | 37894<br>528519cabdfa6fb6a07ee607f86ce4541e65de174 | no | 2 |
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| **EFS ID:** | 48573010 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Mark David Marrello |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 12-SEP-2023 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 12:45:34 |
| **Application Type:** | Utility under 35 USC 111(a) |

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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Application Data Sheet | ADS_Printed.pdf | 64703<br>64258889f662b106a05b06f511b5d1f1a94 25af | no | 8 |

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| 2 | Power of Attorney | POA_10452974.pdf | 538313<br>74df216b309bd27a8bd092a1b9a5d76fd23afb6a | no | 7 |
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| | | | **Total Files Size (in bytes):** | 603016 | |

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**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | 15/340,991 |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

## Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Inventor Information:

**Inventor 1** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Jasmin | | Cosic | |

**Residence Information (Select One)** ◉ US Residency ○ Non US Residency ○ Active US Military Service

| City | Melbourne | State/Province | FL | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

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|---|---|---|---|
| Address 2 | | | |
| City | Melbourne | State/Province | FL |
| Postal Code | 32935 | Country | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

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**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

| Customer Number | 189567 | | |
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| Email Address | cpapc29@hotmail.com | Add Email | Remove Email |

## Application Information:

| Title of the Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | | |
|---|---|---|---|
| Attorney Docket Number | | Small Entity Status Claimed | ☒ |
| Application Type | Nonprovisional | | |
| Subject Matter | Utility | | |
| Total Number of Drawing Sheets (if any) | 40 | Suggested Figure for Publication (if any) | 2 |

PTO/AIA/14 (11-15)
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | 15/340,991 |
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## Filing By Reference:

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For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
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## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☒ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
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## Domestic Benefit/National Stage Information:

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| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | 15/340,991 |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

| Application Number | Country[i] | Filing Date (YYYY-MM-DD) | Access Code[i] (if applicable) |
|---|---|---|---|
| | | | |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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## Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

**NOTE**: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

**1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)**

**A. Priority Document Exchange (PDX)** - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

**B. Search Results from U.S. Application to EPO** - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

**2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)**

☒ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☒ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

**NOTE:** Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | |
|---|---|---|
| | Application Number | |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

**Applicant 1**

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

| | | |
|---|---|---|
| ◉ Assignee | ○ Legal Representative under 35 U.S.C. 117 | ○ Joint Inventor |
| ○ Person to whom the inventor is obligated to assign | ○ Person who shows sufficient proprietary interest | |

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

| Organization Name | Autonomous Devices LLC |
|---|---|

**Mailing Address Information For Applicant:**

| | | | |
|---|---|---|---|
| **Address 1** | 2271 Myla Lane | | |
| Address 2 | | | |
| **City** | Melbourne | **State/Province** | FL |
| **Country** | US | Postal Code | 32935 |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Applicant Data may be generated within this form by selecting the Add button.

## Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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**Assignee 1**

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

**Mailing Address Information For Assignee including Non-Applicant Assignee:**

| | | | |
|---|---|---|---|
| **Address 1** | | | |
| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** i | | Postal Code | |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

## Signature:

**NOTE:** This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

| **Signature** | /Mark Marrello/ | | | Date (YYYY-MM-DD) | 2023-09-12 |
|---|---|---|---|---|---|
| First Name | Mark | Last Name | Marrello | Registration Number | 69378 |

Additional Signature may be generated within this form by selecting the Add button.

PTO/AIA/14 (11-15)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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# POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

[X] Practitioners associated with Customer Number: 189567

**OR**

[ ] Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

| Name | Registration Number |
|---|---|
| | |
| | |
| | |
| | |
| | |

| Name | Registration Number |
|---|---|
| | |
| | |
| | |
| | |
| | |

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

[X] The address associated with Customer Number:

**OR**

[ ]

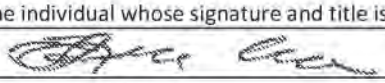
| | | |
|---|---|---|
| Firm or individual name | | |
| Address | | |
| City | State | Zip |
| Country | | |
| Telephone | Email | |

Assignee name and address: Autonomous Devices LLC
2271 Myla Lane, Melbourne, FL 32935

**A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.**

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

| | |
|---|---|
| Signature  | Date 9/11/2023 |
| Name Jasmin Cosic | Telephone 317-772-1312 |
| Title CEO | |

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

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# STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Autonomous Devices LLC

Application No./Patent No.: 15/340,991 Filed/Issue Date: 11/02/2016

Titled: Artificially intelligent systems, devices, and methods for learning and/or using a device's circumstances for autonomous device operation

Autonomous Devices LLC, a limited liability company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 060907, Frame 0195, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

   1. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

   2. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.



This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

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## STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

| | |
|---|---|
|  | 9/11/2023 |
| Signature | Date |
| Jasmin Cosic | CEO |
| Printed or Typed Name | Title or Registration Number |

# ASSIGNMENT OF PATENT RIGHTS

For good and valuable consideration the receipt of which is hereby acknowledged, Jasmin Cosic (**"Assignor"**), an individual having an address at 2271 Myla Lane, Melbourne, FL 32935, does hereby sell, assign, transfer, and convey unto Autonomous Devices LLC (**"Assignee"**), a Florida limited liability company having an address at 2271 Myla Lane, Melbourne, FL 32935, all his right, title, and interest in and to any and all of the following (collectively the **"Patent Rights"**):

a) the patent applications and patents listed in the table below (the **"Patents"**);
b) all patents issuing from the Patents;
c) all continuing applications, counterpart applications, foreign equivalent applications, divisional and continuation-in-part applications, substitution applications, reissue applications, extensions, renewals and reexamination applications of any of the Patents and patents that may issue from such applications;
d) all related patent filing and prosecution documents;
e) rights to apply in any or all countries of the world for patents, certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any of the Patents and the inventions, invention disclosures, and discoveries therein;
f) all inventions and discoveries described in any of the Patents or subject matter capable of being reduced to a patent claim in any of the Patents based on the specification of any of the Patents;
g) priority rights in any and all patent filings available from and/or through the Patents;
h) causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of any of the Patents or of any patent that issues from any of the Patents, including, without limitation, all causes of action and other enforcement rights for (1) damages, (2) injunctive relief, and (3) any other remedies of any kind for past, current and future infringement and all of the proceeds from the foregoing that are accrued and unpaid or that are hereafter accruing;
i) rights to collect royalties or other payments under or on account of any of the Patents and/or any of the foregoing categories (a) through (h); and
j) rights of cooperation assigned or granted by any third party under or on account of any of the Patents and/or any of the foregoing categories (a) through (i).

| Title | Country | Application Number | Patent Number | Issue Date |
|---|---|---|---|---|
| MACHINE LEARNING FOR COMPUTING ENABLED SYSTEMS AND/OR DEVICES | US | 16/584,736 | 11,055,583 | 7/6/2021 |
| MACHINE LEARNING FOR COMPUTING ENABLED SYSTEMS AND/OR DEVICES | US | 15/822,150 | 10,474,934 | 11/12/2019 |
| DEVICES, SYSTEMS, AND METHODS FOR USE IN AUTOMATION | US | 15/818,765 | 10,102,449 | 10/16/2018 |

| | | | | |
|---|---|---|---|---|
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | US | 16/540,972 | 11,238,344 | 2/1/2022 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | US | 15/340,991 | 10,452,974 | 10/22/2019 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING VISUAL SURROUNDING FOR AUTONOMOUS OBJECT OPERATION | US | 15/245,046 | 9,864,933 | 1/9/2018 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING VISUAL SURROUNDING FOR AUTONOMOUS OBJECT OPERATION | US | 15/835,434 | 10,210,434 | 2/19/2019 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING VISUAL SURROUNDING FOR AUTONOMOUS OBJECT OPERATION | US | 15/829,984 | 10,223,621 | 3/5/2019 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING VISUAL SURROUNDING FOR AUTONOMOUS OBJECT OPERATION | US | 16/237,743 | 11,113,585 | 9/7/2021 |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING AN AVATAR'S CIRCUMSTANCES FOR AUTONOMOUS AVATAR OPERATION | US | 15/382,743 | 10,607,134 | 3/31/2020 |
| MACHINE LEARNING FOR | US | 15/842,885 | 10,402,731 | 9/3/2019 |

| | | | | |
|---|---|---|---|---|
| COMPUTER GENERATED OBJECTS AND/OR APPLICATIONS | | | | |
| MACHINE LEARNING FOR COMPUTING ENABLED SYSTEMS AND/OR DEVICES | US | 17/332,337 | N/A | N/A |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | US | 17/561,976 | N/A | N/A |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING VISUAL SURROUNDING FOR AUTONOMOUS OBJECT OPERATION | US | 17/394,024 | N/A | N/A |
| ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING AN AVATAR'S CIRCUMSTANCES FOR AUTONOMOUS AVATAR OPERATION | US | 16/796,663 | N/A | N/A |
| DEVICES, SYSTEMS, AND METHODS FOR USE IN AUTOMATION | US | 16/120,253 | N/A | N/A |
| DEVICES, SYSTEMS, AND METHODS FOR USE IN AUTOMATION | US | 17/345,931 | N/A | N/A |
| MACHINE LEARNING FOR COMPUTER GENERATED OBJECTS AND/OR APPLICATIONS | US | 16/502,386 | N/A | N/A |
| MACHINE LEARNING FOR COMPUTER GENERATED OBJECTS AND/OR APPLICATIONS | US | 17/384,786 | N/A | N/A |

Assignor represents, warrants and covenants that:

Assignor has the full power and authority required to enter into this Agreement and to carry out its obligations hereunder including the assignment of the Patent Rights to Assignee.

Assignor hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Patent Rights in the name of Assignee, as the assignee to the entire interest therein.

The terms and conditions of this Assignment of Patent Rights will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon Assignor, its successors, assigns, and other legal representatives.

IN WITNESS WHEREOF this Assignment of Patent Rights is executed at

MELBOURNE, FL (Location) on 8.25.2022. (Date)

Assignor: _____

Jasmin Cosic

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 10/22/2019 | 10452974 | | 1993 |

116094 7590 10/02/2019

Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

# ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 525 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Jasmin Cosic, Miami, FL;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



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## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

116094 7590 06/24/2019

Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

| | |
|---|---|
| Jasmin Cosic | (Typed or printed name) |
| /Jasmin Cosic/ | (Signature) |
| August 16, 2019 | (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | | 1993 |

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $500 | $0.00 | $0.00 | $500 | 09/24/2019 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| GARCIA, SANTIAGO | 2668 | 382-155000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ☒ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Jasmin Cosic/ Date August 16, 2019

Typed or printed name Jasmin Cosic Registration No. _____



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IPR2023-01055

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15340991 |
| **Filing Date:** | 02-Nov-2016 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Filer:** | Jasmin Cosic |
| **Attorney Docket Number:** | |

Filed as Small Entity

**Filing Fees for Utility under 35 USC 111(a)**

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| UTILITY APPL ISSUE FEE | 2501 | 1 | 500 | 500 |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **500** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 36903735 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 16-AUG-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 18:14:30 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | CARD |
| Payment was successfully received in RAM | $500 |
| RAM confirmation Number | E20198FI18163567 |
| Deposit Account | |
| Authorized User | |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | PTOL-85B_Issue_Fee_Form.pdf | 87585<br>25f61878f8d47c7d0023a3252e8d625208f8230f | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 29903<br>a1443dbe45e9b7975c9904ab21d1f5d6b0023dd8 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 117488 | | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | | 1993 |

116094 7590 08/08/2019

Jasmin Cosic
108 Woodbury Street
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| EXAMINER |
|---|
| GARCIA, SANTIAGO |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2668 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 08/08/2019 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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| Response to Rule 312 Communication | Application No. | Applicant(s) | |
|---|---|---|---|
| | 15/340,991 | Cosic, Jasmin | |
| | Examiner | Art Unit | AIA Status |
| | SANTIAGO GARCIA | 2668 | Yes |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

1. ☑ The amendment filed on 27 July 2019 under 37 CFR 1.312 has been considered, and has been:

a) ☐ entered.

b) ☑ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

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/SANTIAGO GARCIA/
Primary Examiner, Art Unit 2668



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IPR2023-01055

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| Inventor: | Jasmin Cosic | Confirmation No.: 1993 |
| Title: | "ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION" | |
| Serial No.: | 15/340,991 | Filed: November 2, 2016 |
| Examiner: | GARCIA, SANTIAGO | Group Art Unit: 2668 |

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*Via EFS-Web* July 27, 2019

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

## AMENDMENT PURSUANT TO 37 C.F.R. 1.312

Dear Commissioner:

In response to notice of allowance (hereinafter "Notice of Allowance") dated June 24, 2019 and pursuant to 37 C.F.R. 1.312, the applicant hereby amends the listing of claims that the Examiner filed in the Examiner's amendment in the Notice of Allowance.

## Listing of Claims

61. (currently amended) A method implemented using a computing system that includes one or more processor circuits, the method comprising:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and



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at least in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or ~~[[a]]~~ the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

62. (previously presented) The method of claim 61, wherein the knowledgebase further includes: a first knowledge cell and a second knowledge cell, and wherein the first knowledge cell includes the first correlation and the second knowledge cell includes the second correlation.

63. (previously presented) The method of claim 61, wherein the learning process includes: creating, inserting, deleting, modifying, or manipulating an element of the first correlation, or creating, inserting, deleting, modifying, or manipulating an element of the second correlation.

64. (previously presented) The method of claim 61, wherein the learning process includes:

generating or receiving the first circumstance representation, and generating or receiving the second circumstance representation; and

obtaining or receiving the first one or more instruction sets for operating the first device, and obtaining or receiving the second one or more instruction sets for operating the first device, and wherein the knowledgebase further



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includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes:

generating or receiving the fourth circumstance representation; and

obtaining or receiving the fourth one or more instruction sets for operating the second device.

65. (currently amended) The method of claim 61, wherein the anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation includes:

determining that a number of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number[[;]], or

determining that a percentage of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold percentage.

66. (previously presented) The method of claim 61, wherein the at least the portion of the first correlation and the at least the portion of the second



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correlation are learned in the learning process while the user operates the first device, and wherein the one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process correspond to the user's methodology of operating the first device learned in the learning process.

67. (previously presented) The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating: the first device, the second device, or a third device, and wherein a first connection is generated to connect the first correlation with the second correlation, and wherein a second connection is generated to connect the second correlation with the fourth correlation.

68. (previously presented) The method of claim 61, further comprising:

modifying the first one or more instruction sets for operating the first device learned in the learning process or a copy of the first one or more instruction sets for operating the first device learned in the learning process, and wherein the executing the first one or more instruction sets for operating the first device learned in the learning process includes executing the modified the first one or more instruction sets for operating the first device learned in the learning process or the modified the copy of the first one or more instruction sets for operating the first device learned in the learning process, and wherein the



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performing, by the first device or by the second device, the one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process includes performing, by the first device or by the second device, one or more operations defined by the modified the first one or more instruction sets for operating the first device learned in the learning process or by the modified the copy of the first one or more instruction sets for operating the first device learned in the learning process.

69. (previously presented) The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the first device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes operating the first device at least partially by the user.

70. (previously presented) The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the first device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the fourth correlation is learned in



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another learning process that includes operating the first device at least partially by another user.

71. (previously presented) The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes operating the second device at least partially by another user.

72. (previously presented) The method of claim 61, wherein the first circumstance includes one or more objects detected at least in part by the one or more sensors of the first device at a first time or during a first time period, and wherein the second circumstance includes one or more objects detected at least in part by the one or more sensors of the first device at a second time or during a second time period, and wherein the third circumstance includes: one or more objects detected at least in part by the one or more sensors of the first device at a third time or during a third time period, or one or more objects detected at least in part by the one or more sensors of the second device at a third time or during a third time period.



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73. (currently amended) The method of claim 61, wherein the first circumstance representation is a data structure including one or more data about the first circumstance of the first device, and wherein the second circumstance representation is a data structure including one or more data about the second circumstance of the first device, and wherein the third circumstance representation is a data structure including one or more data about: the third circumstance of the first device, or the third circumstance of the second device.

74. (previously presented) The method of claim 61, wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more object representations, or one or more collections of object representations.

75. (currently amended) The method of claim 61, wherein, to correlate the first circumstance representation with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first circumstance representation, and wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations.



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76. (previously presented) The method of claim 61, wherein the anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation includes determining the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation.

77. (previously presented) The method of claim 61, wherein elements of the computing system are included in: a single device, or multiple devices, and wherein the one or more processor circuits include: one or more microcontrollers, one or more computing circuits, or one or more electronic circuits, and wherein the memory includes: a volatile memory, or a non-volatile memory, and wherein the first device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein the second device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein an instruction set of the first one or more instruction sets for operating the first device includes at least one selected from the group comprising: only one instruction, a plurality of instructions, one or more inputs, one or more commands, one or more computer commands, one or more keywords, one or more symbols, one or more operators, one or more variables, one or more values, one or more objects or object references, one or more data structures or



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data structure references, one or more functions or function references, one or more parameters, one or more signals, one or more characters, one or more digits, one or more user operating directions, one or more user directions, one or more user inputs, one or more representations of one or more user actions, one or more representations of one or more user clicks, one or more binary bits, one or more assembly language commands, one or more states, one or more codes, one or more data, and one or more information, and wherein an instruction set of the second one or more instruction sets for operating the first device includes at least one selected from the group comprising: only one instruction, a plurality of instructions, one or more inputs, one or more commands, one or more computer commands, one or more keywords, one or more symbols, one or more operators, one or more variables, one or more values, one or more objects or object references, one or more data structures or data structure references, one or more functions or function references, one or more parameters, one or more signals, one or more characters, one or more digits, one or more user operating directions, one or more user directions, one or more user inputs, one or more representations of one or more user actions, one or more representations of one or more user clicks, one or more binary bits, one or more assembly language commands, one or more states, one or more codes, one or more data, and one or more information, and wherein the one or more sensors of the first device include at least one selected from the group comprising: one or more cameras, one or more microphones, one or more radars, one or more lidars, one or more sonars, and one or more apparatuses for detecting objects or object properties,



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and wherein the one or more sensors of the second device include at least one selected from the group comprising: one or more cameras, one or more microphones, one or more radars, one or more lidars, one or more sonars, and one or more apparatuses for detecting objects or object properties, and wherein the at least the portion of the first correlation includes: one portion of the first correlation, multiple portions of the first correlation, all portions of the first correlation, or the entire first correlation, and wherein the at least the portion of the second correlation includes: one portion of the second correlation, multiple portions of the second correlation, all portions of the second correlation, or the entire second correlation, and wherein an object of the first circumstance is the same as an object of the third circumstance, or multiple objects of the first circumstance are the same as multiple objects of the third circumstance, or all objects of the first circumstance are the same as all objects of the third circumstance, or all objects of the first circumstance are different than all objects of the third circumstance.

78. (currently amended) One or more non-transitory machine readable media storing machine readable code that when executed by one or more processor circuits causes the one or more processor circuits to perform at least:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or



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more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

at least in response to the anticipating, causing the first device or ~~[[a]]~~ the second device to perform one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process at least by causing the one or more processor circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device learned in the learning process.

79. (currently amended) A system comprising:



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a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

means for generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

means for anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

means for executing, at least in response to the anticipating, the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or ~~[[a]]~~ the second device autonomously



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performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

80. (previously presented) The system of claim 79, wherein the means for generating or receiving the third circumstance representation includes one or more processor circuits, and wherein the means for anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation includes one or more processor circuits, and wherein the means for executing, at least in response to the anticipating, the first one or more instruction sets for operating the first device learned in the learning process includes one or more processor circuits.



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## Remarks

I. 37 C.F.R. 1.312 Amendment

Entry of the foregoing amendments is respectfully requested pursuant to 37 C.F.R. 1.312.

The amendments to claims 61, 65, 73, 75, 78, and 79 are needed to correct minor typographical errors as indicated.

No additional search or examination is needed because the claims correct minor typographical errors. The claims are patentable for the same reasons as those outlined in the Notice of Allowance.

If the Examiner would like to discuss any aspect of this application, the Examiner is respectfully requested to contact the undersigned at (317) 772-1312.

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

By /Jasmin Cosic/
Jasmin Cosic

Date submitted: July 27, 2019

Respectfully submitted.

/Jasmin Cosic/

Jasmin Cosic



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IPR2023-01055

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 36707654 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 27-JUL-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 21:34:14 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | 312_Amendment.pdf | 57078<br>a154a65003ae6c42ae7b7d161222f6d6ccd2ff45 | yes | 15 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Amendment after Notice of Allowance (Rule 312) | 1 | 1 |
| | Claims | 2 | 14 |
| | Applicant Arguments/Remarks Made in an Amendment | 15 | 15 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 57078 | |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| Inventor: | Jasmin Cosic | Confirmation No.: 1993 |
| Title: | "ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION" | |
| Serial No.: | 15/340,991 | Filed: November 2, 2016 |
| Examiner: | GARCIA, SANTIAGO | Group Art Unit: 2668 |

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*Via EFS-Web* July 18, 2019

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

## COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Dear Commissioner:

In response to the Notice of Allowance (hereinafter "Notice of Allowance") dated June 24, 2019 concerning the above-identified application, the applicant respectfully submits the following Comments on Statement of Reasons for Allowance for the record.

A good summary of the claimed invention can be found in the abstract and independent claim 61.

With respect to at least some of the elements of the claimed invention that

prior art does not disclose, the Examiner notes that the claimed invention is allowable at least because "the prior art does not disclose the device that operates as the user directs it, hence, does not disclose learning the device operation from the user directing the device. Prior art discloses a system that explores its own environment on its own, which is very different from relying on the user to direct it. Prior art does not disclose the first and the second correlations that each include a circumstance representation correlated with instruction sets. Prior art does not disclose the knowledgebase, which includes a 3-level nested data structure recited in the independent claims. Such as individual circumstance representation (a data structure itself) and individual instruction set (a data structure itself when learned in the learning process). And correlation (a data structure itself) that includes a circumstance representation correlated with instruction sets. And knowledgebase a data structure itself including a plurality of correlation data structures in various arrangements. Further autonomous operation of the device in the claims performs the operation and does not rely on the re-training such as in the prior art as noted below, and the re-training is a crucial function in the proper operating of the systems in the prior art." Each of the above-noted individual elements that prior art does not disclose and especially some or all of them combined render all claims of the claimed invention allowable.

With respect to at least some of the differences between the claimed invention and Schnittman, the training in Schnittman is different than the learning process recited in independent claims 61, 78, and 79 because the training in Schnittman does not include a user operating a device recited in independent claims 61, 78, and 79, and what is learned in the training in Schnittman is different than what is learned (i.e. at least a portion of a first and a second correlations each correlation including one or more circumstance representations correlated with one or more instruction sets, etc.) in the learning process recited in independent claims 61, 78, and 79. Therefore, the learning process itself is



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different and the artificial knowledge learned in the learning process is different. Further, robot behavior or determining robot behavior in Schnittman is not the same as the "first one or more instruction sets for operating the first device learned in the learning process" recited in independent claims 61, 78, and 79 since robot behavior in Schnittman is not learned in a learning process that includes a user operating the robot. In fact, in Fig. 4 "Programmed Behaviors 430", Schnittman teaches programmed robot behavior and, therefore, teaches away from instruction sets learned in a learning process that includes a user operating a device recited in independent claims 61, 78, and 79. Further, images, buffer, and database in Schnittman 545 are all different than a correlation including one or more circumstance representations correlated with one or more instruction sets. Further, the classifier in Schnittman is not the same as any element of independent claims 61, 78, and 79.

The above-noted include only a few of many claimed limitations that prior art does not disclose and other differences. In view of at least the above-noted claimed limitations that prior art does not disclose and other differences, the prior art references do not disclose the claimed invention, the specifics of the claimed invention, nor the broad spectrum idea.

The applicant respectfully submits that the allowed claims should not be construed as an admission that the claims as previously presented are not patentable, or that the cited references anticipate or render obvious the claims as previously presented. Indeed, the applicant respectfully submits that the claims as previously presented, and/or further amendments thereto, also contain patentable subject material. Thus, the applicant reserves the right to pursue the claims as previously presented, and/or further amendments thereto, in one or more continuation applications.

If the Examiner would like to discuss any aspect of this application, the



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Tesla v. Autonomous
IPR2023-01055

Inventor: Jasmin Cosic
Serial No.: 15/340,991
Filing Date: November 2, 2016

Examiner is respectfully requested to contact the undersigned at (317) 772-1312.

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

By /Jasmin Cosic/
Jasmin Cosic

Date submitted: July 18, 2019

Respectfully submitted,

/Jasmin Cosic/

Jasmin Cosic



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Tesla v. Autonomous
IPR2023-01055

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 36629789 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 18-JUL-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 18:24:33 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Miscellaneous Incoming Letter | COMMENTS_ON_STATEMENT_OF_REASONS_FOR_ALLOWANCE.pdf | 23561<br>7e8226566e6102617ecc7c66e547b32ce0577d8ea | no | 4 |

**Warnings:**

| Information: | |
|---|---|
| Total Files Size (in bytes): | 23561 |

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

# NOTICE OF ALLOWANCE AND FEE(S) DUE

116094 7590 06/24/2019

Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

| EXAMINER | |
|---|---|
| GARCIA, SANTIAGO | |
| ART UNIT | PAPER NUMBER |
| 2668 | |

DATE MAILED: 06/24/2019

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | | 1993 |

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $500 | $0.00 | $0.00 | $500 | 09/24/2019 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.**





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Tesla v. Autonomous
IPR2023-01055

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

116094 7590 06/24/2019

Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)

(Signature)

(Date)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | | 1993 |

TITLE OF INVENTION: ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | SMALL | $500 | $0.00 | $0.00 | $500 | 09/24/2019 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| GARCIA, SANTIAGO | 2668 | 382-155000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | Jasmin Cosic | | 1993 |

116094 7590 06/24/2019

Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

| EXAMINER | |
|---|---|
| GARCIA, SANTIAGO | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2668 | |

DATE MAILED: 06/24/2019

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.





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Tesla v. Autonomous
IPR2023-01055

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or a patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Tesla v. Autonomous
IPR2023-01055

| Notice of Allowability | Application No. 15/340,991 | Applicant(s) Cosic, Jasmin | |
|---|---|---|---|
| | Examiner SANTIAGO GARCIA | Art Unit 2668 | AIA (FITF) Status Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 06/17/19 last set of claims submitted.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 61-80 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All  b) ☐ Some  *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file areply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/SANTIAGO GARCIA/
Primary Examiner, Art Unit 2668



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***Notice of Pre-AIA or AIA Status***

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

***Claim Interpretation***

The following is a quotation of 35 U.S.C. 112(f):

> (f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

(A) the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;

(B) the term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that"; and

(C) the term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word "means" (or "step") in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word "means" (or "step") in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations 79-80 in this application that use the word "means" (or "step") are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word "means" (or "step") are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Jasmin, Cosic on 6/18/19.

All claims 61-80 are amended as follows, all claims are currently amended.

The application has been amended as follows:

61. A method implemented using a computing system that includes one or more processor circuits, the method comprising:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

at least in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or [[a]] the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

62. The method of claim 61, wherein the knowledgebase further includes: a first knowledge cell and a second knowledge cell, and wherein the first knowledge cell includes the first correlation and the second knowledge cell includes the second correlation.

63. The method of claim 61, wherein the learning process includes: creating, inserting, deleting, modifying, or manipulating an element of the first correlation, or creating, inserting, deleting, modifying, or manipulating an element of the second correlation.

64. The method of claim 61, wherein the learning process includes:

generating or receiving the first circumstance representation, and generating or receiving the second circumstance representation; and

obtaining or receiving the first one or more instruction sets for operating the first device, and obtaining or receiving the second one or more instruction sets for operating the first device, and wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least

in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes:

generating or receiving the fourth circumstance representation; and

obtaining or receiving the fourth one or more instruction sets for operating the second device.

65. The method of claim 61, wherein the anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation includes:

determining that a number of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold number; or

determining that a percentage of at least partially matching portions of the third circumstance representation and portions of the first circumstance representation exceeds a threshold percentage.

66. The method of claim 61, wherein the at least the portion of the first correlation and the at least the portion of the second correlation are learned in the learning process while the user operates the first device, and wherein the one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process correspond to the user's methodology of operating the first device learned in the learning process.

67. The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating: the first device, the second device, or a third device, and wherein a first connection is generated to connect the first correlation with the second correlation, and wherein a second connection is generated to connect the second correlation with the fourth correlation.

68. The method of claim 61, further comprising:

modifying the first one or more instruction sets for operating the first device learned in the learning process or a copy of the first one or more instruction sets for operating the first device learned in the learning process, and wherein the executing the first one or more instruction sets for operating the first device learned in the learning process includes executing the modified the first one or more instruction sets for operating the first device learned in the learning process or the modified the copy of the first one or more instruction sets for operating the first device learned in the learning process, and wherein the performing, by the first device or by the second device, the one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process includes performing, by the first device or by the second device, one or more operations defined by the modified the first one or more instruction sets for operating the first device learned in the learning process or by the modified the copy of the first one or more instruction sets for operating the first device learned in the learning process.

69. The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the first device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the first device, and wherein at

least a portion of the fourth correlation is learned in another learning process that includes operating the first device at least partially by the user.

70. The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the first device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes operating the first device at least partially by another user.

71. The method of claim 61, wherein the knowledgebase further includes a fourth correlation including a fourth circumstance representation correlated with a fourth one or more instruction sets for operating the second device, and wherein the fourth circumstance representation represents a fourth circumstance detected at least in part by the one or more sensors of the second device, and wherein at least a portion of the fourth correlation is learned in another learning process that includes operating the second device at least partially by another user.

72. The method of claim 61, wherein the first circumstance includes one or more objects detected at least in part by the one or more sensors of the first device at a first time or during a first time period, and wherein the second circumstance includes one or more objects detected at least in part by the one or more sensors of the first device at a second time or during a second time period, and wherein the third circumstance includes:

one or more objects detected at least in part by the one or more sensors of the first device at a third time or during a third time period, or

one or more objects detected at least in part by the one or more sensors of the second device at a third time or during a third time period.

73. The method of claim 61, wherein the first circumstance representation is a data structure including one or more data about the first circumstance of the first device, and wherein the second circumstance representation is a data structure including one or more data about the second circumstance of the first device, and wherein the third circumstance representation is a data structure including one or more data about: the third circumstance of the first device or the third circumstance of the second device.

74. The method of claim 61, wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the second circumstance representation includes: one or more object representations, or one or more collections of object representations, and wherein the third circumstance representation includes: one or more object representations, or one or more collections of object representations.

75. The method of claim 61, wherein, to correlate the first circumstance representation with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first circumstance representation, wherein the first circumstance representation includes: one or more object representations, or one or more collections of object representations.

76. The method of claim 61, wherein the anticipating the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between

the third circumstance representation and the first circumstance representation includes determining the first one or more instruction sets for operating the first device learned in the learning process based on the at least partial match between the third circumstance representation and the first circumstance representation.

77. The method of claim 61, wherein elements of the computing system are included in: a single device, or multiple devices, and wherein the one or more processor circuits include: one or more microcontrollers, one or more computing circuits, or one or more electronic circuits, and wherein the memory includes: a volatile memory, or a non-volatile memory, and wherein the first device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein the second device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein an instruction set of the first one or more instruction sets for operating the first device includes at least one selected from the group comprising: only one instruction, a plurality of instructions, one or more inputs, one or more commands, one or more computer commands, one or more keywords, one or more symbols, one or more operators, one or more variables, one or more values, one or more objects or object references, one or more data structures or data structure references, one or more functions or function references, one or more parameters, one or more signals, one or more characters, one or more digits, one or more user operating directions, one or more user directions, one or more user inputs, one or more representations of one or more user actions, one or more representations of one or more user clicks, one or more binary bits, one or more assembly language commands, one or more states, one or more codes, one or more data, and one or more information, and wherein an instruction set of the second one or more instruction sets for operating the first device includes at least one selected from the group comprising: only one instruction, a plurality of instructions, one or more inputs, one or more commands, one or more computer commands, one or more keywords, one or more symbols, one or

more operators, one or more variables, one or more values, one or more objects or object references, one or more data structures or data structure references, one or more functions or function references, one or more parameters, one or more signals, one or more characters, one or more digits, one or more user operating directions, one or more user directions, one or more user inputs, one or more representations of one or more user actions, one or more representations of one or more user clicks, one or more binary bits, one or more assembly language commands, one or more states, one or more codes, one or more data, and one or more information, and wherein the one or more sensors of the first device include at least one selected from the group comprising: one or more cameras, one or more microphones, one or more radars, one or more lidars, one or more sonars, and one or more apparatuses for detecting objects or object properties, and wherein the one or more sensors of the second device include at least one selected from the group comprising: one or more cameras, one or more microphones, one or more radars, one or more lidars, one or more sonars, and one or more apparatuses for detecting objects or object properties, and wherein the at least the portion of the first correlation includes: one portion of the first correlation, multiple portions of the first correlation, all portions of the first correlation, or the entire first correlation, and wherein the at least the portion of the second correlation includes: one portion of the second correlation, multiple portions of the second correlation, all portions of the second correlation, or the entire second correlation, and wherein an object of the first circumstance is the same as an object of the third circumstance, or multiple objects of the first circumstance are the same as multiple objects of the third circumstance, or all objects of the first circumstance are the same as all objects of the third circumstance, or all objects of the first circumstance are different than all objects of the third circumstance.

78. One or more non-transitory machine readable media storing machine readable code that when executed by one or more processor circuits causes the one or more processor circuits to perform at least:

accessing a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

at least in response to the anticipating, causing the first device or [[a]] the second device to perform one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process at least by causing the one or more processor circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device learned in the learning process.

79. A system comprising:

a memory that stores at least a knowledgebase that includes: a first correlation including a first circumstance representation correlated with a first one or more instruction sets for operating a first device and a second correlation including a second circumstance representation correlated with a second one or more instruction sets for operating the first device, wherein the first circumstance representation represents a first circumstance detected at least in part by one or more sensors of the first device and the second circumstance representation represents a second circumstance detected at least in part by the one or more sensors of the first device, and wherein at least a portion of the first correlation and at least a portion of the second correlation are learned in a learning process that includes operating the first device at least partially by a user;

means for generating or receiving a third circumstance representation, wherein the third circumstance representation represents a third circumstance detected at least in part by the one or more sensors of the first device or at least in part by one or more sensors of a second device;

means for anticipating the first one or more instruction sets for operating the first device learned in the learning process based on at least partial match between the third circumstance representation and the first circumstance representation; and

means for executing, at least in response to the anticipating, the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or [[a]] the second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process.

80. The system of claim 79, wherein the means for generating or receiving the third circumstance representation includes one or more processor circuits, and wherein the means for anticipating the first one or more instruction sets for operating the first device learned in the learning

process based on the at least partial match between the third circumstance representation and the first circumstance representation includes one or more processor circuits, and wherein the means for executing, at least in response to the anticipating, the first one or more instruction sets for operating the first device learned in the learning process includes one or more processor circuits.

***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance: Applicant has disclosed an artificial intelligence system that creates a knowledge base based on operations happening by a device and partially used by a user in part. After instruction sets get stored in a training mode by matching up an instances or objects with training sets, correlations happen as signals from sensors start to come in as a devices gets used. These correlations correlate instructions sets that were gathered in the training mode and stored in the knowledge base and the system then expects different actions according to the instruction sets to happen based on these correlations which in part are caused by a user using the device. Then automatically in response to the anticipating, executing the first one or more instruction sets for operating the first device learned in the learning process, wherein the first device or a second device autonomously performs one or more operations defined by the first one or more instruction sets for operating the first device learned in the learning process and that come up in the correlating process and the anticipating step. There are references that claim the broad spectrum idea, however they do not deal with the specifics of the current claim limitations, such as the prior art does not disclose the device that operates as the user directs it, hence, does not disclose learning the device operation from the user directing the device. Prior art discloses a system that explores its own environment on its own, which is very different from relying on the user to direct it. Prior art does not disclose the first and the second correlations that each include a circumstance representation correlated with instruction sets. Prior art

does not disclose the knowledgebase, which includes a 3-level nested data structure recited in the independent claims. Such as individual circumstance representation (a data structure itself) and individual instruction set (a data structure itself when learned in the learning process). And correlation (a data structure itself) that includes a circumstance representation correlated with instruction sets. And knowledgebase a data structure itself including a plurality of correlation data structures in various arrangements. Further autonomous operation of the device in the claims performs the operation and does not rely on the re-training such as in the prior art as noted below, and the re-training is a crucial function in the proper operating of the systems in the prior art. As an example for highlighting these differences Schnittman (US 2016/0167226) in fig.5 505-510 can be consider the training, and determine robot behavior 535 can be consider instruction sets, and 545 can be considered a correlation since it is going to grab images from the buffer and change the database accordingly, then the classifier can be considered the instances. However the automatic portion of the device actually performing the task without the re-training based on those correlations is not in the prior art as an example. There is always a re-training of some sorts, where the current application automatically controls the device based on that prior correlation and no need for re-training of any kind. Many other references could be cited but the same analysis and differences will be noted.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANTIAGO GARCIA whose telephone number is (571)270-5182. The examiner can normally be reached on Monday-Friday 9:30am-5:30pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Le, Vu** can be reached on **(571) 272-7332**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/SANTIAGO GARCIA/**
**Primary Examiner, Art Unit 2668**

/SG/

| Notice of References Cited | Application/Control No. 15/340,991 | Applicant(s)/Patent Under Reexamination Cosic, Jasmin | |
|---|---|---|---|
| | Examiner SANTIAGO GARCIA | Art Unit 2668 | Page 1 of 2 |

**U.S. PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Notice of References Cited | Application/Control No. 15/340,991 | Applicant(s)/Patent Under Reexamination Cosic, Jasmin | |
|---|---|---|---|
| | Examiner SANTIAGO GARCIA | Art Unit 2668 | Page 2 of 2 |

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
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| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
| | SANTIAGO GARCIA | 2668 |

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| ✓ | Rejected | - | Cancelled | N | Non-Elected | A | Appeal |
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**CLAIMS**

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
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| Final | Original | 06/19/2019 | | | | | | | | |
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| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
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| CLAIM | | DATE | | | | | | | | | |
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| Final | Original | 06/19/2019 | | | | | | | | | |
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| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
| | SANTIAGO GARCIA | 2668 |

| CPC | | | | | | | |
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| Symbol | | | | | | Type | Version |
| G06N | / | 3 | / | 08 | | F | 2013-01-01 |
| G06N | / | 5 | / | 022 | | I | 2013-01-01 |

| CPC Combination Sets | | | | | | | | |
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| NONE | | Total Claims Allowed: | |
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| (Assistant Examiner) | (Date) | 20 | |
| /SANTIAGO GARCIA/<br>Primary Examiner, Art Unit 2668 | 19 June 2019 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 12 |

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| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
| | SANTIAGO GARCIA | 2668 |

| INTERNATIONAL CLASSIFICATION | | | | | |
|---|---|---|---|---|---|
| CLAIMED | | | | | |
| G06N3/08 | / | 3 | / | 08 | |
| G06N5/02 | / | 5 | / | 02 | |

| NON-CLAIMED | | | | | |
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| US ORIGINAL CLASSIFICATION | |
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| CLASS | SUBCLASS |
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| CROSS REFERENCES(S) | | | | | | |
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| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | | |
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| NONE (Assistant Examiner) (Date) | Total Claims Allowed: 20 | |
|---|---|---|
| /SANTIAGO GARCIA/ Primary Examiner, Art Unit 2668 (Primary Examiner) 19 June 2019 (Date) | O.G. Print Claim(s) 1 | O.G. Print Figure 12 |

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| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | **Examiner** | **Art Unit** |
| | SANTIAGO GARCIA | 2668 |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

**CLAIMS**

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
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| | 7 | | 17 | | 27 | | 37 | | 47 | | 57 | 7 | 67 | 17 | 77 |
| | 8 | | 18 | | 28 | | 38 | | 48 | | 58 | 8 | 68 | 18 | 78 |
| | 9 | | 19 | | 29 | | 39 | | 49 | | 59 | 9 | 69 | 19 | 79 |
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| NONE | | **Total Claims Allowed:** | |
|---|---|---|---|
| (Assistant Examiner) | (Date) | 20 | |
| /SANTIAGO GARCIA/<br>Primary Examiner, Art Unit 2668 | 19 June 2019 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 12 |

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| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
| | SANTIAGO GARCIA | 2668 |

| CPC - Searched* | | |
|---|---|---|
| Symbol | Date | Examiner |
| G06N3/08, G06N 5/022 | 06/19/2019 | SG |

| CPC Combination Sets - Searched* | | |
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| Symbol | Date | Examiner |
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| US Classification - Searched* | | | |
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* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| Search Notes | | |
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| Search Notes | Date | Examiner |
| East and inventor name search | 06/19/2019 | SG |
| ip.com, google scholar, IEEE search same search and keywords and synonyms as east search and adopting it to each site for example (( ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) with many synonyms for each term along with all the different ways to search for AI | 06/19/2019 | SG |
| Consulted with Bernard Krasnic about the invention and [possible areas to search | 06/19/2019 | SG |
| Consulted with Niu, Feng with regards to 112f and how to correctly point out the claim interpretation | 06/19/2019 | SG |
| EAST search had to be re-created as some search strings were taking too long and work space ended up not working. Re-created as best as could remember. | 06/19/2019 | SG |

| /SANTIAGO GARCIA/<br>Primary Examiner, Art Unit 2668 | |
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|---|---|---|
| | 15/340,991 | Cosic, Jasmin |
| | Examiner | Art Unit |
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| Interference Search | | | |
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| US Class/CPC Symbol | US Subclass/CPC Group | Date | Examiner |
| G06N3 | 08 | 06/19/2019 | SG |
| G06N5 | 022 | 06/19/2019 | SG |

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| /SANTIAGO GARCIA/<br>Primary Examiner, Art Unit 2668 | |



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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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**( Not for submission under 37 CFR 1.99)**

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| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Application Number | 15340991 |
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| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Application Number | 15340991 |
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**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
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|---|---|---|
| | Application Number | 15340991 |
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| | 18 | Bogdanovych, Anton, et al. "Authentic interactive reenactment of cultural heritage with 3D virtual worlds and artificial intelligence." Applied Artificial Intelligence 24.6 (2010): 617-647., 32 pages | |
| | 19 | Hernandez, Marco E. Perez, and Stephan Reiff-Marganiec. "Autonomous and self controlling smart objects for the future internet." Future internet of things and cloud (FiCloud), 2015 3rd international conference on. IEEE, 2015., 8 pages | |
| | 20 | Medini et al., "Building a Web of Things with Avatars", Managing the Web of Things (2017), 30 pages | |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | /SANTIAGO GARCIA/ | Date Considered | 06/19/2019 |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /S.G/



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Tesla v. Autonomous
IPR2023-01055

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2019-05-05 |
| Name/Print | Jasmin Cosic | Registration Number | |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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## EAST Search History

## EAST Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
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| L1 | 13297 | G06N3/08.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:04 |
| L2 | 6613 | G06N5/022.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:04 |
| L3 | 19658 | 1 or 2 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:04 |
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| L5 | 12487 | 3 and L4 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:04 |
| L6 | 3171 | L4 AND ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:06 |
| L7 | 105 | 5 and L6 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:06 |
| L8 | 3215 | L4 AND ((ANTICIPAT$4 OR PREDICT$5 | US-PGPUB; | OR | ON | 2019/06/19 |

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| | | or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS) or (current near4 compiler)) | USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | | | 14:19 |
| L9 | 0 | ((G06N3/08.CPC.)).CCLS. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2019/06/19 14:25 |
| L12 | 6613 | G06N5/022.CPC. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:26 |
| L13 | 42 | 12 AND 8 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 14:26 |
| L14 | 37 | ((("Cosic") near3 ("Jasmin"))).INV. | US-PGPUB; USPAT; USOCR | OR | ON | 2019/06/19 14:39 |
| S1 | 1 | "15340991" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/17 23:31 |
| S2 | 990332 | AI OR (ARTIFICIAL NEAR3 INTELLIGEN$4) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/17 23:32 |
| S3 | 49 | S2 AND (DEVICE NEAR4 CIRCUMSTANCES WITH AUTOMAT$5) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/17 23:33 |
| S4 | 123 | S2 AND ((ANTICIPAT$4 OR PREDICT$5) NEAR4 (INSTRUCTION NEAR4 SETS)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/17 23:43 |
| S5 | 368 | S2 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (INSTRUCTION NEAR4 SETS)) | US-PGPUB; USPAT; USOCR; | OR | ON | 2019/06/17 23:43 |

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| S6 | 94 | S2 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (INSTRUCTION NEAR4 SETS) WITH (OBJECT OR THING OR ITEM OR DEVICE)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/17 23:43 |
| S7 | 1 | S2 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (training near4 INSTRUCTION NEAR4 SETS) WITH (OBJECT OR THING OR ITEM OR DEVICE)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 00:01 |
| S8 | 0 | S2 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (training$ near4 INSTRUCTION NEAR4 SETS with train) WITH (OBJECT OR THING OR ITEM OR DEVICE)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 00:01 |
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| S12 | 13290 | G06N3/08.cpc. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 11:36 |
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| S15 | 990516 | AI OR (ARTIFICIAL NEAR3 INTELLIGEN$4) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; | OR | ON | 2019/06/18 15:18 |

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| S16 | 36 | S15 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (INSTRUCTION NEAR4 SETS)) with correlat$4 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 15:18 |
| S17 | 100 | S15 AND ((ANTICIPAT$4 OR PREDICT$5) WITH (INSTRUCTION NEAR4 SETS)) with (compar$3 or match$3 or correlat$3 or associat$3 or relat$3) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 15:19 |
| S18 | 387 | ("20080254429" \| "4730315" \| "6973446" \| "7840060" \| "8196119" \| "7113946" \| "9298749" \| "20100278420" \| "20080215508" \| "20090287643" \| "20120284026" \| "7565340" \| "20130238533" \| "6915105" \| "7240335" \| "20130226974" \| "8335805" \| "9282309" \| "9443192" \| "20080288259" \| "20100033780" \| "5560011" \| "6842877" \| "20040117771" \| "20070006159" \| "4860203" \| "6088731" \| "7424705" \| "7484205" \| "8090669" \| "8251704" \| "8397227" \| "8464225" \| "20050289105" \| "20100023541" \| "20100082536" \| "20160246850" \| "8572035" \| "20040249774" \| "20050245303" \| "20150055821" \| "20070061735" \| "20110085734" \| "20150264306" \| "20160328480" \| "20120150773" \| "20120167057" \| "5602982" \| "6106299" \| "6314558" \| "7478371" \| "7721218" \| "7765537" \| "8019699" \| "8655260" \| "8667472" \| "20160140999" \| "20160246868" \| "20030026588" \| "20070106633" \| "20090131152" \| "20090222388" \| "20130278631" \| "20050240412" \| "20060265406" \| "20100114746" \| "20130278501" \| "20150006171" \| "20150310041" \| "20150339213" \| "6754631" \| "4370707" \| "6126330" \| "6643842" \| "6728689" \| "8078556" \| "8195674" \| "8589414" \| "20030065662" \| "20130218932" \| "9047324" \| "9367806" \| "20090141969" \| "20100063949" \| "20130156345" \| "20140052717" \| "20090067727" \| "20130007532" \| "8261199" \| "20080281764" \| "7797259" \| "7987144" \| "8005828" \| "8244730" \| "20040194017" \| "20160292185" \| "7117225" \| "8417740" \| "20060047612" \| "20090324010" \| "20060184410" \| "20110007079" \| "20150269415" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:12 |

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| S19 | 133 | ("20010044732" \| "20020078209" \| "20020161735" \| "20020174189" \| "20030046451" \| "20030065662" \| "20040010699" \| "20040049476" \| "20040098394" \| "20040128327" \| "20040203845" \| "20040224675" \| "20040229595" \| "20040249785" \| "20040249857" \| "20050044165" \| "20050076069" \| "20050086203" \| "20050149517" \| "20050149542" \| "20050289105" \| "20060136454" \| "20060212846" \| "20070049246" \| "20070136264" \| "20070291757" \| "20080005054" \| "20080039062" \| "20080040782" \| "20080045205" \| "20080086481" \| "20080091763" \| "20080126403" \| "20080172274" \| "20080189250" \| "20080281825" \| "20090070149" \| "20090106360" \| "20090176529" \| "20090201908" \| "20090217375" \| "20090254594" \| "20090275331" \| "20100023531" \| "20100023541" \| "20100077468" \| "20100082536" \| "20100088316" \| "20100159903" \| "20100223228" \| "20100257376" \| "20100278162" \| "20110010344" \| "20110016089" \| "20110106448" \| "20110119758" \| "20110145210" \| "20110145242" \| "20110161290" \| "20110258345" \| "20110314482" \| "20120016901" \| "20120101993" \| "20120131116" \| "20120159393" \| "20120173485" \| "20120183221" \| "20120209925" \| "20120209948" \| "20130036089" \| "20130198171" \| "4862390" \| "5121470" \| "5185857" \| "5533029" \| "5544222" \| "5598534" \| "5812117" \| "5956637" \| "6087952" \| "6122527" \| "6128012" \| "6202060" \| "6226665" \| "6493717" \| "6549625" \| "6636873" \| "6654762" \| "6795706" \| "6832084" \| "6871068" \| "6879989" \| "6889139" \| | US-PGPUB; USPAT; USOCR | OR | ON | 2019/06/18 23:14 |

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| | | "6895234" \| "6959436" \| "7113946" \| "7117225" \| "7328030" \| "7444143" \| "7450962" \| "7483905").PN. OR ("7523112" \| "7685127" \| "7756525" \| "7756829" \| "7779029" \| "7805397" \| "7813714" \| "7831554" \| "7865924" \| "7885635" \| "7945687" \| "7958270" \| "8031694" \| "8041372" \| "8099332" \| "8103272" \| "8145663" \| "8190645" \| "8204911" \| "8214409" \| "8266187" \| "8290898" \| "8291408" \| "8335805" \| "8359223" \| "8401539" \| "8412150" \| "8417740").PN. OR ("9367806").URPN. | | | | |
| S20 | 1287849 | AI OR (((machine near2 learn$3) (artificial adj intelligence) (decision adj tree) (random adj forrest$1) (predictive adj model$4) (association adj rule) (neural adj network$3) (bayesian adj network$3))) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:28 |
| S21 | 711 | S20 AND ((ANTICIPAT$4 OR PREDICT$5) NEAR4 (INSTRUCTION NEAR4 SETS)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:29 |
| S22 | 3171 | S20 AND ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:32 |
| S23 | 1 | S20 AND ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) with (object near4 representation) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:32 |
| S24 | 126 | S20 AND ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) with (represent$6) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:33 |
| S25 | 152 | S20 AND ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) with (represent$6 or label$4) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/18 23:33 |
| S26 | 3 | ((ANTICIPAT$4 OR PREDICT$5 or determ$5) NEAR4 (INSTRUCTION NEAR4 SETS)) with (represent$6 or label$4) same4 (third near4 correlat$4) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2019/06/19 09:17 |

**EAST Search History (Interference)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L10 | 0 | ((G06N3/08.CPC.)).CCLS. | US-PGPUB; USPAT | OR | OFF | 2019/06/19 14:25 |
| L11 | 0 | ((G06N5/022.CPC.)).CCLS. | US-PGPUB; USPAT | OR | OFF | 2019/06/19 14:26 |

**6/ 19/ 2019 2:59:01 PM**
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Attorney Docket Number | |

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| Art Unit | |
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| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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|---|---|---|
| | Application Number | 15340991 |
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| | First Named Inventor | Jasmin Cosic |
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| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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Tesla v. Autonomous
IPR2023-01055

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| | Application Number | 15340991 |
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| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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| Examiner Signature | /SANTIAGO GARCIA/ | Date Considered | 06/19/2019 |
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Tesla v. Autonomous
IPR2023-01055

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
| Name/Print | Jasmin Cosic | Registration Number | |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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Tesla v. Autonomous
IPR2023-01055

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

| | | | | | | |
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| **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** (Not for submission under 37 CFR 1.99) | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| Examiner Signature | /SANTIAGO GARCIA/ | Date Considered | 06/19/2019 |
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| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
| Name/Print | Jasmin Cosic | Registration Number | |

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Tesla v. Autonomous
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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Tesla v. Autonomous
IPR2023-01055

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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IPR2023-01055

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

| | | | | | | |
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

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|---|---|
| Application Number | 15340991 |
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| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
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| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| | Application Number | 15340991 |
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| | Attorney Docket Number | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
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| | Application Number | 15340991 |
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| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

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| Examiner Signature | /SANTIAGO GARCIA/ | Date Considered | 06/19/2019 |
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| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
| Name/Print | Jasmin Cosic | Registration Number | |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.G/



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IPR2023-01055

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| Inventor: | Jasmin Cosic | Confirmation No.: 1993 |
| Title: | "ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION" | |
| Serial No.: | 15/340,991 | Filed: November 2, 2016 |
| Examiner: | GARCIA, SANTIAGO | Group Art Unit: 2668 |

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*Via EFS-Web* June 17, 2019

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

## PRELIMINARY AMENDMENT

Dear Commissioner:

Before examination on the merits, please amend the claims in the above-identified application as shown in the following listing of claims. This preliminary amendment supersedes the preliminary amendments filed on May 4, 2019 and May 27, 2019, therefore, the claims in the following listing of claims should be used for the examination on the merits instead of the claims in the preliminary amendments filed on May 4, 2019 and May 27, 2019.

## Listing of Claims

1 - 60 (canceled)

61. (new) A method implemented using a computing system that includes one or more processor circuits, the method comprising:

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 device, wherein the first one or more object representations represent a first one or more objects detected at least in part by one or more sensors of the first device;

generating a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

anticipating the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

at least in response to the determining, executing the first one or more instruction sets for operating the first device, wherein the first device or a second device performs one or more operations defined by the first one or more instruction sets for operating the first device.



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62. (new) The method of claim 61, wherein the executing the first one or more instruction sets for operating the first device is performed via an execution interface.

63. (new) The method of claim 61, wherein the first one or more instruction sets for operating the first device include one or more instruction sets for operating a portion of the first device, and wherein the performing, by the first device or by the second device, the one or more operations defined by the first one or more instruction sets for operating the first device includes performing, by the portion of the first device or by a portion of the second device, one or more operations defined by the one or more instruction sets for operating the portion of the first device.

64. (new) The method of claim 61, wherein the first one or more instruction sets for operating the first device are obtained via an acquisition interface.

65. (new) The method of claim 61, wherein at least one selected from the group comprising: the one or more processor circuits, and the memory are included in a remote computing device.

66. (new) The method of claim 61, wherein at least one selected from the group comprising: the one or more processor circuits, and the memory are included in multiple devices.



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67. (new) The method of claim 61, wherein at least one selected from the group comprising: the one or more processor circuits, and the memory are included in a single device.

68. (new) The method of claim 61, wherein at least one object of the first one or more objects and at least one object of the second one or more objects are the same.

69. (new) The method of claim 61, wherein the second one or more objects include one or more objects detected at least in part by: the one or more sensors of the first device, or one or more sensors of the second device.

70. (new) The method of claim 61, wherein the one or more processor circuits include: one or more microcontrollers, one or more computing circuits, or one or more electronic circuits, and wherein the memory includes: a volatile memory or a non-volatile memory.

71. (new) One or more non-transitory machine readable media storing machine readable code that when executed by one or more processor circuits causes the one or more processor circuits to perform at least:

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



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sets for operating a first device, wherein the first one or more object representations represent a first one or more objects detected at least in part by one or more sensors of the first device;

generating a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

at least in response to the determining, causing the first device or a second device to perform one or more operations defined by the first one or more instruction sets for operating the first device at least by causing the one or more processor circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device.

72. (new) The one or more non-transitory machine readable media of claim 71, wherein the first one or more instruction sets for operating the first device include one or more instruction sets for operating a portion of the first device, and wherein the performing, by the first device or by the second device, the one or more operations defined by the first one or more instruction sets for operating the first device includes performing, by the portion of the first device or by a portion of the second device, one or more operations defined by the one or more instruction sets for operating the portion of the first device.



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73. (new) The one or more non-transitory machine readable media of claim 71, wherein the first one or more instruction sets for operating the first device are obtained via an acquisition interface.

74. (new) The one or more non-transitory machine readable media of claim 71, wherein at least one selected from the group comprising: the one or more processor circuits, the another one or more processor circuits, and the memory are included in a remote computing device.

75. (new) The one or more non-transitory machine readable media of claim 71, wherein at least one selected from the group comprising: the one or more processor circuits, the another one or more processor circuits, and the memory are included in multiple devices.

76. (new) The one or more non-transitory machine readable media of claim 71, wherein at least one selected from the group comprising: the one or more processor circuits, the another one or more processor circuits, and the memory are included in a single device.

77. (new) The one or more non-transitory machine readable media of claim 71, wherein at least one object of the first one or more objects and at least one object of the second one or more objects are the same.



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78. (new) The one or more non-transitory machine readable media of claim 71, wherein the second one or more objects include one or more objects detected at least in part by: the one or more sensors of the first device, or one or more sensors of the second device.

79. (new) A system comprising:

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 device, wherein the first one or more object representations represent a first one or more objects detected at least in part by one or more sensors of the first device;

means for generating a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

means for determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

means for executing the first one or more instruction sets for operating the first device at least in response to the determining, wherein the first device or a second device performs one or more operations defined by the first one or more instruction sets for operating the first device.



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80. (new) The system of claim 79, wherein the means for generating the second one or more object representations includes one or more processor circuits, and wherein the means for determining the first one or more instruction sets for operating the first device based on the at least partial match between the second one or more object representations and the first one or more object representations includes one or more processor circuits, and wherein the means for executing the first one or more instruction sets for operating the first device includes one or more processor circuits.



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IPR2023-01055

## Remarks

In this preliminary amendment, the applicant cancels claims 1-60, and presents for examination new claims 61-80. After entry of this preliminary amendment, claims 61-80 are pending. The undersigned may be contacted at (317) 772-1312 concerning this application.

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

By /Jasmin Cosic/
Jasmin Cosic

Date submitted: June 17, 2019

Respectfully submitted,

/Jasmin Cosic/

Jasmin Cosic



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Tesla v. Autonomous
IPR2023-01055

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 36322513 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 17-JUN-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 17:21:14 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | PRELIMINARY_AMENDMENT.pdf | 34172<br>cc223f3bf2cb26966d7d38330880ff668ed8...5184 | yes | 9 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Preliminary Amendment | 1 | 1 |
| | Claims | 2 | 8 |
| | Applicant Arguments/Remarks Made in an Amendment | 9 | 9 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 34172 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/340,991 | Filing Date<br>11/02/2016 | ☐ To be Mailed |
|---|---|---|---|

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $40 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $210 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 06/17/2019 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $50 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $230 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /ROLITA M WIMBUSH/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| Inventor: | Jasmin Cosic | Confirmation No.: 1993 |
| Title: | "ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION" | |
| Serial No.: | 15/340,991 | Filed: November 2, 2016 |
| Examiner: | PARK, SOO JIN | Group Art Unit: 2668 |

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*Via EFS-Web* May 27, 2019

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

## PRELIMINARY AMENDMENT

Dear Commissioner:

Before examination on the merits, please amend the claims in the above-identified application as shown in the following listing of claims. This preliminary amendment supersedes the preliminary amendment filed on May 4, 2019, therefore, the claims in the following listing of claims should be used for the examination on the merits instead of the claims in the preliminary amendment filed on May 4, 2019.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 36119055 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 27-MAY-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 19:58:52 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | PRELIMINARY_AMENDMENT.pdf | 47718<br>9af1a7f9a33fe81848dd1e277d965a6082c<br>bd8f6 | yes | 13 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Applicant Arguments/Remarks Made in an Amendment | 13 | 13 |
| | Claims | 2 | 12 |
| | Preliminary Amendment | 1 | 1 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 47718 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## Remarks

In this preliminary amendment, the applicant cancels claims 1-40, and presents for examination new claims 41-60. After entry of this preliminary amendment, claims 41-60 are pending. The undersigned may be contacted at (317) 772-1312 concerning this application.

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

By /Jasmin Cosic/
Jasmin Cosic

Date submitted: May 27, 2019

Respectfully submitted,

/Jasmin Cosic/

Jasmin Cosic



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IPR2023-01055

## Listing of Claims

1 - 40 (Canceled)

41. (new) A method implemented using a computing system that includes one or more processor circuits, the method comprising:

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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations represent a first one or more objects detected at least in part by the first one or more sensors;

generating or receiving a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

at least in response to the determining, executing the first one or more instruction sets for operating the first device, wherein the first device or a second device performs one or more operations defined by the first one or more instruction sets for operating the first device.



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42. (new) The method of claim 41, wherein at least one object of the first one or more objects and at least one object of the second one or more objects are the same.

43. (new) The method of claim 41, wherein the determining the first one or more instruction sets for operating the first device 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.

44. (new) The method of claim 41, wherein the memory further stores at least a first knowledge cell, and wherein the first knowledge cell includes the first correlation.

45. (new) The method of claim 41, wherein the first one or more object representations include a first stream of one or more object representations, and



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wherein the second one or more object representations include a second stream of one or more object representations.

46. (new) The method of claim 41, wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first one or more object representations.

47. (new) The method of claim 41, wherein elements of the computing system are included in: a single device or multiple devices, and wherein the one or more processor circuits include: one or more microcontrollers, one or more computing circuits, or one or more electronic circuits, and wherein the memory includes: a volatile memory or a non-volatile memory, and wherein the first device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein the second device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein the first one or more object representations include: one or more object properties of the first one or more objects, or one or more information on the first one or more objects, and wherein the second one or more object representations include: one or more object properties of the second one or more objects, or one or more information on the second one or more objects, and wherein an instruction set of the first one or more instruction sets for operating the first device includes at least one



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selected from the group comprising: only one instruction, a plurality of instructions, one or more inputs, one or more commands, one or more computer commands, one or more keywords, one or more symbols, one or more operators, one or more variables, one or more values, one or more objects or object references, one or more data structures or data structure references, one or more functions or function references, one or more parameters, one or more signals, one or more characters, one or more digits, one or more user operating directions, one or more user directions, one or more user inputs, one or more representations of one or more user actions, one or more representations of one or more user clicks, one or more data, and one or more information, and wherein the first one or more sensors include at least one selected from the group comprising: one or more cameras, one or more microphones, one or more radars, one or more lidars, one or more sonars, and one or more apparatuses for detecting objects or object properties.

48. (new) The method of claim 41, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first device, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the first one or more sensors, and wherein a first connection is generated to connect the first correlation with the third correlation, and wherein the first correlation connected with the third correlation form at least a portion of a knowledge structure or a knowledgebase



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for operating at least one selected from the group comprising: the first device, the second device, and other one or more devices.

49. (new) The method of claim 41, wherein at least a portion of the first correlation is learned in a first learning process that includes:

generating or receiving the first one or more object representations; and

obtaining or receiving the first one or more instruction sets for operating the first device, and wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the second device, and wherein the second device includes a second one or more sensors, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the second one or more sensors, and wherein at least a portion of the third correlation is learned in a second learning process that includes:

generating or receiving the third one or more object representations; and

obtaining or receiving the third one or more instruction sets for operating the second device.

50. (new) The method of claim 41, wherein the second one or more objects include one or more objects detected at least in part by: the first one or more sensors, or one or more sensors of the second device.

51. (new) The method of claim 41, further comprising:



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modifying the first one or more instruction sets for operating the first device or a copy of the first one or more instruction sets for operating the first device, and wherein the executing the first one or more instruction sets for operating the first device includes executing the modified the first one or more instruction sets for operating the first device or the modified the copy of the first one or more instruction sets for operating the first device, and wherein the performing, by the first device or by the second device, the one or more operations defined by the first one or more instruction sets for operating the first device includes performing, by the first device or by the second device, the one or more operations defined by the modified the first one or more instruction sets for operating the first device or by the modified the copy of the first one or more instruction sets for operating the first device.

52. (new) The method of claim 41, wherein the first one or more object representations include or are associated with a first one or more extra information, and wherein the second one or more object representations include or are associated with a second one or more extra information, and wherein the determining the first one or more instruction sets for operating the first device based on the at least partial match between the second one or more object representations and the first one or more object representations is further based on at least partial match between the second one or more extra information and the first one or more extra information.



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53. (new) The method of claim 41, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first device, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the first one or more sensors, and wherein at least a portion of the first correlation is learned in a first learning process that includes operating the first device at least partially by a first user, and wherein at least a portion of the third correlation is learned in a second learning process that includes operating the first device at least partially by the first user.

54. (new) The method of claim 41, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first device, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the first one or more sensors, and wherein at least a portion of the first correlation is learned in a first learning process that includes operating the first device at least partially by a first user, and wherein at least a portion of the third correlation is learned in a second learning process that includes operating the first device at least partially by a second user.



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55. (new) The method of claim 41, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the second device, and wherein the second device includes a second one or more sensors, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the second one or more sensors, and wherein at least a portion of the first correlation is learned in a first learning process that includes operating the first device at least partially by a first user, and wherein at least a portion of the third correlation is learned in a second learning process that includes operating the second device at least partially by a second user.

56. (new) One or more non-transitory machine readable media storing machine readable code that when executed by one or more processor circuits causes the one or more processor circuits to perform at least:

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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations represent a first one or more objects detected at least in part by the first one or more sensors;

generating or receiving a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;



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determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

at least in response to the determining, causing the first device or a second device to perform one or more operations defined by the first one or more instruction sets for operating the first device at least by causing the one or more processor circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device.

57. (new) The one or more non-transitory machine readable media of claim 56, wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first one or more object representations.

58. (new) The one or more non-transitory machine readable media of claim 56, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first device, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the first one or more sensors, and wherein at least a portion of the first correlation is learned in a first learning process that includes operating the first device at least partially by a first user, and wherein at least a portion of the third



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correlation is learned in a second learning process that includes operating the first device at least partially by the first user.

59. (new) A system comprising:

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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations represent a first one or more objects detected at least in part by the first one or more sensors;

a means for generating or receiving a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

a means for determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

a means for executing the first one or more instruction sets for operating the first device at least in response to the determining, wherein the first device or a second device performs one or more operations defined by the first one or more instruction sets for operating the first device.

60. (new) The system of claim 59, wherein the means for generating or receiving the second one or more object representations includes one or more



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processor circuits, and wherein the means for determining the first one or more instruction sets for operating the first device based on the at least partial match between the second one or more object representations and the first one or more object representations includes one or more processor circuits, and wherein the means for executing the first one or more instruction sets for operating the first device includes one or more processor circuits.



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PTO/SB/06 (09-11)
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/340,991 | Filing Date<br>11/02/2016 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☐ LARGE ☑ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $40 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $210 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 05/27/2019 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $50 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $230 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

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| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
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**( Not for submission under 37 CFR 1.99)**

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| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

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| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
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| | First Named Inventor | Jasmin Cosic |
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| | Attorney Docket Number | |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2019-05-05 |
|---|---|---|---|
| Name/Print | Jasmin Cosic | Registration Number | |

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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Tesla v. Autonomous
IPR2023-01055

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 35919853 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 05-MAY-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 15:18:25 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | IDS_Part5.pdf | 619072<br>67230f068dd078ac226845930811367d9ee024dd2 | no | 9 |

**Warnings:**

| Information: | | | | | |
|---|---|---|---|---|---|
| 2 | Non Patent Literature | NPL_Part5.pdf | 25533925<br>58bed29843cae9904ec69a1efe47cc83a3ed<br>e30a | no | 254 |

**Warnings:**

The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing

**Information:**

| Total Files Size (in bytes): | 26152997 |
|---|---|

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
|---|---|---|
| Inventor: | Jasmin Cosic | Confirmation No.: 1993 |
| Title: | "ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION" | |
| Serial No.: | 15/340,991 | Filed: November 2, 2016 |
| Examiner: | PARK, SOO JIN | Group Art Unit: 2668 |

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*Via EFS-Web* May 4, 2019

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

## PRELIMINARY AMENDMENT

Dear Commissioner:

Before examination on the merits, please amend the claims in the above-identified application as shown in the following listing of claims.

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 35919394 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 04-MAY-2019 |
| **Filing Date:** | 02-NOV-2016 |
| **Time Stamp:** | 22:35:52 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | no |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | | PRELIMINARY_AMENDMENT.pdf | 40926<br>6bf6f7439b64f4297b38609aca6b1923e32fa2f67 | yes | 11 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Applicant Arguments/Remarks Made in an Amendment | 11 | 11 |
| | Claims | 2 | 10 |
| | Preliminary Amendment | 1 | 1 |
| **Warnings:** | | | |
| **Information:** | | | |
| | **Total Files Size (in bytes):** | 40926 | |

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## Remarks

In this preliminary amendment, the applicant cancels original claims 1-20 and presents for examination new claims 21-40. After entry of this preliminary amendment, claims 21-40 are pending. The undersigned may be contacted at (317) 772-1312 concerning this application.

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

By /Jasmin Cosic/
Jasmin Cosic

Date submitted: May 4, 2019

Respectfully submitted,

/Jasmin Cosic/

Jasmin Cosic



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## Listing of Claims

1 - 20 (Canceled)

21. (new) A system comprising:

one or more processor circuits;

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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations represent a first one or more objects detected at least in part by the first one or more sensors; and

an artificial intelligence unit that:

generates or receives a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

determines the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

in response to the determines of the artificial intelligence unit, causes the first device or a second device to perform one or more operations defined by the first one or more instruction sets for operating the first device at least by causing



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the one or more processor circuits to execute the first one or more instruction sets for operating the first device.

22. (new) The system of claim 21, wherein at least one object of the first one or more objects and at least one object of the second one or more objects are the same.

23. (new) The system of claim 21, wherein the determines the first one or more instruction sets for operating the first device 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.

24. (new) The system of claim 21, wherein the memory further stores at least a first knowledge cell, and wherein the first knowledge cell includes the first correlation.



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25. (new) The system of claim 21, wherein the first one or more object representations include a first stream of one or more object representations, and wherein the second one or more object representations include a second stream of one or more object representations.

26. (new) The system of claim 21, wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first one or more object representations.

27. (new) The system of claim 21, wherein the artificial intelligence unit includes at least one selected from the group consisting of: a hardware element that is included in the one or more processor circuits, a hardware element that is included in another one or more processor circuits, a program operating on the one or more processor circuits, a program operating on another one or more processor circuits, and an element coupled to the one or more processor circuits, and wherein the first device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine, and wherein the second device includes: a robot, a vehicle, an appliance, an electronic device, or a mechanical machine.



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28. (new) The system of claim 21, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the first device, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the first one or more sensors, and wherein a first connection is generated to connect the first correlation with the third correlation, and wherein the first correlation connected with the third correlation form at least a portion of a knowledge structure or a knowledgebase.

29. (new) The system of claim 21, wherein the memory further stores at least a third correlation including a third one or more object representations correlated with a third one or more instruction sets for operating the second device, and wherein the second device includes a second one or more sensors, and wherein the third one or more object representations represent a third one or more objects detected at least in part by the second one or more sensors.

30. (new) The system of claim 21, wherein at least a portion of the first correlation is learned in a learning process while the first device is at least partially operated by a user, and wherein the learning process includes:

generating or receiving the first one or more object representations; and

obtaining or receiving the first one or more instruction sets for operating the first device.



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31. (new) The system of claim 21, wherein the artificial intelligence unit includes at least one selected from the group consisting of: at least a portion of an object processing unit, at least a portion of an acquisition interface, at least a portion of a modification interface, and at least a portion of a DCADO unit.

32. (new) The system of claim 21, wherein the second one or more objects include one or more objects detected at least in part by the first one or more sensors, and wherein the first one or more instruction sets for operating the first device are applied to the first device so that the first device performs the one or more operations defined by the first one or more instruction sets for operating the first device.

33. (new) The system of claim 21, wherein the second device includes a second one or more sensors, and wherein the second one or more objects include one or more objects detected at least in part by the second one or more sensors, and wherein the first one or more instruction sets for operating the first device are applied to the second device so that the second device performs the one or more operations defined by the first one or more instruction sets for operating the first device.

34. (new) The system of claim 21, wherein the second device includes a second one or more sensors, and wherein the second one or more objects include one or more objects detected at least in part by the second one or more sensors, and



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wherein the first one or more instruction sets for operating the first device are modified and applied to the second device so that the second device performs the one or more operations defined by the modified first one or more instruction sets for operating the first device.

35. (new) A non-transitory machine readable medium having a program stored thereon that when executed by one or more processor circuits causes the one or more processor circuits to perform operations comprising:

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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations represent a first one or more objects detected at least in part by the first one or more sensors;

generating or receiving a second one or more object representations, wherein the second one or more object representations represent a second one or more objects;

determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations; and

in response to the determining, causing the first device or a second device to perform one or more operations defined by the first one or more instruction sets for operating the first device at least by causing the one or more processor



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circuits or another one or more processor circuits to execute the first one or more instruction sets for operating the first device.

36. (new) The non-transitory machine readable medium of claim 35, wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first one or more object representations.

37. (new) The non-transitory machine readable medium of claim 35, wherein the second device includes a second one or more sensors, and wherein the second one or more objects include one or more objects detected at least in part by the second one or more sensors, and wherein the first one or more instruction sets for operating the first device are applied to the second device so that the second device performs the one or more operations defined by the first one or more instruction sets for operating the first device.

38. (new) A method comprising:

(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 device, wherein the first device includes a first one or more sensors, and wherein the first one or more object representations



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represent a first one or more objects detected at least in part by the first one or more sensors, the accessing of (a) performed by one or more processor circuits;

(b) generating or receiving a second one or more object representations, wherein the second one or more object representations represent a second one or more objects, the generating or the receiving of (b) performed by the one or more processor circuits;

(c) determining the first one or more instruction sets for operating the first device based on at least partial match between the second one or more object representations and the first one or more object representations, the determining of (c) performed by the one or more processor circuits;

(d) executing the first one or more instruction sets for operating the first device, the executing of (d) performed by the one or more processor circuits or by another one or more processor circuits in response to the determining of (c); and

(e) performing, by the first device or by a second device, one or more operations defined by the first one or more instruction sets for operating the first device.

39. (new) The method of claim 38, wherein, to correlate the first one or more object representations with the first one or more instruction sets for operating the first device, a determination is made that the first one or more instruction sets for operating the first device temporally correspond to the first one or more object representations.



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40. (new) The method of claim 38, wherein the second device includes a second one or more sensors, and wherein the second one or more objects include one or more objects detected at least in part by the second one or more sensors, and wherein the first one or more instruction sets for operating the first device are applied to the second device so that the second device performs the one or more operations defined by the first one or more instruction sets for operating the first device.



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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875 | Application or Docket Number<br>15/340,991 | Filing Date<br>11/02/2016 | ☐ To be Mailed |
|---|---|---|---|

**ENTITY:** ☐ LARGE ☑ SMALL ☐ MICRO

## APPLICATION AS FILED - PART I

| FOR | (Column 1)<br>NUMBER FILED | (Column 2)<br>NUMBER EXTRA | | RATE ($) | FEE ($) |
|---|---|---|---|---|---|
| ☐ BASIC FEE<br>(37 CFR 1.16(a), (b), or (c)) | N/A | N/A | | N/A | |
| ☐ SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m)) | N/A | N/A | | N/A | |
| ☐ EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q)) | N/A | N/A | | N/A | |
| TOTAL CLAIMS<br>(37 CFR 1.16(i)) | minus 20 = | * | | x $40 = | |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h)) | minus 3 = | * | | x $210 = | |
| ☐ APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | |
| ☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | 05/04/2019 | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * 20 | Minus | ** 20 | = 0 | | x $50 = | 0 |
| | Independent<br>(37 CFR 1.16(h)) | * 3 | Minus | *** 3 | = 0 | | x $230 = | 0 |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | 0 |

| | | (Column 1) | | (Column 2) | (Column 3) | | | |
|---|---|---|---|---|---|---|---|---|
| AMENDMENT | | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | | RATE ($) | ADDITIONAL FEE ($) |
| | Total<br>(37 CFR 1.16(i)) | * | Minus | ** | = | | x $0 = | |
| | Independent<br>(37 CFR 1.16(h)) | * | Minus | *** | = | | x $0 = | |
| | ☐ Application Size Fee (37 CFR 1.16(s)) | | | | | | | |
| | ☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | |
| | | | | | | | TOTAL ADD'L FEE | |

| | |
|---|---|
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. | LIE |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". | /WILLIAM N PHILLIPS/ |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". | |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. | |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

# PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 15/340,991

## APPLICATION AS FILED - PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY FEE($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | 70 | | N/A | |
| SEARCH FEE (37 CFR 1.16(k), (l), or (m)) | N/A | N/A | N/A | 300 | | N/A | |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | 360 | | N/A | |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 20 minus 20 = | * | x 40 = | 0.00 | OR | | |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 3 minus 3 = | * | x 210 = | 0.00 | | | |
| APPLICATION SIZE FEE (37 CFR 1.16(s)) | If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | 200 | | | |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | 0.00 | | | |
| * If the difference in column 1 is less than zero, enter "0" in column 2 | | | TOTAL | 930 | | TOTAL | |

## APPLICATION AS AMENDED - PART II

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY ADDITIONAL FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT A | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT B | Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| | Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| | Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 15/340,991 | 11/02/2016 | | 930 | | 20 | 3 |

**CONFIRMATION NO. 1993**

**FILING RECEIPT**

116094
Jasmin Cosic
108 Woodbury Street
Pawtucket, RI 02861

OC000000087312388

Date Mailed: 11/21/2016

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**Inventor(s)**

Jasmin Cosic, Miami, FL;

**Applicant(s)**

Jasmin Cosic, Miami, FL;

**Power of Attorney:** None

**Domestic Applications for which benefit is claimed - None.**
*A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.*

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/340,991**



Autonomous Ex. 2014, p. 255 of 510
Tesla v. Autonomous
IPR2023-01055

**Projected Publication Date:** Request for Non-Publication Acknowledged

**Non-Publication Request:** Yes

**Early Publication Request:** No
** **SMALL ENTITY** **
**Title**

ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION

**Preliminary Class**

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

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| Application Number | 15340991 |
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| First Named Inventor | Jasmin Cosic |
| Art Unit | |
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The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
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| Name/Print | Jasmin Cosic | Registration Number | |

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
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| | First Named Inventor | Jasmin Cosic |
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See attached certification statement.

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| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
|---|---|---|---|
| Name/Print | Jasmin Cosic | Registration Number | |

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| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
|---|---|---|---|
| Name/Print | Jasmin Cosic | Registration Number | |

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



Autonomous Ex. 2014, p. 285 of 510
Tesla v. Autonomous
IPR2023-01055

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15340991 |
| Filing Date | 2016-11-02 |
| First Named Inventor | Jasmin Cosic |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 7113946 | | 2006-09-26 | Cosic | |
| | 2 | 7117225 | | 2006-10-03 | Cosic | |
| | 3 | 8335805 | | 2012-12-18 | Cosic | |
| | 4 | 8417740 | | 2013-04-09 | Cosic | |
| | 5 | 8572035 | | 2013-10-29 | Cosic | |
| | 6 | 8655900 | | 2014-02-18 | Cosic | |
| | 7 | 9047324 | | 2015-06-02 | Cosic | |
| | 8 | 9282309 | | 2016-03-08 | Cosic | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 9 | 9298749 | | 2016-03-29 | Cosic | |
| | 10 | 9367806 | | 2016-06-14 | Cosic | |
| | 11 | 9443192 | | 2016-09-13 | Cosic | |

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|---|---|---|---|---|---|---|
| | 1 | 20030065662 | | 2003-04-03 | Cosic | |
| | 2 | 20040194017 | | 2004-09-30 | Cosic | |
| | 3 | 20050149517 | | 2005-07-07 | Cosic | |
| | 4 | 20050149542 | | 2005-07-07 | Cosic | |
| | 5 | 20050289105 | | 2005-12-29 | Cosic | |
| | 6 | 20100023541 | | 2010-01-28 | Cosic | |

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
| | Examiner Name | |
| | Attorney Docket Number | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 7 | 20100082536 | | 2010-04-01 | Cosic | |
| | 8 | 20130218932 | | 2013-08-22 | Cosic | |
| | 9 | 20130226974 | | 2013-08-29 | Cosic | |
| | 10 | 20160140999 | | 2016-05-19 | Cosic | |
| | 11 | 20160142650 | | 2016-05-19 | Cosic | |
| | 12 | 20160246819 | | 2016-08-25 | Cosic | |
| | 13 | 20160246850 | | 2016-08-25 | Cosic | |
| | 14 | 20160246868 | | 2016-08-25 | Cosic | |
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|---|---|---|
| | Application Number | 15340991 |
| | Filing Date | 2016-11-02 |
| | First Named Inventor | Jasmin Cosic |
| | Art Unit | |
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The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| Signature | /Jasmin Cosic/ | Date (YYYY-MM-DD) | 2016-11-10 |
|---|---|---|---|
| Name/Print | Jasmin Cosic | Registration Number | |

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 27480807 |
| **Application Number:** | 15340991 |
| **International Application Number:** | |
| **Confirmation Number:** | 1993 |
| **Title of Invention:** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION |
| **First Named Inventor/Applicant Name:** | Jasmin Cosic |
| **Customer Number:** | 116094 |
| **Filer:** | Jasmin Cosic |
| **Filer Authorized By:** | |
| **Attorney Docket Number:** | |
| **Receipt Date:** | 10-NOV-2016 |
| **Filing Date:** | |
| **Time Stamp:** | 20:16:32 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Information Disclosure Statement (IDS) Form (SB08) | IDS_Part1.pdf | 615743<br>e8e[illegible]955d6 | no | 13 |

**Warnings:**

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| **Information:** | | | | | |
| 2 | Information Disclosure Statement (IDS) Form (SB08) | IDS_Part2.pdf | 613126<br>c897c545b8c95a31e6ac9a660e6f9662410b4212 | no | 5 |
| **Warnings:** | | | | | |
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| 3 | Information Disclosure Statement (IDS) Form (SB08) | IDS_Part3.pdf | 614630<br>0d0e1bd38f595efb755d3fb7bfe296fc8a989a2b | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Information Disclosure Statement (IDS) Form (SB08) | IDS_Part4.pdf | 612917<br>e10b0c0937c60a310686e40a525d3c41a97969f0 | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Non Patent Literature | NPL_Part1.pdf | 19779115<br>ee07479784f30836d39a22bda6b5ec735694f56e | no | 380 |
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**National Stage of an International Application under 35 U.S.C. 371**
**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

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**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## ABSTRACT

Aspects of the disclosure generally relate to computing enabled devices and/or systems, and may be generally directed to devices, systems, methods, and/or applications for learning a device's operation in various circumstances, storing this knowledge in a knowledgebase (i.e. neural network, graph, sequences, etc.), and enabling autonomous operation of the device.




Autonomous Ex. 2014, p. 295 of 510
Tesla v. Autonomous
IPR2023-01055

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Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
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## Secrecy Order 37 CFR 5.2:

☐ Portions or **all** of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

## Inventor Information:

**Inventor** 1 — Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Jasmin | | Cosic | |

**Residence Information (Select One)** ● US Residency ○ Non US Residency ○ Active US Military Service

| City | State/Province | Country of Residence |
|---|---|---|
| Miami | FL | US |

**Mailing Address of Inventor:**

| | |
|---|---|
| **Address 1** | 108 Woodbury Street |
| **Address 2** | |

| City | State/Province | Postal Code | Country |
|---|---|---|---|
| Pawtucket | RI | 02861 | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

## Correspondence Information:

**Enter either Customer Number or complete the Correspondence Information section below.**
**For further information see 37 CFR 1.33(a).**

☐ **An Address is being provided for the correspondence Information of this application.**

| | | | |
|---|---|---|---|
| **Customer Number** | 116094 | | |
| **Email Address** | cpapc29@hotmail.com | Add Email | Remove Email |

## Application Information:

| | | | |
|---|---|---|---|
| **Title of the Invention** | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | | |
| **Attorney Docket Number** | | **Small Entity Status Claimed** | ☒ |
| **Application Type** | Nonprovisional | | |
| **Subject Matter** | Utility | | |
| **Total Number of Drawing Sheets (if any)** | 40 | **Suggested Figure for Publication (if any)** | 2 |

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

## Filing By Reference:

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For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
|---|---|---|
| | | |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☒ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

| Please Select One: | ● Customer Number | US Patent Practitioner | ◯ Limited Recognition (37 CFR 11.9) |
|---|---|---|---|
| Customer Number | | | |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

| Prior Application Status | | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing or 371(c) Date (YYYY-MM-DD) |
| | | | |

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

PTO/AIA/14 (11-15)
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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | |
|---|---|---|
| | Application Number | |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

| Application Number | Country[i] | Filing Date (YYYY-MM-DD) | Access Code[i] (if applicable) |
|---|---|---|---|
| | | | |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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## Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

**NOTE**: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

**1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)**

**A. Priority Document Exchange (PDX)** - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

**B. Search Results from U.S. Application to EPO** - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

**2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)**

☒ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☒ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

**NOTE:** Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | |
|---|---|---|
| | Application Number | |
| Title of Invention | ARTIFICIALLY INTELLIGENT SYSTEMS, DEVICES, AND METHODS FOR LEARNING AND/OR USING A DEVICE'S CIRCUMSTANCES FOR AUTONOMOUS DEVICE OPERATION | |

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

**Applicant** 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

| Assignee | Legal Representative under 35 U.S.C. 117 | Joint Inventor |
|---|---|---|
| Person to whom the inventor is obligated to assign. | Person who shows sufficient proprietary interest | |

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

**Mailing Address Information For Applicant:**

| | | | |
|---|---|---|---|
| **Address 1** | | | |
| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** | | Postal Code | |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Applicant Data may be generated within this form by selecting the Add button. Add

## Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.