UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte GEORGIOS CHRYSANTHAKOPOULOS

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Appeal 2017-000921
Application 13/156,341
Technology Center 3600

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Before MAHSHID D. SAADAT, KRISTEN L. DROESCH, and
TERRENCE W. McMILLIN, *Administrative Patent Judges.*

SAADAT, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's
Non-Final Rejection of claims 1–20, which are all the claims pending in this
application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

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STATEMENT OF THE CASE

Appellant's invention relates to a systems and methods for performing localization and navigation within an environment. Spec. ¶ 3. Exemplary claims 1 and 19 under appeal read as follows:

    1.   A location system, comprising:

    a processor configured to implement location modules for an agent, wherein the modules comprise:

    a belief determination module configured to determine a predicted location from a probabilistic belief associated with an extent to which the agent is associated with a location represented on a directed graph, based, at least in part, on a comparison of a currently collected input image with a plurality of images associated with the directed graph; and

    a comparison module configured to analyze a currently collected input image having a highest probability of matching a current location to generate a list of indices representing features in the currently collected input image, and compare each of the indices representing features in the currently collected input image with a dictionary of indices representing locations in a three dimensional (3D) point cloud to obtain a metric-accurate location for the agent.

    19.   One or more computer-readable storage media for storing computer readable instructions, the computer-readable instructions providing a location system when executed by one or more processing devices, the computer-readable instructions comprising:

    code configured to receive an input image provided by an agent within an environment;

    code configured to compare the input image with a plurality of images associated with a directed graph to produce a probable location for the agent;

    code configured to analyze a currently collected input image correlated with the probable location to generate a list of

indices representing three dimensional (3D) features in the input image; and

    code configured to compare the list of indices from the currently collected input image with a dictionary of indices to generate a metric-accurate location, wherein each value in the list of indices is a single number representing a feature in a 3D point cloud and wherein the list of indices comprises a metric map of the environment.

Claims 19 and 20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. *See* Non-Final Act. 3–4.

Claims 1–20 stand rejected under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. *See* Non-Final Act. 4–6.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments in the Briefs. For the reasons discussed below, we are not persuaded by Appellant's arguments that the Examiner erred in rejecting claims 19 and 20 under 35 U.S.C. § 101. We adopt as our own, the findings and reasons set forth by the Examiner in the Office Action from which this appeal is taken (Non-Final Act. 2–3) and in the Examiner's Answer in response to Appellant's Appeal Brief (Ans. 6–10). However, we reach the opposite conclusion with respect to the rejection of claims 1–20 under 35 U.S.C. § 112 (pre-AIA), first paragraph. For emphasis, we consider and highlight specific arguments as presented in the Briefs.

Section 101 Rejection

The broadest reasonable interpretation of claims drawn to computer readable media generally includes transitory propagating signals. *See* David J. Kappos, *Subject Matter Eligibility of Computer Readable Media*, 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010). Under such interpretation, although claim 19 recites the word "storage," this claim includes transitory propagating signals and encompasses non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356–57 (Fed. Cir. 2007); *Ex parte Mewherter*, 726 F.3d 62 (PTAB 2013) (precedential). Further, although Appellant's Specification describes "computer readable storage" (Spec. ¶ 187), Appellant's description of "computer readable storage media" does not unambiguously disclaim transitory forms, rather it encompasses media for transitorily carrying a signal as follows:

> More generally, code and other information can be stored on any computer readable storage 2912, including, but not limited to, static memory storage devices, magnetic storage devices, optical storage devices, and so on. Such computer readable storage 2912 may include hard drives, flash drives, digital versatile disks (DVDs), compact disks (CDs), and the like. The term computer readable storage also encompasses plural storage devices.

Id.

Furthermore, Paragraph 186 of the Specification describes that system 2900 "may be in communication with an agent 100" and Paragraph 188 describes system 2900 as including "one or more network interface 2922 for exchanging data with other devices via one or more communication conduits 2924." Because Appellant has not offered a persuasive reason to depart from the usual presumptions regarding claims drawn to computer

readable media, we agree with the Examiner that claim 19 is directed to non-statutory subject matter. *See* Ans. 5–7.

Thus, for the reasons discussed above, we sustain the Examiner's rejection of representative claim 19, as well as claim 20 not separately argued, under 35 U.S.C. § 101.

Section 112 Rejection

The Examiner finds the term "to analyze a currently collected input image having a highest probability of matching a current location," as recited in claim 1, has no support in the Specification. Non-Final Act. 4–6. The Examiner specifically asserts Paragraph 111 of the Specification describes "identifying a portion of the 3D point cloud having the highest probability of matching the current image," but does not provide any specific description of the claimed feature. Non-Final Act. 5. We disagree.

"[T]he description requirement does not demand any particular form of disclosure, or that the specification recite the claimed invention *in haec verba*." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010) (*en banc*) (citation omitted). Rather, "the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad*, 598 F.3d at 1351.

Here, as explained by Appellant, the disclosure in Paragraphs 117–119 of Specification describes a belief determination module and image similarity scores that assess a degree of similarity between the current input image and the graph images. App. Br. 12. Appellant further points to Paragraph 121 of the Specification describing a comparison module 1008

that analyzes the input image or images with the highest probabilities. App. Br. 13; Reply Br. 3–4. Consistent with Appellant's arguments, we agree with Appellant that these descriptions would reasonably convey to a person of ordinary skill in the art that analyzing the output from a probabilistic calculation, among other things, specify "to analyze the currently collected input image having a highest probability of matching a current location." *See* Reply Br. 3.

Thus, we are persuaded by Appellant's argument that the Specification provides written description support for the limitation "to analyze a currently collected input image having a highest probability of matching a current location," as recited in claim 1 and similarly in other independent claims, and that the Examiner erred by rejecting the pending claims under § 112, first paragraph.

DECISION

We affirm the Examiner's decision to reject claims 19 and 20 under 35 U.S.C. § 101.

We reverse the Examiner's decision to reject claims 1–20 under 35 U.S.C. § 112.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART