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.
15/833,421	12/06/2017	Paul R. Bastide	P201701723US01/0920.0544C	9153

46157 7590 11/01/2019

EDELL, SHAPIRO, & FINNAN, LLC
9801 Washingtonian Blvd.
Suite 750
Gaithersburg, MD 20878

EXAMINER
CHOY, PAN G

ART UNIT	PAPER NUMBER
3624	

NOTIFICATION DATE	DELIVERY MODE
11/01/2019	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

epatent@usiplaw.com

Office Action Summary	Application No. 15/833,421	Applicant(s) Bastide et al.	
	Examiner PAN G CHOY	Art Unit 3624	AIA (FITF) Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, 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.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 6 December 2017 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ 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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Introduction

2. The following is a **non-final** Office Action in response to Applicant's submission filed on December 6, 2017.

Currently claims 1-20 are pending. Claims 1, 8 and 15 are independent.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 12/06/2017 and 08/09/2017 appear to be in compliance with the previsions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the Examiner.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claims 1-20** are rejected under 35 U.S.C. 101 because the claimed invention is directed to an abstract idea without significantly more.

As per Step 1 of the subject matter eligibility analysis, it is to determine whether the claim is directed to one of the four statutory categories of invention, i.e., process, machine, manufacture, or composition of matter.

In this case, claims 1-7 are directed to a method for scheduling asset expiration, which falls within the statutory category of a process; claims 8-13 are directed to a system comprising at least one processors, which falls within the statutory category of a machine; and claims 14-20 are rejected below because the claims are directed to a computer readable media covers both statutory and non-statutory embodiments (under the broadest reasonable interpretation), which falls outside of the four statutory categories; however, claims 14-20 will be included in the *Alice* analysis for the purpose of compact prosecution.

Claims 14-20 are directed to a computer readable medium. The claims do not fall within one of the four categories of patent eligible subject matter because the broadest reasonable interpretation a claim drawn to a computer readable medium typically covers forms of ***non-transitory*** tangible media and ***transitory*** propagating signals per se in view of ordinary and customary meaning of readable medium. See MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a transitory signal per se, the claim must be rejected under 35 U.S.C. 101 as covering non-statutory subject matter. (*In re Nuitjen*, Docket no. 2006-1371 (Fed.

Cir. Sept. 20, 2007) (slip. op. at 18)). Examiner respectfully suggests Applicant to amend the claims with the phrase "**non-transitory**" for all computer-readable medium, memory and storage device.

In Step 2A of the subject matter eligibility analysis, it is to "determine whether the claim at issue is directed to a judicial exception (i.e., an abstract idea, a law of nature, or a natural phenomenon). Under this step, a two-prong inquiry will be performed to determine if the claim recites a judicial exception (an abstract idea enumerated in the 2019 Guidance), then determine if the claim recites additional elements that integrate the exception into a practical application of the exception. *See* 2019 Revised Patent Subject Matter Eligibility Guidance (2019 Guidance), 84 Fed. Reg. 50, 54-55 (January 7, 2019).

In Prong One, it is to determine if the claim recites a judicial exception (an abstract idea enumerated in the 2019 Guidance, a law of nature, or a natural phenomenon).

Here, taking the method claims as representative, the claims recite limitations of "analyzing wireless signals transmitted by a plurality of user devices…, monitoring actions of second user [] to determine a level of concentration…, determine a probability of a physical interaction…, managing physical interactions of the one or more first users with the second user". The limitations as drafted, are directed to the concepts in certain methods of organizing human activity related to managing interactions between people. In addition, the steps of: analyzing, identify, monitoring, determining, notifying, and negotiating are concepts can also be performed in the human mind (including an observation, evaluation, judgment, opinion), as grouped in the mental processed grouping. That is, other than reciting "via a processor", nothing in the claim elements precludes the steps from practically being performed in the human mind. The claims encompass the user manually calculating the proximity and probabilities. The mere

nominal recitation of a processor does not take the claim limitations out of the mental processes grouping. Thus, the claims recite an abstract idea.

In Prong Two, it is to determine if the claim recites additional elements that integrate the exception into a practical application of the exception.

Here, The claims as a whole merely describes how to generally managing physical interactions between users. Beyond the abstract idea, the claims recite the additional element of "a processor" for performing the steps. The "processor" itself is nothing more than a generic computer component. When considered as a combination, this processor amounts to no more than mere instructions to apply the exception using the generic computer component because this processor is recited at a high level of generality and merely invoked as a tool to perform the steps and apply instructions of an abstract idea in a particular technological environment. Thus, simply implementing the abstract idea on a generic computer is not qualify as a practical application being recited in the claims along with the abstract idea. Accordingly, the additional elements do not integrate the abstract idea into a practical application. The claims are directed to an abstract idea.

In Step 2B of *Alice,* it is "a search for an 'inventive concept'—i.e., an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept' itself.'" *Id.* (alternation in original) (*quoting Mayo Collaborative Servs. v. Prometheus Labs., Inc.,* 132 S. Ct. 1289, 1294 (2012)).

The claims as described in Prong Two above, nothing in the claims that integrates the abstract idea into a practical application. The same analysis applies here in Step 2B.

The claims recite the additional element "a processor" for performing the steps. This limitations when taken individually and as an ordered combination amounts to no more than a generic computer component because this processor is recited at a high level of generality and merely invoked as a tool to perform the steps and apply instructions of an abstract idea in a particular technological environment. The Specification supports the view of a generic computer can be implemented the abstract idea, such as "the system may be implemented by any conventional or other portable computing systems, such as a laptop, tablet, smartphone or other mobile computing device, etc." (see ¶ 19-20). Thus, the combination of elements do not amount to "significantly more" than the abstract idea because they neither (1) effect any improvements to the functioning of the computer itself; (2) effect any improvements to another technology or technical field; (3) apply the abstract idea with, or by use of, a particular machine (MPEP 2106.05(b)); (4) effect a transformation or reduction of a particular article to a different state or thing (MPEP 2106.05(c)); nor (5) provide other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment, such that the claims as a whole is more than a drafting effort designed to monopolize the exception (MPEP 2106.05(e). Accordingly, claims do not impose any meaningful limits on practicing the abstract idea, Thus, the claims are directed to an abstract idea.

Claim Rejections - 35 USC § 103

6. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

7. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-20** are rejected under 35 U.S.C. 103 as being unpatentable over Anderson et al., (US 2015/0177939, hereinafter: Anderson), and in view of Takagi et al., (US 2009/0248436, hereinafter: Takagi).

Regarding claim 1, Anderson discloses a method of managing physical interactions between users comprising:

analyzing, via a processor, wireless signals transmitted by a plurality of user devices within a physical area to identify one or more first users within proximity of a second user in the physical area (see Fig. 6, # 646; ¶ 18, ¶ 48, ¶ 72 and ¶ 84);

monitoring actions of the second user, via a processor, to determine a level of concentration of the second user in performing a task (see ¶ 34-36, ¶ 71 and ¶ 83);

determining, via a processor, a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user (see Fig. 6, # 628; ¶ 43).

Anderson discloses facilitating the first person to interact with the second person if the probability is higher (see ¶ 13, ¶ 25 and ¶ 43).

Anderson does not explicitly disclose managing the physical interaction; however, Takagi in an analogous art of virtual social group management discloses

managing, via a processor, physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task (see ¶ 160: manages the first user and one or more second users to interact with one another based on a friend relationship). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claims 2, 9 and 15, Anderson discloses the method/system/medium, further comprising:

identifying a first user in proximity of the second user (see ¶ 13, ¶ 18 and ¶ 28);

determining a first probability indicating that a physical interaction between the first user and the second user is likely (see ¶ 43);

determining a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user (see ¶ 38 and ¶ 52).

Anderson does not explicitly disclose managing the physical interaction; however, Takagi in an analogous art of virtual social group management discloses

managing the negative interaction between the first user and second user based on the second probability to maintain focus of the second user (see ¶ 160: manages the first user and one or more second users to interact with one another based on a friend relationship). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claim, 10 and 16, Anderson does not explicitly disclose the following limitations; however, Takagi discloses the method/system/medium, wherein managing the negative interaction further comprises: notifying the first user to avoid interaction with the second user (see ¶ 164). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claims 4, 11 and 17, Anderson discloses the method/system/medium, wherein managing the negative interaction further comprises:

negotiating with the first user to identify an opportunity to physically interact with the second user (see ¶ 37 and ¶ 50).

Regarding claims 5, 12 and 18, Anderson discloses the method/system/medium, further comprising:

identifying a plurality of first users in proximity of the second user (see ¶ 13, ¶ 18 and ¶ 28);

determining a first probability indicating that a physical interaction between the plurality of first users and the second user is likely (see ¶ 43 and ¶ 49); and

determining an order for the plurality of first users to physically interact with the second user (see ¶ 99).

Regarding claims 6, 13 and 19, Anderson discloses the method of claim 4, further comprising:

determining a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user (see ¶ 38 and ¶ 52); and

Anderson does not explicitly disclose managing the physical interaction; however, Takagi in an analogous art of virtual social group management discloses

managing the negative interaction between the plurality of first users and second user based on the second probability to maintain focus of the second user (see ¶ 160: manages the

first user and one or more second users to interact with one another based on a friend relationship). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claims 7, 13 and 20, Anderson does not explicitly disclose managing the physical interaction; however, Takagi discloses the method/system/medium, wherein managing physical interactions further comprises:

notifying the identified one or more first users within proximity of the second user to avoid physically interacting with the second user in response to a private mode being enabled for the second user (see ¶ 143-145). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claim 8, Anderson discloses a system for managing physical interactions between users comprising:

at least one processor (see Fig. 7, # 702; ¶ 15) configured to:

analyze wireless signals transmitted by a plurality of user devices within a physical area to identify one or more first users within proximity of a second user in the physical area (see ¶ 18, ¶ 48, ¶ 72 and ¶ 84);

monitor actions of the second user to determine a level of concentration of the second user in performing a task (see ¶ 34-36, ¶ 71 and ¶ 83);

determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user (see ¶ 43).

Anderson discloses facilitating the first person to interact with the second person if the probability is higher (see ¶ 13, ¶ 25 and ¶ 43).

Anderson does not explicitly disclose managing the physical interaction; however, Takagi in an analogous art of virtual social group management discloses

manage physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task (see ¶ 160: manages the first user and one or more second users to interact with one another based on a friend relationship). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of

ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding claim 14, Anderson discloses a computer program product for managing physical interactions between users, the computer program product comprising a computer readable storage medium having computer readable program code embodied therewith (see ¶ 62), the computer readable program code executable by at least one processor to cause the at least one processor to:

analyze wireless signals transmitted by a plurality of user devices within a physical area to identify one or more first users within proximity of a second user in the physical area (see ¶ 18, ¶ 48, ¶ 72 and ¶ 84);

monitor actions of the second user to determine a level of concentration of the second user in performing a task (see ¶ 34-36, ¶ 71 and ¶ 83);

determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user (see ¶ 43).

Anderson discloses facilitating the first person to interact with the second person if the probability is higher (see ¶ 13, ¶ 25 and ¶ 43).

Anderson does not explicitly disclose managing the physical interaction; however, Takagi in an analogous art of virtual social group management discloses

manage physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task (see ¶ 160: manages the first user and one or more second users to interact with one another based on a friend

relationship). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the system of Anderson to include teaching of Takagi in order to gain the commonly understood benefit of such adaption, such as providing the benefit of a more optimal solution, in turn of operational efficiency. Since the combination of each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAN G CHOY whose telephone number is (571)270-7038. The examiner can normally be reached on 5/4/9 compressed work schedule.

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, Christine Behncke can be reached at (571) 272-8103. 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.

/PAN G CHOY/
Primary Examiner, Art Unit 3624

REMARKS

Claims 1, 8, and 14 have been amended. In this Amendment, Applicant has amended claims 1, 8, and 14 in this application to facilitate expeditious prosecution of the application. Applicant is not conceding that the subject matter encompassed by the claims prior to this Amendment is unpatentable over the art and rejections cited by the Examiner. Applicant respectfully reserves the right to pursue claims in one or more continuing applications, including claims capturing the subject matter encompassed by claims 1, 8, and 14 prior to this Amendment and additional claims.

Claims 1 – 20 are present in the subject application.

In the Office Action dated November 1, 2019, the Examiner has rejected claims 1 – 20 under 35 U.S.C. §101 as being directed to non-statutory subject matter, and has rejected claims 1 – 20 under 35 U.S.C. §103. Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

INTERVIEW

Initially, Applicant's representative gratefully acknowledges the courtesies extended by Examiner Choy during the recent telephone Interview of January 22, 2020. In order to expedite prosecution of the subject application, a proposed independent claim was submitted that recited the features of:

detecting, via a processor, wireless signals transmitted by a plurality of user devices within a physical area and deriving strengths of the wireless signals;

identifying, via a processor, one or more first users within proximity of a second user in the physical area based on the strengths of the wireless signals transmitted by the plurality of user devices;

monitoring actions of the second user, via a processor, to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing and analyzing images of the second user to determine the level of concentration based on an amount of motion of the second user within the captured images;

notifying the user devices of the one or more first users to delay the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the captured images; and

notifying the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

As discussed in the Interview Summary submitted herewith, no agreement was reached.

REJECTION UNDER 35 U.S.C. §101

Medium

The Examiner has rejected claims 14 – 20 under 35 U.S.C. §101 as being directed toward non-statutory subject matter. The Examiner takes the position that the claims are drawn to a computer readable medium that typically covers forms of non-transitory tangible media and transitory propagating signals per se.

This rejection is respectfully traversed. Initially, independent claim 14 recites "computer readable storage media." The specification clearly distinguishes a computer readable storage medium from transitory signals. In particular, the specification discloses that a computer readable storage medium can be a **tangible** device that can retain and store instructions for use by an instruction execution device (e.g., a computer diskette, a hard disk, a RAM, a ROM, a CD-ROM, etc.). The specification further states that a **computer readable storage medium is NOT to be construed as being transitory signals per se** (e.g., See Paragraph 0072 of the published version of the subject application (U.S. Patent Application Publication No. 2019/0171991)).

Accordingly, the claimed computer readable storage media are clearly directed to statutory subject matter, and claims 14 - 20 are considered to overcome this rejection.

Alleged Abstract Idea

The Examiner has rejected claims 1 – 20 under 35 U.S.C. §101 as being directed toward non-statutory subject matter.

The Examiner takes the position that the claims are directed to an abstract idea, namely certain methods of organizing human activity related to managing interactions between people and mental processes. The Examiner takes the further position that the claims do not recite significantly more than the abstract idea and, therefore, do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea.

This rejection is respectfully traversed. Initially, the 2019 Revised Patent Subject Matter Eligibility Guidance of January 7, 2019, 84 Fed. Reg. 50 (2019), specifies the revised procedure for determining subject matter eligibility. Specifically, the 2019 Revised Patent Subject Matter Eligibility Guidance is based on supporting case law of the Supreme Court and Federal Circuit cited therein, and indicates that the test for determining subject matter eligibility consists of the following steps:

1) determining whether the claimed subject matter falls within one of the statutory categories of patentable subject matter identified by 35 U.S.C. §101 (process, machine, manufacture, or composition of matter); and

2) when the claimed subject matter falls within one of the statutory categories, applying the Alice/Mayo test for judicial exceptions consisting of:

2A) determining whether the claim is directed to a law of nature, a natural phenomenon, or an abstract idea; and, if so

2B) determining whether any additional element or combination of elements in the claim is sufficient to ensure that the claim amounts to significantly more than the abstract idea.

Step 1: Statutory Categories

The Examiner concedes at Page 3 of the Office Action that claims 1 – 13 fall within the statutory categories. Clams 14 – 20 also fall within the statutory categories for at least the reasons discussed above with respect to the computer readable storage media.

Step 2A: Determining Whether the Claim is Directed to a Judicial Exception

With respect to Step 2A, the 2019 Revised Patent Subject Matter Eligibility Guidance specifies that the following two prong inquiry is to be applied to determine whether the claim is directed to a judicial exception:

i) evaluate whether the claim recites a judicial exception (i.e., an abstract idea, a law of nature, or a natural phenomenon); and, if so

ii) evaluate whether the judicial exception is integrated into a practical application.

Prong (i) – Determining Whether the Claim Recites a Judicial Exception

According to the 2019 Revised Patent Subject Matter Eligibility Guidance, the evaluation of prong (i) of Step 2A consists of determining whether specific claim limitations identified as an abstract idea fall within subject matter groupings of abstract ideas. These subject matter groupings include mathematical concepts, certain methods of organizing human activity, and mental processes.

If the claim does not recite a judicial exception (a law of nature, a natural phenomenon, or subject matter within the subject matter groupings of abstract ideas), then the claim is eligible (except in rare instances).

In order to expedite prosecution of the subject application, independent claim 1 has been amended, and recites the features of:

detecting, via a transceiver, wireless signals transmitted by a plurality of user devices within a physical area and deriving strengths of the wireless signals;

identifying, via a processor, one or more first users within proximity of a second user in the physical area based on the strengths of the wireless signals transmitted by the plurality of user devices;

monitoring actions of the second user, via a processor, to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing images of the second user and performing image processing on the captured images of the second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing;

performing machine learning, via a processor, by applying a machine learning model to determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user, wherein the machine learning model is trained with past locations and physical interactions of the users of the plurality of user devices;

establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the image processing of the captured images; and

communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

Independent claims 8 and 14 have also been amended in order to expedite prosecution of the subject application, and recite similar features.

Monitoring users (by detecting wireless signals of user devices to determine user locations, performing image processing to determine a state of a user, and applying machine learning using trained machine learning models to anticipate interactions) and establishing a communication session with the user devices over a wireless network to avoid interactions clearly does not fall into any of the above subject matter groupings of abstract ideas (mathematical concepts, methods of organizing human activity, and mental processes). Accordingly, since the claims do not fall into any of the above subject matter groupings of abstract ideas, the claims are not directed to a judicial exception, and are considered to comply with 35 U.S.C. §101.

Prong(ii) – Determining Whether the Judicial Exception is Integrated into a Practical Application

According to the 2019 Revised Patent Subject Matter Eligibility Guidance, the evaluation of prong (ii) of Step 2A consists of identifying whether there are any additional elements recited in the claim beyond the judicial exception and evaluating those additional elements individually and in combination to determine whether they integrate the judicial exception into a practical application. **If the recited judicial exception is integrated into a practical application of the judicial exception, then the claim is eligible.**

This evaluation specifically excludes consideration of whether the additional elements represent well-understood, routine, and conventional activity. In other words, a

claim that includes conventional elements may still integrate a judicial exception into a practical application, thereby satisfying the subject eligibility requirement of 35 U.S.C. §101.

Considerations that are indicative that an additional element (or combination of elements) may have integrated the judicial exception into a practical application include an additional element that reflects an improvement in the functioning of a computer, or an improvement to another technology or technical field.

Initially, the claims do not recite a judicial exception as discussed above. However, even if the claims can somehow be construed to recite a judicial exception that falls within the above subject matter groupings, the claims integrate the judicial exception into a practical application to render the claims statutory.

As discussed above, a present invention embodiment monitors users (by detecting wireless signals of user devices to determine user locations, performing image processing to determine a state of a user, and applying machine learning using trained machine learning models to anticipate interactions) and establishes a communication session with the user devices over a wireless network to avoid interactions. This improves monitoring systems by being able to determine locations of users and anticipate interactions (by employing machine learning) in order to avoid those interactions prior to occurrence.

Accordingly, the claims satisfy one or more of the above factors (e.g., improve the computer and/or another technology), and are considered to integrate any alleged judicial exception into a practical application, thereby complying with 35 U.S.C. §101.

REJECTION UNDER 35 U.S.C. §103

The Examiner has rejected claims 1 – 20 under 35 U.S.C. §103 as being unpatentable over U.S. Patent Application Publication No. 2015/0177939 (Anderson et al.), and in view of U.S. Patent Application Publication No. 2009/0248436 (Takagi et al.).

Briefly, an embodiment of the present invention detects proximity of users within a physical area and manages physical interactions between users to avoid conflicts among multiple parties and/or startled states of users arising from interruptions while engaged in a task. For example, an embodiment of the present invention may detect when multiple parties are going to travel to a location of an individual for physical interaction, thereby leading to conflicts. When this event is detected, an embodiment of the present invention may ensure that the multiple parties resolve the conflicts among themselves.

This rejection is respectfully traversed since the proposed combination does not render obvious each and every feature of the claims. However, in order to expedite prosecution of the subject application, independent claim 1 has been amended, and recites the features of:

monitoring actions of the second user, via a processor, to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing images of the second user and performing image processing on the captured images of the second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing;

performing machine learning, via a processor, by applying a machine learning model to determine a probability of a physical interaction of the one or more first users with the second

user causing loss of focus by the second user, wherein the machine learning model is trained with past locations and physical interactions of the users of the plurality of user devices;

establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the image processing of the captured images; and

communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

Independent claims 8 and 14 have also been amended in order to expedite prosecution of the subject application, and recite similar features.

The Anderson et al. publication does not disclose, teach or suggest these features. Rather, the Anderson et al. publication discloses a user interface based on a wearable device interaction. A user interaction may be received at a wearable device interface from a user. Wearable devices are objects that are designed to be worn on the body and interacted with while being worn. A context corresponding to the user interaction may be identified. An action may be initiated based on the user interaction and context (e.g., See Paragraphs 0015, 0017, 0019, 0059, and 0060).

Thus, the Anderson et al. publication discloses utilizing context information (e.g., derived from a wearable device with sensors) associated with an interaction to perform a corresponding action in response to the interaction. There is no disclosure of delaying an interaction until a user

becomes available based on a detected change in concentration level or, for that matter, capturing images of the second user and performing image processing on the captured images of the second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing, performing machine learning by applying a machine learning model (trained with past locations and physical interactions of the users of the plurality of user devices) to determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user, establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions, and communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available (based on a change in the level of concentration determined from the image processing of the captured images) as recited in the independent claims.

The Takagi et al. publication does not compensate for the above deficiencies. Rather, the Takagi et al. publication discloses a social networking services (SNS) system that causes information on each second user to be displayed based on the type of relationship between each second user and the first user. Although conventional SNS systems employ only the friend personal relationship, the SNS system employs nine personal relationship modes (e.g., See Paragraphs 0010, 0045, and 0160). The Takagi et al. publication is merely utilized by the Examiner for an alleged teaching of managing a physical interaction.

Since the proposed combination does not disclose, teach or suggest, the features recited in independent claims 1, 8, and 14 as discussed above, these independent claims are considered to be in condition for allowance.

Dependent claims 2 – 7, 9 – 13, and 15 - 20 depend, either directly or indirectly, from independent claims 1, 8, or 14 and, therefore, include all the limitations of their parent claims. If an independent claim is nonobvious, **then any claim dependent therefrom is nonobvious**. See M.P.E.P. §2143.03.

CONCLUSION

In view of the foregoing, Applicant respectfully requests the Examiner to find the application to be in condition for allowance with claims 1 - 20. However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney or agent to discuss any unresolved issues and to expedite the disposition of the application.

Applicant hereby petitions for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 09-0460.

Dated: January 24, 2020

Respectfully submitted by:

EDELL, SHAPIRO & FINNAN, LLC
CUSTOMER NO. 46157
9801 Washingtonian Blvd, Suite 750
Gaithersburg, MD 20878
(301) 424-3640

/Stuart B. Shapiro/

Stuart B. Shapiro
Reg. No. 40169

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method of managing physical interactions between users comprising:

detecting ~~analyzing~~, via a ~~processor~~ transceiver, wireless signals transmitted by a plurality of user devices within a physical area [[to]] and deriving strengths of the wireless signals;

identifying, via a processor, one or more first users within proximity of a second user in the physical area based on the strengths of the wireless signals transmitted by the plurality of user devices;

monitoring actions of the second user, via a processor, to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing images of the second user and performing image processing on the captured images of the second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing;

performing machine learning ~~determining~~, via a processor, by applying a machine learning model to determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user, wherein the machine learning model is trained with past locations and physical interactions of the users of the plurality of user devices; and

managing, via a processor, physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task, wherein managing the physical interactions includes:

establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the image processing of the captured images; and

communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

2. (Original) The method of claim 1, further comprising:

identifying a first user in proximity of the second user;

determining a first probability indicating that a physical interaction between the first user and the second user is likely;

determining a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

managing the negative interaction between the first user and second user based on the second probability to maintain focus of the second user.

3. (Original) The method of claim 2, wherein managing the negative interaction further comprises:

notifying the first user to avoid interaction with the second user.

4. (Original) The method of claim 2, wherein managing the negative interaction further comprises:

negotiating with the first user to identify an opportunity to physically interact with the second user.

5. (Original) The method of claim 1, further comprising:

identifying a plurality of first users in proximity of the second user;

determining a first probability indicating that a physical interaction between the plurality of first users and the second user is likely; and

determining an order for the plurality of first users to physically interact with the second user.

6. (Original) The method of claim 4, further comprising:

determining a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

managing the negative interaction between the plurality of first users and second user based on the second probability to maintain focus of the second user.

7. (Original) The method of claim 1, wherein managing physical interactions further comprises:

notifying the identified one or more first users within proximity of the second user to avoid physically interacting with the second user in response to a private mode being enabled for the second user.

8. (Currently amended) A system for managing physical interactions between users comprising:

a transceiver; and

at least one processor configured to:

detect, via the transceiver, ~~analyze~~ wireless signals transmitted by a plurality of user devices within a physical area [[to]] and derive strengths of the wireless signals;

identify one or more first users within proximity of a second user in the physical area based on the strengths of the wireless signals transmitted by the plurality of user devices;

monitor actions of the second user to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing images of the second user and performing image processing on the captured images of the second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing;

perform machine learning by applying a machine learning model to determine a probability of a physical interaction of the one or more first users with the second user causing

loss of focus by the second user, wherein the machine learning model is trained with past locations and physical interactions of the users of the plurality of user devices; and

manage physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task, wherein managing the physical interactions includes:

establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the image processing of the captured images; and

communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

9. (Original) The system of claim 8, wherein the at least one processor is further configured to:

identify a first user in proximity of the second user;

determine a first probability indicating that a physical interaction between the first user and the second user is likely;

determine a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

manage the negative interaction between the first user and second user based on the second probability to maintain focus of the second user.

10. (Original) The system of claim 9, wherein managing the negative interaction further comprises:

notifying the first user to avoid interaction with the second user.

11. (Original) The system of claim 9, wherein managing the negative interaction further comprises:

negotiating with the first user to identify an opportunity to physically interact with the second user.

12. (Original) The system of claim 8, wherein the at least one processor is further configured to:

identify a plurality of first users in proximity of the second user;

determine a first probability indicating that a physical interaction between the plurality of first users and the second user is likely;

determine an order for the plurality of first users to physically interact with the second user;

determine a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

manage the negative interaction between the plurality of first users and second user based on the second probability to maintain focus of the second user.

13. (Original) The system of claim 8, wherein managing physical interactions further comprises:

notifying the identified one or more first users within proximity of the second user to avoid physically interacting with the second user in response to a private mode being enabled for the second user.

14. (Currently amended) A computer program product for managing physical interactions between users, the computer program product comprising [[a]] one or more computer readable storage ~~medium~~ media collectively having computer readable program code embodied therewith, the computer readable program code executable by at least one processor to cause the at least one processor to:

detect ~~analyze~~, via a transceiver, wireless signals transmitted by a plurality of user devices within a physical area [[to]] and derive strengths of the wireless signals;

identify one or more first users within proximity of a second user in the physical area based on the strengths of the wireless signals transmitted by the plurality of user devices;

monitor actions of the second user to determine a level of concentration of the second user in performing a task, wherein monitoring actions of the second user includes capturing images of the second user and performing image processing on the captured images of the

second user to determine the level of concentration based on an amount of motion of the second user identified within the captured images from the image processing;

perform machine learning by applying a machine learning model to determine a probability of a physical interaction of the one or more first users with the second user causing loss of focus by the second user, wherein the machine learning model is trained with past locations and physical interactions of the users of the plurality of user devices; and

manage physical interactions of the one or more first users with the second user based on the determined probability to maintain focus of the second user on the task, wherein managing the physical interactions includes:

establishing a communication session with the user devices of the one or more first users over a wireless network to communicate over the communication session a delay for the physical interactions;

determining availability of the second user based on a change in the level of concentration determined from the image processing of the captured images; and

communicating over the communication session with the user devices of the one or more first users to initiate the physical interactions when the second user becomes available.

15. (Original) The computer program product of claim 14, wherein the computer readable program code is further configured to cause the at least one processor to:

identify a first user in proximity of the second user;

determine a first probability indicating that a physical interaction between the first user and the second user is likely;

determine a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

manage the negative interaction between the first user and second user based on the second probability to maintain focus of the second user.

16. (Original) The computer program product of claim 15, wherein managing the negative interaction further comprises:

notifying the first user to avoid interaction with the second user.

17. (Original) The computer program product of claim 15, wherein managing the negative interaction further comprises:

negotiating with the first user to identify an opportunity to physically interact with the second user.

18. (Original) The computer program product of claim 14, wherein the computer readable program code is further configured to cause the at least one processor to:

identify a plurality of first users in proximity of the second user;

determine a first probability indicating that a physical interaction between the plurality of first users and the second user is likely; and

determine an order for the plurality of first users to physically interact with the second user.

19. (Original) The computer program product of claim 18, wherein the computer readable program code is further configured to cause the at least one processor to:

determine a second probability indicating that the likely interaction is likely a negative interaction causing loss of focus by the second user; and

manage the negative interaction between the plurality of first users and second user based on the second probability to maintain focus of the second user.

20. (Original) The computer program product of claim 14, wherein managing physical interactions further comprises:

notifying the identified one or more first users within proximity of the second user to avoid physically interacting with the second user in response to a private mode being enabled for the second user.