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16/441,521	06/14/2019	Athanasios Katsamanis	30226-002001	7627

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OCCHIUTI & ROHLICEK LLP
50 Congress Street
Suite 1000
Boston, MA 02109

EXAMINER	
KOTULAK, NICOLE A	

ART UNIT	PAPER NUMBER
4114	

NOTIFICATION DATE	DELIVERY MODE
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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):

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Office Action Summary	Application No. 16/441,521	Applicant(s) Katsamanis et al.	
	Examiner NICOLE A KOTULAK	Art Unit 4114	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 06/14/2019.

☐ 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) 1-14 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) 1-14 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 06/14/2019 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 06/14/2019, 12/20/2019.

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

4) ☐ Other: _____.

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.

Claims 1-14 are pending in this application.

Information Disclosure Statement

2. The information disclosure statement filed 06/14/2019 has an item, Design. ID AD, which fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the Document Number (8798255 B2) and Publication Date (2014-08-05) do not match the Patentee name (Raanani et al.) listed, making it unclear which fields designate the intended reference. The item has not been considered, and marked as such. All other items referred to therein have been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

3. The drawings are objected to because of the following errors:

a. Figure 1

i. Element 132 is not referenced in the specifications.

b. Figure 4

ii. Element Display Device 122 is shown as the input for Recommender 120. However, this contradicts the relationship between

the elements as shown in Fig. 1. It is suggested that element 122 as shown in Fig. 4 is mislabeled, and is, therefore, not properly addressed as an element in the specifications.

iii. Elements 120 (throughout specifications) and 129 (9:22) are both labeled in the specifications as "recommender".

iv. Element 130 is referred to by different labels in the specifications: "recommendation information" (7:2-3), "outputs" (7:10), "recommendation z_n" (9:23), "recommendation z_m" (11:1).

c. Figure 5

v. Element 110 is not referenced in the specifications.

vi. Element 125 is not referenced in the specifications.

d. Figure 6

vii. Element 127 is labeled as "y_i" in the figure, but referred to as "representation y_n" in the specifications (9:13, 22)

viii. Element 130 is shown as "z_i" in the figure, but is referred to by different labels in the specifications: "recommendation information" (7:2-3), "outputs" (7:10), "recommendation z_n" (9:23)

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

4. The disclosure is objected to because of the following informalities: Suggested modification of 7:9-11 to include the corresponding element numbers to "speaker A" and "speaker B", respectively, to read –speaker A 101-- and –speaker B 102--.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 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.

Claims 1-8 and 11-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to an abstract idea without significantly more.

Claims 1, 13, and 14 recite

acquiring signals corresponding to successive communication events between multiple parties;

processing the signals to generate a plurality of profile indicators;

processing the profile indicators to generate a recommendation for presenting to at least one of the parties in the interaction; and

presenting the recommendation to the at least one of the parties.

The limitations of "acquiring signals corresponding to successive communication events...", "generate a plurality of profile indicators", "generate a recommendation...", and "presenting the recommendation...", as drafted, are processes that, under broadest reasonable interpretation, covers performance of the limitation in the mind but for the recitation of generic computer components. More specifically, the mental process of a human listening to a conversation, determining behavioral characteristics of conversation participants, determining how to respond to achieve a desired outcome based on participant behavior, and suggesting the response to one of the participants. If a claim limitation, under its broadest reasonable interpretation, covers performance of the limitation in the mind but for the recitation of generic computer components, then it falls within the --Mental Processes-- grouping of abstract ideas. Accordingly, the claims recite an abstract idea.

This judicial exception is not integrated into a practical application because the recitation in claim 1 of "a method", "acquiring signals", "processing", and "presenting", in

claim 13 of "non-transitory machine-readable medium…" and "a data processing system", and in claim 14 of "a system," "an input," "a data processor," and "an output", read to generalized computer components, based upon the claim interpretation wherein the structure is interpreted using 20:11-17 in the specification. Accordingly, these additional elements do not integrate the abstract idea into a practical application because it does not impose any meaningful limits on practicing the abstract idea. The claims are directed to an abstract idea.

The claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception. As discussed above with respect to the integration of the abstract idea into a practical application, the additional element of using generalized computer components to acquire, process, and present amounts to no more than mere instructions to apply the exception using a generic computer component. Mere instructions to apply an exception using a generic computer component cannot provide an inventive concept. The claims are not patent eligible.

With respect to claim 2, the claim recites **the method of claim 1 wherein the successive communication events comprise conversational turns in a dialog between the multiple parties,** which reads on a human identifying back-and-forth speaking between multiple conversation participants. No additional limitations are present. With respect to claim 3, the claim recites **the method of claim 1 wherein the successive communication events comprise separate dialogs between the multiple parties**, which reads on a human remembering what was said by participants in different conversations. No additional limitations are present. With respect to claim 4,

the claim recites **the method of claim 1 wherein the successive communication events comprise linguistic communication events comprising spoken or textual communication**, which reads on a human identifying speech in either spoken or written format. No additional limitations are present. With respect to claim 5, the claim recites **the method of claim 4 wherein processing the signals to generate the plurality of profile indicators includes performing automated speech recognition of the signals**, which reads on a human recognizing the characteristics of speech, and using that recognition to determine the behavioral characteristics of conversation participants. No additional limitations are present. With respect to claim 6, the claim recites **the method of claim 4 wherein processing the signals to generate the plurality of profile indicators includes semantic analysis of linguistic content of the signals**, which reads to a human understanding the content and meaning of speech, and using that understanding to determine the behavioral characteristics of conversation participants. No additional limitations are present. With respect to claim 7, the claim recites **the method of claim 1 wherein the signals corresponding to successive communication events represent non-verbal behavioral features**, which reads to a human recognizing non-speech behaviors, such as laughing or sighing, as part of the conversation participant input. No additional limitations are present. With respect to claim 8, the claim recites **the method of claim 7 wherein processing the signals to generate the plurality of profile indicators includes performing a direct conversion of a speech signal without explicit recognition of words spoken**, which reads to a human understanding the meaning of non-speech behaviors without the need to recognize words, and using that understanding to determine the behavioral

characteristics of conversation participants. No additional limitations are present. With respect to claim 11, the claim recites **the method of claim 1 wherein the generating of the recommendation is ongoing during an interaction based on events in the interaction that have occurred**, which reads to a human determining how to respond in a conversation to achieve a desired outcome based on participant behavior that is changing throughout the conversation. No additional limitations are present. With respect to claim 12, the claim recites **the method of claim 1 wherein the recommendation includes an indicator related to success of a goal for the interaction**, which reads to a human determining the probability that a specific response during the conversation will effect a desired response from the conversation participants. No additional limitations are present. These claims further do not remedy the judicial exception being integrated into a practical application and further fail to include additional elements that are sufficient to amount to significantly more than the judicial exception.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

7. Claims 1-14 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Raanani et al. (U.S. PG Pub No. 2018/0077286), hereinafter Raanani.

Regarding claim 1, Raanani teaches

A method for aiding a multi-party interaction comprising:

acquiring signals corresponding to successive communication events between multiple parties (Fig. 1 [0017:1-7, 0025:7-11] An analysis component takes input, i.e. acquiring signals, from conversations between a calling party and a called party, i.e. successive communication events between multiple parties.);

processing the signals to generate a plurality of profile indicators ([0022, 0025:7-11] Analysis of the input, i.e. processing the signals, extracts features of conversation, including semantic information, emotional signals, personality traits, and conversation flow, i.e. a plurality of profile indicators.);

processing the profile indicators to generate a recommendation for presenting to at least one of the parties in the interaction ([0023:1-8], [0025:7-20], [0026:1-9] Analysis of the features, i.e. processing the profile indicators, is used to generate classifiers used to generate on-call guidance, i.e. generate a recommendation, for representatives and/or managers, i.e. for presenting to at least one of the parties in the interaction.); **and**

presenting the recommendation to the at least one of the parties ([0028:5-12] On-call guidance, i.e. the recommendation, may be presented on-screen or via another interface to the representative and/or the manager, i.e. presented to at least one of the parties.).

Regarding claim 2, Raanani teaches claim 1, and further teaches **the successive communication events comprise conversational turns in a dialog between the multiple parties** ([0025:7-11] A conversation, i.e. successive communication events, can be ongoing, i.e. conversational turns in a dialog, between a customer and a representative, i.e. between multiple parties, to be used by the real-time analysis component.).

Regarding claim 3, Raanani teaches claim 1, and further teaches **the successive communication events comprise separate dialogs between the multiple parties** ([0035:5-11] Historical call data, i.e. separate dialogs, for conversations, i.e. successive communication events, between participants, i.e. the multiple parties, may be used as input.).

Regarding claim 4, Raanani teaches claim 1, and further teaches **the successive communication events comprise linguistic communication events comprising spoken or textual communication** ([0018] Conversations, i.e. successive communication events, can be in the form of any voice, video, email, or transcripts, i.e. linguistic communication events comprising spoken or textual communication.).

Regarding claim 5, Raanani teaches claim 4, and further teaches **processing the signals to generate the plurality of profile indicators includes performing automated speech recognition of the signals** ([0022] Automatic speech recognition (ASR) is one component used to extract features, i.e. generate a plurality of profile indicators, of an input conversation, i.e. signals.).

Regarding claim 6, Raanani teaches claim 4, and further teaches **processing the signals to generate the plurality of profile indicators includes semantic analysis of linguistic content of the signals** ([0022] Natural language processing (NLP) is one component used to extract features, i.e. generate a plurality of profile indicators, by extracting semantic information, i.e. semantic analysis of linguistic content, of the input conversation, i.e. signals.).

Regarding claim 7, Raanani teaches claim 1, and further teaches **the signals corresponding to successive communication events represent non-verbal behavioral features** ([0045:10-16] Metalinguistic features such as laughter, hesitation, and gasping, i.e. non-verbal behavioral features, can be extracted from the input conversation, i.e. signals corresponding to successive communication events.).

Regarding claim 8, Raanani teaches claim 7, and further teaches **processing the signals to generate the plurality of profile indicators includes performing a direct conversion of a speech signal without explicit recognition of words spoken** ([0045] Features produced, i.e. plurality of profile indicators, may include metalinguistic

features such as laughter, hesitation, and gasping, which can be extracted, i.e. generated, from the input conversation, i.e. signals, despite no words being present, i.e. without explicit recognition of words spoken.).

Regarding claim 9, Raanani teaches claim 1, and further teaches **processing the signals generate the profile indicators comprises processing the signals using a first machine-learning component to generate the profile indicators** ([0036:1-5] A feature generating component 111, generates features, i.e. profile indicators, by analyzing call data, i.e. processing signals, using artificial intelligence (AI) or machine learning (ML), i.e. a first machine-learning component to generate the profile indicators.).

Regarding claim 10, Raanani teaches claim 9, and further teaches **processing the profile indicators to generate a recommendation comprises processing the profile indicators using a second machine-learning component** ([0037:1-7] A classifier component 112, analyzes features to generate classifiers, i.e. processes profile indicators to generate a recommendation, using machine learning algorithms, i.e. a second machine-learning component.).

Regarding claim 11, Raanani teaches claim 1, and further teaches **the generating of the recommendation is ongoing during an interaction based on events in the interaction that have occurred** ([0027, 0038] On-call guidance can change as the call progresses, i.e. generating of the recommendation is ongoing during

an interaction, using classifiers that are updated based on conversation features such as laughter or spoken key-phrases, i.e. based on events in the interaction that have occurred.).

Regarding claim 12, Raanani teaches claim 1, and further teaches **the recommendation includes an indicator related to success of a goal for the interaction** ([0028] On-call guidance, i.e. recommendation, can include real-time probabilities of various outcomes can be produced, i.e. indicator related to success of a goal for the interaction.).

Regarding claim 13, Raanani teaches

A non-transitory machine-readable medium comprising instructions stored thereon, the instructions when executed by a data processing system cause said system to perform steps comprising (Fig. 11, [0124] The instructions are stored in a memory 1110, i.e. non-transitory machine-readable medium comprising instructions stored thereon, can be implemented to program a processor 1105 to carry out the actions, i.e. instructions when executed by a data processing system cause said system to perform steps.):

acquiring signals corresponding to successive communication events between multiple parties (Fig. 1 [0017:1-7, 0025:7-11] An analysis component takes input, i.e. acquiring signals, from conversations between a calling party and a called party, i.e. successive communication events between multiple parties.);

processing the signals to generate a plurality of profile indicators ([0022, 0025:7-11] Analysis of the input, i.e. processing the signals, extracts features of conversation, including semantic information, emotional signals, personality traits, and conversation flow, i.e. a plurality of profile indicators.)**;**

processing the profile indicators to generate a recommendation for presenting to at least one of the parties in the interaction ([0023:1-8], [0025:7-20], [0026:1-9] Analysis of the features, i.e. processing the profile indicators, is used to generate classifiers used to generate on-call guidance, i.e. generate a recommendation, for representatives and/or managers, i.e. for presenting to at least one of the parties in the interaction.)**; and**

presenting the recommendation to the at least one of the parties ([0028:5-12] On-call guidance, i.e. the recommendation, may be presented on-screen or via another interface to the representative and/or the manager, i.e. presented to at least one of the parties.)**.**

Regarding claim 14, Raanani teaches

A system for aiding a multi-party interaction, the system comprising (Fig. 11, [0122] A computer system)**:**

an input for acquiring signals corresponding to successive communication events between multiple parties (Fig. 11, [0122]

Input/output devices 1125, i.e. an input for acquiring signals, are included in the system.)**;**

a data processor (Fig. 11, [0122] One or more central processing units 1105 are included in the system.) **configured to**

process the signals to generate a plurality of profile indicators ([0022, 0025:7-11] Analysis of the input, i.e. processing the signals, extracts features of conversation, including semantic information, emotional signals, personality traits, and conversation flow, i.e. a plurality of profile indicators.)**, and**

process the profile indicators to generate a recommendation for presenting to at least one of the parties in the interaction ([0023:1-8], [0025:7-20], [0026:1-9] Analysis of the features, i.e. processing the profile indicators, is used to generate classifiers used to generate on-call guidance, i.e. generate a recommendation, for representatives and/or managers, i.e. for presenting to at least one of the parties in the interaction.)**; and**

an output for presenting the recommendation to the at least one of the parties (Fig. 11, [0122] Input/output devices 1125, i.e. an output for presenting the recommendation, are included in the system.)**.**

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Patrick et al. (U.S. PG Pub No. 2010/0205103): Conversation between two parties, wherein behavioral profiles are determined, and recommendations made to affect the outcome of the conversation.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE A KOTULAK whose telephone number is (571)270-1474. The examiner can normally be reached on 8:00 - 5:00 M-F.

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, Yuqing Xiao can be reached on (571) 270-3603. 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 https://ppair-my.uspto.gov/pair/PrivatePair. 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.

/N.A.K./
Examiner, Art Unit 4114

/Paras D Shah/
Primary Examiner, Art Unit 2659