

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-08-06
	First Named Inventor	Steven W. Goldstein	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	11472-15-1_AMBZ-101US1	

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	3	20100040079		2010-02-18	Park et al.	
	4	20100299615		2010-11-25	Miluzzo et al.	
	5	20100316033		2010-12-16	Atwal	

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	6	20110065451		2011-03-17	Danado et al.	
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	1	LANE et al., "A Survey of Mobile Phone Sensing," IEEE Communications Magazine, September 2010, pp. 140-150.	
	2	SINGH et al., "Towards Environment-to-Environment (E2E) Multimedia Communication Systems," Multimed Tools Appl (May 5, 2009) 44:361-388.	
	3	International Search Report for International Application No. PCT/US11/068103, dated May 3, 2012.	
	4	Written Opinion for International Application No. PCT/US11/068103, dated May 3, 2012.	

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EXAMINER SIGNATURE

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CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Peter A. Chiabotti/	Date (YYYY-MM-DD)	2018-08-06
Name/Print	Peter A. Chiabotti	Registration Number	54603

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:

☒ Practitioners associated with the Customer Number:

150139

OR

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

Name	Registration Number	Name	Registration Number

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

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

☒ The address associated with Customer Number:

150139

OR

☐ Firm or Individual Name			
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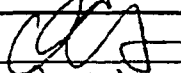
Assignee Name and Address:

Staton Techiya LLC. 16193 Bridlewood Circle, Delray Beach, FL 33445

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

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

Signature		Date	8-14-17
Name	DANIEL C. STATON	Telephone	513-404-0099
Title	MANAGING MEMBER		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Staton Techiya, LLCApplication No./Patent No.: _____ Filed/Issue Date: August 6, 2018Titled: Information Processing Using A Population Of Data Acquisition DevicesStaton Techiya, LLC, a limited liability company

(Name of Assignee)

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

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

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

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

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

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

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

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

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

1. From: Steven W. Goldstein To: Personics Holdings, Inc.The document was recorded in the United States Patent and Trademark Office at
Reel 045000, Frame 0236, or for which a copy thereof is attached.2. From: Personics Holdings, Inc. To: Personics Holdings, LLCThe document was recorded in the United States Patent and Trademark Office at
Reel 032189, Frame 0304, or for which a copy thereof is attached.

[Page 1 of 2]

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4. From: DM Staton Family Limited Partnership To: Staton Techiya, LLC

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

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

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

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

/Peter A. Chiabotti/

August 6, 2018

Signature

Date

Peter A. Chiabotti

54603

Printed or Typed Name

Title or Registration Number

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application is a continuation of and claims priority to U.S. Patent Application Serial No. 13/976,636, filed on October 1, 2013, which is a National Stage Entry of PCT/US11/68103 filed on December 30, 2011, which claims priority to and the benefit of U.S. Provisional Patent Application Serial No. 61/431,507 filed January 11, 2011, and which also claims priority to and the benefit of U.S. Provisional Patent Application Serial No. 61/428,369 filed December 30, 2010, all of which are herein incorporated by reference in their entireties.

FIELD OF THE INVENTION

[0002] The present invention relates to processing of information from a population of data acquisition devices, and in some examples, relates to processing of audio or multimedia data acquired from an adaptively selectable population of personal wireless devices.

BACKGROUND

[0003] Devices that are capable of acquiring, and in some cases locally processing, audio or multimedia information from their local environment have become ubiquitous over the past several years, and there is little reason to expect that such a trend will not continue. For example, "smart" cellular telephones (e.g., Apple iPhone.RTM., Android.TM.-operating system based phones) have significant local processing capabilities as well as audio and video acquisition devices.

SUMMARY OF THE INVENTION

[0004] In one aspect of the present invention, in general, the audio and multimedia acquisition capabilities of a set of devices may be exploited to aggregate acquired content and fuse the information in that content, for instance, for audio scene analysis. In some example

embodiments, devices from a large population may be adaptively selected and/or configured according to triggering events detected at the devices or by the network. Relating to the audio scene, the information sensed and acquired from one or more devices may be processed, customized and personalized to consumers to mitigate, amplify or pass-through acoustic and other information to users, based on factors such as models of users' requirements and users' past information consumption behavior. Thus an exemplary system of the present invention may mediate ambient and explicitly supplied information, especially audio information, and may act as an arbiter of information for the user. Some of the system actions may be based on information from one device, while other actions may be based on information from multiple devices. The information filtered to users may be utilized to form virtual communities based on shared interests and common information, and to ensure that relevant information including alerts, marketing information, and news reaches these communities.

[0005] According to another aspect of the present invention, in general, a distributed system may include a plurality of distributed devices, with at least one of a communication system or one or more of the distributed devices configured as a controller. Each device has at least a communication capability for interchanging information with other of the devices and/or with the communication system. At least one of the devices may include one or more sensors for acquiring sensor data related to the environment of the device. The controller is configured to perform functions including: determining locations of at least some of the devices, selecting devices from among the plurality of devices and receiving information based on the sensor data acquired at the selected devices, and combining the information received from multiple of the selected devices to determine one or more characteristics of the environment of one or more of the devices.

[0006] In other aspects of the present invention, the distributed system may include devices that mediate all audio information sensed at the device to mitigate, amplify or pass-through information. In some examples, such information is optionally logged and analyzed to determine trend-related information.

[0007] Other features and advantages of the invention are apparent from the following description, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The invention may be understood from the following detailed description when read in connection with the accompanying drawing. It is emphasized, according to common practice, that various features of the drawings may not be drawn to scale. On the contrary, the dimensions of the various features may be arbitrarily expanded or reduced for clarity. Moreover, in the drawing, common numerical references are used to represent like features. Included in the drawing are the following figures:

[0009] FIG. 1 is a functional block diagram of an information processing system, according to an exemplary embodiment of the present invention;

[0010] FIG. 2A is a functional block diagram of a distributed device of the system shown in FIG. 1, according to an exemplary embodiment of the present invention;

[0011] FIG. 2B is a functional block diagram of a controller of the system shown in FIG. 1, according to an exemplary embodiment of the present invention; and

[0012] FIG. 3 is a flowchart diagram of an exemplary method for processing information from a plurality of distributed devices, according to an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

1 System Overview

[0013] Personal wireless devices, as well as other types of computing or communication devices, have become ubiquitous in our environment. Generally, such devices have a number of sensors, which may include, for instance, microphones, cameras, accelerometers, and in some cases may even have sensors for biometric information, such as heart rate. Such devices also generally include one or more communication systems, for example, a cellular telephone radio system (e.g., Code Division Multiple access (CDMA) or Global System for Mobile Communications (GSM)), a wireless local area network system (e.g., Wi-Fi, IEEE 802.11), wired computer network connections (e.g., data network connections via USB cradles, possibly via desktop computer applications) and in some cases other systems based on radio frequency (e.g., Bluetooth.RTM.) or optical (e.g., infra-red) transmission. Finally, such devices generally are "location aware" and/or locatable by the infrastructure in which they operate. For example, such devices may have global positioning system (GPS) receivers, enhanced GPS (which operates in conjunction with cellular telephone infrastructure), and/or Wi-Fi based maps (which use a map of Wi-Fi access points to locate the device). The cellular infrastructure may, for example, be able to locate the device based on cellular signal strength and/or triangulation approaches.

[0014] In some aspects of the present invention, the combination of characteristics of these devices provides a potentially rich source of information that may be combined in a way that generates valuable information that is not necessarily available to any individual device. As an illustrative example, audio processed locally at many different devices may be combined to identify geographic or social group trends based on keywords spoken or other acoustic events (e.g., coughs) that are detected at the devices.

[0015] Detection of coughs is an example where detection of non-speech acoustic events may be useful. Because a cough is often a sudden and often repetitively occurring reflex, frequent coughing may indicate the presence of a disease (e.g., many viruses and bacteria benefit evolutionarily by causing the host to cough, which helps to spread the disease to new hosts). Most of the time, coughing is caused by a respiratory tract infection but can be triggered by choking, smoking, air pollution, asthma, gastro-esophageal reflux disease, post-nasal drip,

chronic bronchitis, lung tumors, heart failure and medications such as ACE inhibitors. Detection of such events in the vicinity of the devices may provide significant information.

[0016] In other aspects of the present invention, the rich sensor capabilities of the devices may provide a way to track activity of a user (e.g., owner) of the device, to enhance the user's experience with various computing applications (such as searching or personalization). As an illustrative example, topics of conversation in the vicinity of the device may affect the ranking of search results or the ordering of presentation of news stories on the device.

[0017] In some aspects of the present invention, the rich source of information over many devices and the tracking of individual activity may be combined, to benefit from their synergy.

[0018] Referring to FIG. 1, a functional block diagram of an exemplary information processing system, designated generally as system 100, is shown. System 100 may include one or more distributed devices 120 (also referred to herein as devices 120) and device 120' (also referred to as controller 120') in an environment. One or more of devices 120 and device 120' may be configured to acquire information relating to audio scene 130. Device 120' may be the same as device 120, except that device 120' may be configured to act as a controller for selectively acquiring sensor information from among devices 120 and for determining a characteristic of audio scene 130. Although one device 120' is illustrated as being a controller, it is understood that multiple devices 120' may act as controllers.

[0019] Although device 120' is illustrated as a controller for gathering sensor information and determining a characteristic of audio scene 130, it is understood that communication system 150 and/or server 140 may also be configured to act as a controller. Communication system 150 or server 140 may collect at least one of sensor information from devices 120, 120', local data analysis information from devices 120, 120' or scene analysis information from device 120'.

[0020] Devices 120 and device 120' may be capable of direct communication with each other,

via communication link 154. Devices 120 and device 120' may also be capable of communication with communication system 150, via communication link 152. Devices 120 and device 120' may also be in communication with central server 140, via communication system 150 and communication link 152. Devices 120, 120' may include wired or wireless devices. As discussed further below, devices 120, 120' may be at fixed positions or may be mobile devices.

[0021] In one exemplary embodiment, a number of devices 120 are present in an environment. In some examples, the devices 120 (and device 120') are cellular telephones (e.g., "smartphones"). The environment represented by audio scene 130 may be an urban environment, for example, with the devices 120, 120' being present on city streets, in office buildings, or in homes of the users. Generally, the devices 120, 120' may be personal to the users/owners (of the devices), and may be mobile devices, carried with the user throughout the day.

[0022] In FIG. 1, a small number of representative devices 120, 120' are illustrated. As discussed further below, the potentially enabled devices 120, 120' may be part of a large population of devices (e.g., a large fraction of the telephones in a metropolitan area) and system 100 may adaptively enable particular subsets of the devices 120 and/or selectively configure enabled devices 120. For instance, device 120' (or server 140) may enable and/or configure the devices 120 according to triggering events detected at one or more devices 120, 120'.

[0023] It should be understood that the description below focuses on smartphones as an example, and other types of fixed or mobile devices may be used in conjunction with or instead of smartphones. Also, the description below focuses on aggregation or combination of audio information as an example, but aggregation and processing of other forms of information, including video and biometric information may be performed in conjunction with or instead of the audio data examples described below.

[0024] As introduced above, any particular device 120, 120' is able to sense some aspect of an

overall audio "scene" in its environment. Such a scene may include, for example, the device owner's own speech even when not carrying out a telephone call, other sounds made by the owner (such as coughing), the speech of others in proximity to the user and environmental sounds in proximity to the user (such as sirens, gunshots, etc.).

[0025] Generally, system 100 makes use of the audio acquisition capabilities of one or more of the devices 120, 120' in order to extract information related to the views of the audio scene 130 by the one or more devices 120, 120'. In one exemplary approach to acquisition of the raw content, every device 120 could continually transmit its acquired signals over communication system 150 to a central server 140 (via communication link 152). For example, the communication system 150 may comprise a cellular telephone system and/or a wireless data network. However, such continual transmission may not be feasible due to the sheer volume given the large number of devices 120, 120' that are fielded, and may raise other issues regarding privacy of those in the environments of the devices 120, 120'.

[0026] Another exemplary approach to extracting information is for each device 120, 120' to perform a local signal analysis based on the signals acquired by that device. However, such an approach may have limitations due to the computational limitations of the devices 120, 120'. Also, a purely local processing may lose advantages that could be gained by fusing of information from multiple devices 120, 120'.

[0027] An exemplary approach describe below addresses some of the limitations of a purely local or a purely centralized approach using a combination of one or more of the following features: [0028] 1) Local processing of acquired signals (on devices 120), at least to identify occurrences of events that may be of interest; [0029] 2) Local buffering of audio for selective transmission to device 120' or central server 140, for example, on an ongoing basis or based on a request from device 120' or server 140, or based on local identification of a local event (at one or more of devices 120); and [0030] 3) Selective enabling of acquisition and/or processing (or specification of the type of processing) at particular devices 120, 120', for example, based on

their geographic location and/or other proximity metrics (e.g., a social network rather than a geographic distance metric).

[0031] Note that the locations of the devices 120, 120' (e.g., three-dimensional coordinates) are generally known by the devices 120, 120' and/or central server 140. As an example, a positioning system 180 makes use of units having known locations, such as GPS satellites 182, fixed cellular transmission towers, Wi-Fi access points, etc. to maintain an estimate of the positions of the devices.

[0032] Referring to FIG. 2A, a functional block diagram of exemplary device 120 is shown. Device 120 may include one or more of sensor module 202, local data analysis module 204, communication module 206, controller 208, media/state storage 210, position module 212, user interface 214, display 216, warning indicator 218, speaker 220 and privacy module 236.

[0033] A typical device 120 includes communication module 206, which provides a communication link 152 through the communication system 150 to sever 140 and/or a communication link 154 to other devices 120, 120'. Communication module 206 may also serve a role in acquiring positioning signals (e.g., GPS signals, Wi-Fi signal strengths, etc.), and may also provide a way to communicate directly with other devices 120.

[0034] Device 120 may include sensor module 202 for the acquisition of sensor information. Sensor module 202 may include one or more microphones 222 for collecting acoustic information regarding audio scene 130 (FIG. 1). Sensor module 202 may also include one or more environmental sensors (such as a temperature sensor, a motion sensor such as an accelerometer) for collecting environmental information associated with device 120. Sensor module 202 may also include one or more biometric sensors 226 (such as heart rate) for sensing biometric information regarding a user of device 120. Sensor module 202 may also include camera 228 (i.e., an image sensor) for capturing still images and/or video of the surrounding environment of device 120. Sensor module 202 may also include a compass for providing

location information. In general, sensor module 202 may include any sensor capable of measuring a physical quantity and converting it into a signal that may be used by system 100. For example, sensors in sensor module 202 may also include, without limitation, one or more of light detection sensors, proximity sensors, gravity detection sensors, a magnetic field detection sensors, electrical field detection sensors, vibration sensors, pressure sensors, humidity sensors, moisture sensors, toxin detection sensors, nutrient detection sensors or pheromone detection sensors.

[0035] User interface 214 may include any suitable user interface capable of providing parameters for one or more of sensor module 202, local data analysis module 204, communication module 206, media/state storage 210, position module 212, display 216, warning indicator 218, speaker 220 and privacy module 236. User interface 214 may include, for example, a pointing device, a keyboard and/or a display device.

[0036] Device 120 may include display 216, warning indicator 218 and/or speaker 220 for presenting information to a user of device 120. Display 216 may include any suitable display device capable of presenting information on device 120. Warning indicator 218 may include any suitable visual indicator for presenting a warning on device 120. The warning may include, for example, an indication that audio information is being recorded. It is understood that speaker 220 may also audibly present a warning indication. Although user interface 214 and display 216 are illustrated as separate devices, it is understood that the functions of user interface 214 and display 216 may be combined into one device. According to an exemplary embodiment, device 120 may receive acoustic and/or other information (via display 216, warning indicator 218 and/or speaker 220) that has been mitigated, amplified and/or passed to device 120 from device 120' (FIG. 1) based on information acquired from one or more devices 120.

[0037] Device 120 may include position module 212, to maintain a position estimate for device 120. For example, position module 212 may use positioning system 180 (FIG. 1) to obtain the position estimate.

[0038] Media/state storage 210 may store at least one of raw sensor information (from sensor module 202), locally analyzed information (from local data analysis module 204) or location information (from position module 212). Media/state storage 210 may include, for example, a magnetic disk, an optical disk, flash memory or a hard drive.

[0039] Controller 208 may be coupled, for example, via a data and control bus (not shown) to one or more of sensor module 202, local data analysis module 204, communication module 206, media/state storage 210, position module 212, user interface 214, display 216, warning indicator 218, speaker 220 and privacy module 236. Controller 208 may be configured to control acquisition of sensor information, local analysis of sensor information, transmission and/or receipt of sensor information, transmission and/or receipt of local analysis information, as well as any presentation of information by device 120 (such as via display 216, warning indicator 218 and/or speaker 220). Controller 208 may include, for example, a logic circuit, a digital signal processor or a microprocessor. It is understood that one or more functions of local data analysis module 204 may be performed by controller 208.

[0040] Local data analysis module 204 may be configured to analyze information collected locally by sensor module 202 for device 120. Local data analysis module 204 may include acoustic analysis module 230 for analyzing audio information (such as from one or more microphones 222). The audio information may include speech, music as well as environmental sounds (such as an approaching train). The speech may be generated by a user of device 120, as well as by other individuals proximate to device 120. Local data analysis module 204 may perform the analysis either locally or with the aid of backend server architecture or similar mechanisms.

[0041] Local data analysis module 204 may also include other sensor analysis module 232 for analyzing information from other sensors of sensor module 202. For example, other sensor analysis module 232 may analyze information from one or more of environmental sensor(s) 224, biometric sensor(s) 226 and/or camera 228. Local data analysis module 204 may combine

results from acoustic analysis module 230 (such as keywords, target sounds) and other sensor analysis module 232 to determine the occurrence of one or more particular events (and/or a characteristic of audio scene 130).

[0042] Acoustic analysis module 230 and/or other sensor module 232 may also pre-process the respective sensor information, for example, to substantially remove or reduce noise. Modules 230, 232 may also filter the noise-reduced sensor information to identify high value signals which may be indicative of the occurrence of particular events.

[0043] Local data analysis module 230 may include classifiers 234 associated with acoustic analysis module and/or other sensor analysis module. Classifiers 234 may be used to build profiles of audio information, environmental information, biometric information and/or image information.

[0044] In an exemplary embodiment, acoustic analysis module 230 may preprocess the audio information to recognize speech, perform keyword spotting on speech information, and in addition build voice models of various speakers within the auditory range of the device. The models may, for example, use classifiers 234 and machine learning methods to identify gender, probable age range, nationality and other demographic features from the speech signals.

[0045] In addition, there may be classifiers 234, for instance, to recognize any slurring due to the influence of alcohol or similar substances, accent classifiers to detect and identify accent patterns belonging to specific language groups, and emotion classifiers to classify speakers and speech into happy, sad, stressed, angry or other emotional states. Thus, given any audio input that includes any speech, individual devices 120 or system 100 (FIG. 1) as a whole may be able to build an acoustic profile of each speech participant in that input, where the profile not only includes the keywords spotted, but also other data such as demographic data about each speaker including gender, probable age, possible nationality etc., as well as classifier results about emotional state, and/or whether the speaker is under the influence.

[0046] The acquisition of keywords with demographic data may help advertisers target their sales, based on factors such as gender, age and potential levels of disposable income, and to track their sale cycle from users noticing their advertisements to those users who actually make a purchase. Emotion indicators may be used to take palliative or preventative steps to avoid customer dissatisfaction. Other information like slurring may be used as corroboratory information in situations such as accidents or may be used to prevent accidents.

[0047] Privacy module 236 may include mechanisms to implement privacy and/or security requirements and policies for applications relating to the acquisition and use of information of various kinds, including audio information, by one or more devices associated with a number of carriers. These policies and mechanisms may control the use of devices 120 (and device 120' (FIG. 1)) including the ability to remotely switch on and switch off sensing (e.g., listening), the ownership of any audio information garnered by these devices 120 (and device 120' (FIG. 1)), the users' ability to easily control sensing and information acquisition, mechanisms to opt-in and opt-out of applications, carrier-wide or network-wide data gathering, the protection of any audio personally identifiable information (PII) that is gathered, and any aggregated data that is created from a number of devices 120 (device 120' (FIG. 1) and networks. Policies or standard practices may also be established for private or semi-private situations where not all users present have opted-in for data acquisition. For example, when system 100 (FIG. 1) records speech from users that are not likely to be opted-in to the information acquisition, system 100 may provide a warning indication to all devices 120 in the immediate vicinity to indicate that audio information is being recorded. The warning indication may be provided on warning indicator 218.

[0048] Referring next to FIG. 2B, a functional block diagram of exemplary device 120' is shown. Device 120' is similar to device 120 (FIG. 2A), except that device 120' may also include device selection/data acquisition module 240 and scene analysis module 242. Similarly to device 120 (FIG. 2A), components of device 120' may be coupled together via a data and control bus (not shown).

[0049] Device selection/data acquisition module 240 (also referred to herein as module 240) may receive sensor information and/or locally analyzed information from selected devices 120 (FIG. 1). Scene analysis module 242 may combine the sensor information and/or locally analyzed information from among the selected devices, in order to determine at least one characteristic of audio scene 130 (or the environment, in general).

[0050] Module 240 may determine the locations of at least some of devices 120 (FIG. 1). Module 240 may select one or more devices 120 (FIG. 1) from among plural devices 120, for example, based on the location of these devices 120 as well as any characteristics (such as an event) determined by scene analysis module 242. Accordingly, as a characteristic is detected (by scene analysis module 242), module 240 may adaptively acquire information from selected devices 120 (FIG. 1), in order to better analyze audio scene 130. Module 240 may also configure selected devices 120 (FIG. 1) to acquire specific information, (for example one device 120 may acquire image data via camera 228 (FIG. 2A) whereas another sensor may be configured to acquire audio data via microphone 222 (FIG. 2A). As another example, module 240 may configure multiple devices 120 to acquire audio data via respective microphones 222 (FIG. 2A), so that the multiple microphones 222 form a beam forming array.

[0051] Referring generally to FIGS. 1, 2A and 2B, system 100 makes use of one or more of enabling and configuring of devices (via device selection/data acquisition module 240) for prospective monitoring, access to logged data for retrospective analysis, and real-time notification of events (such as by scene analysis module 242). This adaptation of system 100 may be based on detection of triggering events at the devices 120, 120'. For example, device 120' may enable detection of certain acoustic events (e.g., words, spoken topics, music, and environmental sounds) and may adapt the configurations on selected devices 120 based on reports from other devices 120.

[0052] Device 120' (and devices 120) may include software for coordinating the set of devices

120. The software may have centralized control, peer-to-peer control or a hybrid model involving centralized, peer-to-peer and other control mechanisms. Individual devices 120, 120' may switch between being master devices controlling other devices, or slave devices under the temporary partial control of other devices. The network of devices 120, 120' may so configure itself to optimize power consumption on individual devices 120 by distributing the sensing load across a number of devices 120, 120', or by other mechanisms such as sharing bandwidth across devices 120, 120'. The networking used may be based on ideas related to mobile ad hoc networks (MANET), Scatternet or other mechanisms.

[0053] For example, system 100 may dynamically organize and reorganize its nodes into hierarchies or graphs, with some devices 120, 120' chosen to be master nodes while other possibly geographically proximate devices to be slave nodes. Slave nodes may perform actions based on instructions from master nodes. They may preprocess information and convey processed information to master nodes, instead of conveying all information acquired, thus distributing computation among nodes and reducing the communication bandwidth. In addition, communication requirements may improve because only a few master nodes may communicate with each other, instead of all, say N devices trying to communicate with each other, which would require $(N \cdot \sup{2/2})$ connections.

[0054] Because each node knows its location, depending on system requirements, the network may organize itself into one or more linear chains or local groups, where information is passed between physically proximate devices, very much like a bucket brigade conveying information. With a peer-to-peer architecture, individual devices 120, 120'--either just master nodes or both master nodes and slave nodes--may record information about neighboring nodes and their capabilities and features, so that, for instance, connectivity between any pair of nodes can easily and effectively be established at low computational cost.

[0055] Other optimization techniques may also be adopted--for instance, when data logs are recorded, the system may determine if several devices are in the same audio or other sensor

context. For example, if several phones 120, 120' are located in the same context, not every phone 120, 120' has to record all data--the system 100 may designate a scribe node which acts as a local repository for data and for ensuring the data gets stored to some centralized server 140 (or device 120') in the cloud. This may save considerable logging effort on the part of the other nodes.

[0056] Alternatively or in addition, the system 100 may distribute sensor load among devices 120, 120' so that not every node has to acquire information via all of its sensors in sensor module 202. Some sensor modules 202 may concentrate on acquiring audio information, while other devices 120, 120' may acquire position information and still other sensor modules 202 may acquire temperature or altitude information, and so on. This may reduce power and communication bandwidth requirements for the entire system 100. Several such schemes may be devised to optimize the throughput and efficiency of the system as a whole. According to an exemplary embodiment, system 100 may also distribute processing of sensor information among devices 120, 120', so that different individual tasks are performed by devices 120, 120'. This may reduce the computational burden on some devices 120 (or device 120') which may not have suitable processing capabilities for a specific task.

[0057] The system 100 as a whole may use carrier-agnostic handlers in the cloud. Specifically, the networking may utilize services from a number of wireless telephony, Wi-Fi or other carriers, and suitable policies may be put in place to enable carrier-agnostic behaviors. Specifically, so that no user may be denied sharing of information because of association with specific carriers, and so that digital bridges exist to share information across carriers where desired. In a variant, some features may be made unique to a carrier for marketing reasons.

[0058] It is understood that devices 120, 120' do not have to be phones. Devices 120, 120' may be stand-alone devices, or may be an integral part of a GPS, hearing aid, mobile phone, TV remote, car key fob, portable game controller or similar device. Device 120 (and/or device 120') may be carried by the user on his person, or be installed in or on a vehicle such as a car.

[0059] For certain applications, devices 120 (and/or device 120') may be fixed and installed at home, or be part of fixed telephones, desktop computers, TV sets or game consoles. Each device 120 (and/or device 120') may include one or more sensors with associated software. Different kinds of devices 120, 120' may include different sensors and/or different software. If device 120 or device 120' is more like a smartphone, system 100 may have access to textual data including electronic mail, chat transcripts and documents, and audio data including phone conversations, music on the device or streamed to the device, ambient audio picked up by microphones, and user search logs. All of this data may be relevant to the user. This data, along with the user's context and environmental variables, may be used for personalization of information consumed by the user and then where appropriate repurposed for commercial applications to the user or the community at large.

[0060] Referring to FIG. 3, a flowchart diagram of an exemplary method for processing information from a plurality of distributed devices is shown. The steps illustrated in FIG. 3 represent an example embodiment of the present invention. It is understood that certain steps may be performed in an order different from what is shown. It is also understood that certain steps may be eliminated.

[0061] At step 300, the location of devices 120 (FIG. 1) may be determined, for example, by controller 120' based on information previously received from devices 120. For example, controller 120' (FIG. 1) may directly communicate with devices 120 to determine their locations. As another example, the location of devices 120 (FIG. 1) may be known from communication with communication system 150 and/or sever 140.

[0062] At step 302, a subset of devices 120 (FIG. 1) may be selected, for example by device selection/data acquisition module 240 (FIG. 2B) of controller 120'. For example, controller 120' (FIG. 1) may select one or more devices 120 based on a predetermined characteristic of the environment and the location of devices 120.

[0063] At step 304, sensor information and/or locally processed information may be received by controller 120' (FIG. 1) from the selected subset, for example, by device selection/data acquisition module 240 (FIG. 2B). For example, controller 120' (FIG. 1) may receive raw sensor information from respective sensor modules 202 (FIG. 2A) and/or locally processed information from respective local data analysis modules 204 (FIG. 2A). Controller 120' (FIG. 2B) may also acquire sensor information and/or locally processed information from its own sensor module 202 and local data analysis module 204. The information from at least one of the devices 120 may be received responsive to a confirmation indication from the respective device 120, to indicate an allowance by device 120 to release its respective information to the controller. For example, the confirmation indication may be provided manually by a user of the respective device 120, or may be provided automatically by the respective device 120, based on the privacy settings of the device 120.

[0064] At step 306, information received from the subset (as well as, optionally, from controller 120' (FIG. 1)) is combined to determine a characteristic of the environment, for example, by scene analysis module 242 (FIG. 2B) of controller 120'.

[0065] At step 308, it is determined whether the subset should be adjusted, for example, by device selection/data acquisition module 240 (FIG. 2B) of controller 120'. For example, the subset may be adjusted based on an event detected by a local data analysis module 204 (FIG. 2A) of one or more devices 120, the characteristic of the environment, any context from the characteristic, the location of devices 120 (FIG. 1) (e.g., position, orientation in space), demographics from the characteristic, any social-graph membership among devices 120, etc. For example, if one device 120 (FIG. 1) detects a gunshot, device 120' may expand the subset of devices 120 to additional devices (to triangulate the location of the gunshot) and/or to send a warning indication to all devices 120 in range.

[0066] If it is determined, at step 308, that the subset should be adjusted, step 308 proceeds to

step 310. At step 310, selection of the devices in the subset may be adjusted and/or a configuration of selected devices of the subset may be adjusted, for example, by device selection/data acquisition module 240 (FIG. 2B). For example, different devices 120 (FIG. 1) may be switched on or off. As another example, different sensors of sensor modules 202 (FIG. 2A) may be configured to acquire sensor information.

[0067] If it is determined, at step 308, that the subset should not be adjusted, step 308 may proceed to step 304, to continually determine a characteristic of the environment.

[0068] Alternately, step 308 may proceed to step 312 (environmental monitoring), step 314 (localization and tracking), step 316 (topic monitoring), step 318 (triggering events) and/or step 320 (other monitoring and regulation). The characteristic of the environment may be used for a number of different applications, which are described further below.

[0069] Referring generally to FIG. 1, in an exemplary embodiment, a platform may be developed to enable users to develop applications that: harness a set of these devices 120; acquire signals from devices 120; switch subsets of devices 120 on or off (based on information about context, including position, orientation in space, social-graph membership, and demographics); process and analyze information obtained from sensors of devices 120; set triggers to enable or disable sensing, processing or analysis; and adapt system 100 to sensed, processed or analyzed information. The platform may allow individual devices 120, 120' to be customized and personalized to users (consumers) to mitigate, amplify or pass-through acoustic and other information to users based on acoustic and other information acquired from one or more devices.

[0070] Once such a platform is developed, applications may be developed for many of the scenarios and use-cases described herein. The platform may specify minimum hardware requirements, such as minimal sensor numbers and configuration, minimal onboard computing resources in terms of hardware and software, and an application programming interface (API)

to allow developers to access all the features and resources available on the device.

[0071] An example platform specification may include: one or more microphones or a microphone array; one or more accelerometers typically to cover two or three axes of motion or orientation; a compass; an on-board GPS system; zero or more other sensors such as contact or non-contact temperature sensors; cameras with a minimal required resolution, with Bluetooth.RTM., Wi-Fi and other capabilities; software including classifiers to analyze speech, to analyze media including music, video, and still images; software to acquire environmental metrics and analyze them in various contexts such as urban vs. suburban, and residential vs. industrial; software to preprocess signals acquired to remove or reduce noise, filter the remaining signals to identify high value signals and to transmit them to a server 140 in a compressed form if desired; a database of sound signatures; and software to handle reactive mechanical tasks in response to sensor data--all with enough power to provide a realistic and acceptable user experience.

2 Example Use Cases

[0072] In this section, a number of example use cases are provided to illustrate how an exemplary system 100 (FIG. 1), described above, may be used in practice.

2.1 Environmental Monitoring

[0073] A number of uses relate to monitoring an environment of a set of smartphones. In a public health monitoring example, the on-board audio processor may be configured detect occurrences of coughs, typically by the owner of the device or by other people in the proximity of the device. Such detection may use, for example, statistical spotting techniques (e.g., Hidden Markov Model (HMM) techniques, Gaussian Mixture Model (GMM) techniques) trained on a corpus of recordings of coughs know as a Universal Background Model. Communication of locally aggregated results, for example, a number of coughs per hour, may be uploaded to the

central server 140 or device 120' on a schedule, or when the rate deviates from an expected or maximum value. In this way, the controller 120' (or server 140) may be able to identify local "hot spots" of coughing.

[0074] Other educational and public health uses may be possible with epidemiological applications of such systems. For example, pertussis (whooping cough) is a highly contagious disease and one of the leading causes of deaths world-wide that is preventable with the use of vaccines. Exemplary system 100 may be used to provide information to parents of children with coughs or with other symptoms such as asthmatic symptoms to help them decide when to seek medical help, and to provide epidemiological data about pertussis, asthma and related illnesses.

[0075] In some scenarios of such monitoring, only a limited subset of devices may be initially configured to perform the local processing needed to detect the coughs. However, when controller 120' determines that there is a possible hot spot of activity, controller 120' may enable further devices in the geographic proximity of the hot spot to gain further information about the extent of the situation. In some examples, the controller 120' may enable further devices based on a social proximity, for example, to account for the possible transmission of an illness to others that are close in a social sense. In addition to enabling further devices, the controller 120' may disable devices and control the overall monitoring set for the task.

[0076] In a variant, the system 100 may use sensed information to alert patients to asthmatic attacks in children, along with information on the child's environment at the onset of the attack, to enable them to ensure that prompt remedial or palliative action is taken.

[0077] In yet another variant, the system may be used to alert patients of breathing disorders such as sleep apnea. Sleep apnea is a disorder that is characterized by abnormal low breathing or abnormal pauses in breathing during sleep, often accompanied by snoring. Often the snorer is not aware that they snore or that they could have a life threatening medical issue, and they

suffer from fatigue, daytime sleepiness and other symptoms, often for years and years. Diagnosis often requires an overnight sleep study in a special lab set up with sensors. Knowledge about snoring and having a record of snoring behavior can help in the diagnosis and remediation of this condition. System 100 may be trained to recognize snoring, and to distinguish it from other kinds of similar noises, and help in detecting and recording snoring behavior to help people with breathing disorders identify their problems and seek appropriate help.

[0078] In another monitoring use case, the devices 120 may be used to monitor environmental sound levels (e.g., sound pressure level), for example, for workers in a factory workplace. Devices 120 of workers monitor the noise level and maintain a record, for example, cumulative durations of various ranges of noise level. This locally-determined information may be provided on regular or locally triggered basis, for example, if the noise level exceeds certain prescribed limits (e.g., an absolute limit, a limit for accumulated time above a prescribed sound pressure level, etc.). The controller 120' (or server 140) may query further devices 120 to determine the location of high noise levels, for example, based on locally logged detailed information that correlate noise level and location within the workplace. Also, other characteristics of environmental sound, for instance, related to the source of the sound may be detected. For example, a machine type (e.g., whistle, engine, press, saw, drill etc.) may be discriminated, for instance using pattern matching techniques (e.g., HMM, GMM techniques).

[0079] A similar sound-level monitoring may be used to track environmental sounds levels, for example, in particular restaurants, on particular streets, etc. and such monitoring may also identify time-of-day variation of such levels. Ornithologists may be interested in the ability to monitor the presence or absence of bird songs over time and space. Others might be interested in using sound arrays to monitor insect infestations. Exemplary system 100 may make it possible to compare treatment areas with controls to measure the effectiveness of proposed countermeasures. In some examples, if the device 120 is not connected to the communication system 150, information is logged, time stamped and stored in a non-volatile memory and then uploaded when the device 120 is once again connected or its memory is interrogated. This may

be typical after an automobile accident or other fatal or non-fatal incidents.

[0080] If a large number of cars on the same highway suddenly decelerate at the same time, then the network could decide to issue a warning to cars a few miles behind the obstacle. In addition, the ability to measure traffic flow using an array of smartphones (equipped with communication networks and sensors such as accelerometers and microphones and GPS/location sensors) has the potential to improve traffic routing in the short term, and traffic planning in the long term. Many of the applications envisioned in the present invention may have both short-term and long-term benefits. Short-term benefits use networks with low latency (such as the radio stack), whereas long-term applications can make use of networks with longer latency (such as uploading information at the end of the day when the device is docked in a networked cradle).

[0081] In another monitoring use, phones may be enabled to "name that tune" in the environment, and both provide the owner to download that song to their device library and upload the location of the playing to the central controller, which monitors the aggregated presence of different songs. Consider a music festival with several stages, where different groups are playing. As the user walks around these stages, a network of systems may be continuously acquiring audio data, detecting and isolating, for instance, music, identifying the music and showing users the name of the piece being played, the album, the artistes playing etc. The system may provide a mechanism for users to purchase the music if it is of interest to them. There are stand-alone programs to identify music being played, but they require a single device to collect a good sample of music, send it to a server and then possibly identify the music. In contrast, by having a network of devices 120 collect data, data acquisition is more robust and distributed, and users are able to get their music identified faster.

[0082] Detection of particular music being played in the environment of devices may be aggregated to determine marketing related information. By monitoring what people hear as they go about their lives, the system may acquire considerable information about the media

segment. The information captured on music played, the artiste/group being played, the volume of music purchased etc. is very valuable, especially when pivoted on various dimensions. In addition, in stores where music is sold, features such as the audio background and lingering behavior may also be valuable.

[0083] These devices may also be used to share information about what users listen to or see, or to find out what their friends are seeing or listening to. Currently users have to take the effort to tweet or post their music-playing or video-watching behavior. However, a few days of this can get tedious, and soon users may no longer post information on their listening or viewing habits. Exemplary devices 120 may automatically identify songs or TV programs, inform friends in the users' social graph or create virtual communities of users with similar listening or viewing interests.

2.2 Localization and Tracking

[0084] Some use cases take advantage of the multiple locations of the devices 120 to perform localization and/or tracking of audio sources. In one example, aircraft noise data may be obtained by having a "jet detector" implemented in the on-board audio processor of a set of devices 120. Upon detection of a loud jet noise, which is reported to the controller 120' (or server 140), other devices 120 in the proximity of the reporting device(s) 120 are enabled. Buffered time stamped audio and device location data is uploaded to the controller 120' (or server 140), where a triangulation approach may be used to determine a track of the detected audio source. Based on the track, further devices 120 may be enabled along the project track so that the audio source may continue to be tracked. If the source is lost (i.e., doesn't follow a predicted tract), more devices 120 over a larger area may be enabled to re-acquire the location of the audio source. In this way, an overall assessment of the audio tracks of loud aircraft may be determined based on the aggregated acquired audio data.

[0085] The selected set of devices 120 effectively acts as a configurable microphone mesh for

acquiring audio data. In other examples, the devices 120 can act as a configurable accelerometer mesh for acquiring spatially and/or temporally distributed motion-related data.

[0086] Similar tracking information may be used, for example, to track sirens in a city. Such tracking may be used, for example, to predict traffic flow in a city that may be affected by an emergency.

[0087] Another type of localization may be used in near real-time or in an after-the-fact forensic mode. For example, the devices 120 may be carried by police officers or bystanders near the scene of a shooting. After detection of a gunshot event by one or more of the devices 120 (e.g., the officers' devices), the controller 120' (or server 140) may upload locally buffered audio from the officers' devices 120 or other devices 120 in the environment, and perform a localization of the source of the shooter's location. In a near real-time example, this information may be provided to the police officers to aid in their police duties. A similar type of arrangement may be used in a military situation in which audio is buffered at devices 120 carried by multiple soldiers, and the combined information may be used to estimate the direction of a sniper location.

[0088] Note that a central server 140 is not necessarily required. For example, devices 120 may locally exchange information to perform aggregated analysis, such as localization. In one such example, each device 120 may include a detector for an event of interest (e.g., gunshot), and upon detection of the event may pass the raw audio or a partially processed version of the audio (e.g., an intensity time profile) to nearby devices 120 (e.g., using ad hoc wireless communication), which perform local assessments of shooter direction based on the information they obtain.

[0089] In yet another scenario, these devices 120 may be used for adaptive crowd control. In situations with high traffic, whether vehicular or pedestrian traffic, these devices 120 may be configured as a mobile ad hoc network to estimate traffic flow from noise, with no requirement

for any fixed or embedded sensors. Using the dynamically acquired traffic pattern information, the system 100 may broadcast instructions through the devices 120 or through other means to direct people through paths of lower traffic density, open up different gates or paths, or use sonification or acoustic visualization to alert users to high traffic versus low traffic paths.

[0090] A related idea is to create mobile sound-based security systems where the system 100 is able to quickly learn about ambient conditions and sound trends, and use this to signal situations away from normal conditions.

[0091] In another use case, these devices 120 may use sentiment detection and emotion detection to identify centroids of trouble in large crowds. A variant of this system 100 can be used to detect user dissatisfaction in their language, or in non-speech audio to alert management to, for example, open more counters in stores.

[0092] When users try to meet up with friends in large auditoria or sports stadia, it is often impossible to use mobile phones or to hear conversations on phones. The system 100 may use knowledge of users' social graphs to indicate the presence of friends using directional sonic visualization or sonification, with some variation in tone or volume as users approach their friends. Using the peer to peer architecture of the system 100 along with the knowledge in each device 120 about its neighboring devices 120 and their features, the system 100 can quickly and effectively determine the possible locations of friends. By utilizing the position information, and the orientation information acquired from the user's device 120, the system 100 can provide differential tones, volumes or other signals to indicate whether the user is moving towards or away from their friends (and whether they are pointed towards or away from their friends), and provide an indication about how far away they are. The precision of this indication may go up with the number of peer devices 120 contributing information to the system 100.

[0093] In another localization use case, a number of devices 120 may be enabled to sense audio, for example, for a group conference call. The locally acquired audio may be used to

identify the location of the speaker, and to control which device 120 (or devices 120) are used to generate the audio for the call. For example, a device 120 closest to the person speaking, or the device 120 providing the highest signal quality or intelligibility, may be selected, thereby providing an improved audio quality.

[0094] In another localization use case, devices 120 may be tracked during a shopping trip, for example, in a grocery store or at a mall. The track taken by the user with corresponding audio or video information may be used to identify areas of customer focus and interest, and provide user-specific information, for example, promotional information related to purchase opportunities in the vicinity of the device 120.

[0095] After-the-fact analysis of a track may be used to correlate movement with actual purchases made, or to possible interest in various classes of items. For example, a relatively high time spent in the vicinity of a product type may indicate an interest in that product type. Users may be interested in opting in to having their path tracked in exchange for receiving promotions.

2.3 Topic Monitoring

[0096] In another use example, a device 120 may be enabled to monitor the owner's environment as they converse during the day, and as they listen to media broadcasts. Topic detection techniques, for instance, based on spotting topic-related keywords, may be used to assess topics of interest to the user. During the day, or in a periodic summary, the user is presented with collateral information related to the topics. For instance, if the user enters into a conversation about a particular topic, recent news or background material may be offered on the device 120. Such topic monitoring may also be useful to provide other targeted material to the user, for example, in the form of advertising that is relevant to the user's interests.

[0097] The configuration of other devices 120 may be adapted based on what is detected at the

user's device 120. For example, other devices 120 in geographic or social proximity to the user's device 120 may be configured to detect the presence of similar topics. In this way, the other devices 120 may have a higher likelihood of correctly detecting the topics. Furthermore, the controller 120' or server 140 may be able to track the extent of interest in a topic.

[0098] Another topic-related monitoring use may be related to a third party requesting detection of audio signals, such as audio components of advertising to determine where these advertisements have been played. For example, an advertiser may have controller 120' or server 140 configure devices 120 to detect an advertisement, and then determine where the advertisement has been played and potentially heard.

[0099] In a related use case, the system 100 may use information garnered from the sensors of devices 120 and from other sources such as electronic program guides (EPG) to identify what programs users have been listening to or viewing, to get Nielsen-like viewership statistics or to acquire business intelligence. Current systems tend to rely on home systems or manually created diaries, both of which are prone to error. Using exemplary devices 120 and exemplary system 100 may allow for this monitoring to be done wherever the user is, and whatever media device they use, and to use information from user activity to distinguish active listening or viewing from, for instance, a TV playing to an empty room.

2.4 Triggering Events

[0100] Generally, use cases described above use various triggering events to begin local logging of audio and/or to initiate communication with the server 140, device 120' and/or other nearby devices 120. In addition to audio-based events (e.g., specific words, spoken topics, music, sounds, etc.), other events may trigger monitoring and/or communication. For instance, content of text communication (e.g., Short Message Service (SMS) messages) may initiate monitoring and/or configure what is to be searched for. Other data, such as accelerometer data, biometric data, and detection of a video image (such as change in luminance, etc.) that is

available to the device may also be used in a trigger. For example, high acceleration may be associated with a vehicle accident or a fall, and this may initiate audio monitoring or communication with the server 140 (or device 120'), which may be able to determine if an accident has occurred based on the audio scene 130, in which case emergency help may be summoned.

[0101] The system 100 may also be used in the care of the elderly and the disabled. Currently senior citizens and the disabled can purchase a conventional device to signal when they need help, for example if they fall or feel dizzy. However, these conventional systems require the user to consciously make a decision and press a button on the device to ask for help. The problem is that there may be situations where the user cannot make the decision, may be too embarrassed to ask for help, may feel their problem is not critical enough to ask for help, or may not even be able to access the button to call for help. For instance when the user has a stroke or if they have a fall, it may be difficult for an elderly user to press the button. The system 100 described here may use data fusion ideas to combine speech and noise detection from one or more devices 120 along with other accelerometer data to detect calls for help, or sounds from falls, dropped objects, etc., distinguish between false alarms and real problems, and summon help when required as well. System 100 may also be able to turn on the speaker phone to have a dialog with the "help" side of the call.

[0102] In another form of triggering event, when a device 120 is removed from the direct acoustic environment, for example, by being put in a user's pocket, the change in audio signal characteristics may trigger a message to the controller 120' or server 140 to indicate that the device 120 is no longer available for acquiring audio based on a poor signal-to-noise ratio (SNR) operating environment. Similarly, when the device 120 is taken out of the pocket, it may again start monitoring the environment and/of notify the controller 120' (or server 140) that it is once again available. In addition, when the device is no longer obtaining adequate SNR, the device 120 may be able to enable other devices 120 within its proximity to acquire the signal and thus improve the overall SNR. In addition, many devices are now manufactured with multiple microphones (primarily used for beam forming) as to obtain an improved SNR for the

user. As the user may often carry the device 120 in their pocket or purse, system 100 may be able to select which microphone in the device 120 is desirably enabled or what beam forming array would be best evoked to obtain a maximum SNR.

[0103] In some examples, vehicle texting is disabled by the system 100. By detecting an acceleration signature consistent with being in a moving vehicle and/or by picking up the type of sounds picked up while driving, the device 120 can detect road noise, the engine noise, wheel bearing noise, breaking noise. All of these sounds may be used to either disable or enable the user from utilizing their device 120 for texting while the car is in motion. The device 120 may query its proximity and determine if other devices 120 were present within the body of the automobile. Assuming the answer were yes, further analysis may be used to provide limitations on the driver's device 120 from texting while still allowing the balance of the individuals to text. Some cars also disable or limit select navigational controls for safety reasons when the car is in motion. If the device 120 is able to detect a front seat passenger, the system may choose not to limit navigational controls.

[0104] In some examples, key word spotting obtained from in-situ conversations is aggregated from both the sender and recipient. During the course of normal telephone conversations, the device 120 may identify specific sounds, words, etc being uttered by both parties of a conversation. The system 100 may interrogate these sounds and provide the user with information either thru a graphical user interface (GUI), or audio based or text based feedback. As an example, assuming a call was about a trip to Paris, the device 120 could render information about promotional pricing on an airline to Paris.

[0105] One or more of these devices 120 may be used to identify trends in audio and other information acquired by these devices 120, for example using keyword spotting in audio streams. Keyword trends may be used to adaptively mediate or modify information consumed by users. In one scenario, information sources such as news media, search engines and similar information outlets may acquire information on trends from individual users or groups of users,

and show different items to different users based on keyword trending. Specifically such a system 100 may choose topics users have been known to prefer.

[0106] Trending on non-speech audio may be used to identify patterns of people flow or vehicular flow. Aggregated logs of speech and non-speech audio may be used for a number of diverse applications, including identifying less noisy apartments or houses to rent or buy and areas of hotels or theater halls that may be better soundproofed. Longer term trending and identification of trends and periodic variations may be used for soundproofing or weatherproofing offices and residences.

2.5 Other Aspects and Uses

[0107] The ability to aggregate information over many smartphones can be provided with or without the cooperation of the carriers. It could be done, for example, with a third party application, which doesn't need the approval of a particular carrier and communicates via Wi-Fi or Bluetooth.RTM.. In this way, information can be aggregated across phones serviced by multiple competing carriers.

[0108] In some exemplary embodiments of the system 100, the system 100 may trigger off key events such as rapid deceleration of several cars at the same time and place, sirens, keywords, etc. The ability to collect vast quantities of data may improve the triggering capability. Search companies are providing better search relevancy than ever before, largely because they are collecting more data than was possible before, the popularity of modern search engines. But with the exemplary system 100, it may become possible to collect even more data. If every phone were collecting audio data for an hour a day, the aggregate data resource would be much larger and much more valuable than the data collections currently collected by even the largest search companies.

[0109] In some exemplary embodiments of the system 100, if a device 120 in the system 100

may detect certain important keywords and phrases like "fire," then the system 100 may respond appropriately. The importance and urgency of a term depends both on the consequences of inaction as well as term weighting concepts that are well known in the field of Information Retrieval.

[0110] Similarly, if a system 100 hears an important term (such as a keyword like "fire" or a non-word like a cough or an event picked up on some other sensor of device 120 such as a rapid deceleration), then the system may turn on numerous other nearby sensors in the array to confirm the event, to improve the signal to noise ratio and/or to localize the event in time and space.

[0111] In some uses, trending analysis may use the large amount of data available through the system 100. Consider the cough example mentioned above. Aggregations of coughs over time and space may provide tracking of health over time and space. The approach is similar some approaches to prediction of the flu based on queries where they showed that they could predict flu a couple of weeks faster than the Centers for Disease Control and Prevention (CDC). But the proposed cough metric should have even better resolution over time and space since it is based on a larger quantity of sensed data.

[0112] Collection of large amounts of sensed data provides a way to systematically predict (e.g., according to a statistical model) sequences or sets of sensed events of other information. Such prediction may effectively be exploited based on principles related to Shannon's Noisy Channel Model, for example, to improve transmission capacity for such events. For example, such data can allow one to create a better "language model" for events, which will do a better job of predicting what sounds to expect to hear (the prior for the noisy channel model) as well as sounds that are anonymous (triggers that should sound alarms and start recording).

[0113] In some examples, workplace monitoring (and monitoring of the environment) may be enabled by the system 100. The system 100 may effectively provide "smartdust" on

smartphones, which is able to monitor workplaces for health issues by measuring acoustical events like coughs. Moreover, in some uses, the system 100 may sense correlates of stress such as noise. Some call centers, for example, have more stress related illnesses because the call volume has relatively large numbers of unhappy customers. It may be possible to predict risk of certain types of illnesses well before symptoms develop, both at work as well as elsewhere.

[0114] An ad hoc network of devices 120 may be used to fine-tune a number of features. Consider concert-hall acoustics, for instance. Concert halls are typically tuned for the major uses of their space. For example, a symphony hall may be tuned especially for a large group of artistes and their instruments, and may not be as well suited to, for example, solo vocalists. Sound quality in a hall is also dependent on the size of the audience, their ambient noise characteristics etc. The network of system 100 may enable data to be acquired from a large number of devices 120 in the audience, so that the hall management can adapt to the ambient noise levels and fine-tune sound levels for any performance, with any number of performers and instruments, and with different audiences.

[0115] The ad hoc network can also be used for monitoring and regulatory purposes. Sound pressure levels or similar measures of rock concerts, gym classes and other potentially noisy environments may be monitored against safe listening levels, and infractions reported to the appropriate management or regulatory agency.

[0116] A similar scheme may be used to fine-tune the temperature in large auditoria, rooms or halls, based on data acquired from a number of devices 120 and individual sensors in that space. Large spaces have their own airflow and heating and cooling patterns, based on placement of air ducts, windows, doors and other openings. Heating and cooling is typically based on measuring temperature in one and occasionally more sensing locations. If the sensor is near a sunny window or a draft caused by a constantly open door, the temperature in that space can be unsatisfactory. By measuring temperature in several locations using a set of devices 120 as described in this invention, it will be possible to have finer, more localized

control of temperature.

[0117] Some exemplary embodiments of the system 100 may make predictions based on a small sample of "opt ins." The system 100 (e.g., "cloud") may be equipped with appropriate logic to determine how to make appropriate inferences based on information gathered from those phones 120 that choose to opt into the system 100. Many of these inferences are relatively straightforward, though care may need to be taken to account for the fact that the sample is not a random sample. The set of people that own a smartphone and choose to participate will be skewed toward certain demographics, at least in the near term.

3 Backup Communication Uses

[0118] In some versions of the system, the mesh-like features of the set of personal devices 120 may be exploited. Cell phones may be viewed as relatively passive (receive only) devices, but there are times, such as during an emergency, where it could be desirable to be able to deploy an active communication network very quickly as an overlay to more traditional telephone and internet networks.

[0119] During an emergency such as a man-made event like 9/11 or a natural disaster such as a major hurricane, it is possible that parts of key communication infrastructures could be down. There was a time when telecommunication networks were much more protected than they are these days. The telephone network used to be more reliable than the power grid. Central offices are typically backed up with batteries and generators (and submarine doors in places like New Orleans that are subject to flooding). Plain old telephone service (POTS) handsets used to be powered from the central office, so the service could stay up even if the standard power grid was down.

[0120] These days, most handsets sold in popular stores depend on the power grid. Most phones have lots of features and a power cord. Some have battery backup, but there is little

incentive to replace the battery. Soon, the battery backup feature may be a thing of the past because many people aren't willing to pay for such features. Engineers like to design bridges for the hundred years' flood, but it is hard to persuade customers to pay for features they probably won't use. Given these realities, it is desirable to develop a way to deploy a backup network just-in-time. Unlike batteries and generators, which are expensive whether we use them or not, a backup network based on phones typically won't cost the public much if any additional capital, because most of the equipment is already in place.

[0121] Key features of a backup network: [0122] 1. Two-way communication: Telephone receivers normally receive but they can also be used to store and forward information. Thus for example, if a phone was on a mobile platform (say in a pocket or in a car), then the phone could be used in sneakernet mode to store a signal in one place and repeat it from another place. [0123] 2. Damage Assessment (the ability to determine quickly and easily what is working and what is not): During 9/11, there were many outages (e.g., fiber cuts under #7 World Trade Center, cell towers on the rooftops, switches under both #1 and #2 World Trade Center, police and fire radio communication in certain places), but some things were working (e.g., cell towers in New Jersey, BlackBerry.TM. email, systems based on satellites). A key requirement is to determine what is working and what is not, and to communicate workarounds to those that need them. An array of cell phones in a multitude of pockets and cars could determine fairly quickly what is working and what is not. Hopefully, some of these devices may be connected to something that is working (such as a satellite) or would eventually move out of the affected area so enough of them could report an accurate and timely damage assessment picture back to the cloud. Using this information, both digital and real world traffic may be adaptively rerouted. [0124] 3. Workarounds: Municipal vehicles such as buses have batteries and generators. Soon, such vehicles may also have Wi-Fi that is connected to satellites. The cloud could direct such resources where they are needed most.

[0125] An acoustical array, such as what is described herein, may also be used in damage assessment. For example, the acoustical array may determine both whether there is too much noise (e.g., explosions) as well as too little noise (e.g., absence of human activity), aggregated

over time and space.

4 Authorization and Privacy

[0126] In some exemplary embodiments of the system 100, privacy considerations may be addressed using one or more features, which may include the following. First, monitoring may be enabled on a device 120 only if the user explicitly "opts in" to permit particular monitoring options. A reason that a user may accept such monitoring is that he, in return, obtains information that is valuable to him, for example, by being provided more relevant search results or other information. Another feature relates to encryption of the monitored information. For example, audio may be encrypted in a manner that prevents interception during uploading and/or processing by a controller 120' or server 140. Furthermore, in systems 100 in which multiple central controllers are used (e.g., one controller 120' or server 140 per cellular telephone carrier), the user may explicitly permit sharing between or among controllers.

[0127] In some examples, devices 120 may have features that inhibit collection of audio environment data. Such features may be mechanical (for example, mechanically preventing audio pickup with a shutter mechanism) or can be electronic (for example, with an electronic slider switch on the device).

[0128] In some examples, sensors can be selectively turned on or off both at the edge of the network (in the smartphone), as well as in the network (in the cloud), as well as elsewhere. For example, the operator of a movie theatre may have the ability to turn off speakers that would annoy others in the movie theatre, and similarly the operator of an airplane should have the ability to turn off communication features that could jeopardize the safety of fellow passengers. Moreover, after an incident, such as a plane accident, the authorities should have the ability to probe (via a wired or wireless interface to the memory of the phone-could be non-volatile) the smartphones on the plane for information that could be helpful in the investigation. In other words, the array of smartphones on the plane could serve as a kind of "black box" to prevent

similar such incidents in the future.

[0129] However, privacy is also important in at least some versions of the system 100. In some exemplary embodiments, the owner of the smartphone should have the ability to pull the curtain with confidence that the phone is not invading the user's privacy, even if the phone has been taken over by a virus. When the curtain is pulled, the user wants to be sure that the phone is not recording information that could be embarrassing or self-incriminating. The phone should not be recording information that could be subject to subpoena or a court order such as discovery. The user should have the ability to opt out in a way that cannot be overridden by the owner of the network, government authority, or anyone else (such as a malicious hacker). For example, privacy may be implemented by a switch, as described further below.

[0130] Feature interaction can be a tricky problem in a communication network. While it is desirable that many parties have the ability to turn on and off certain features in certain ways, as discussed above, it is also important that it be clear to all parties what happens when different parties issue commands that may conflict with one another in complicated and unanticipated ways.

[0131] In particular, in at least some exemplary embodiments of the system, the owner of the phone ought to be in charge. In such embodiments, the owner may have the ability to physically disconnect the sensors in a way that cannot be overruled by any other party. One such method may include a physical switch that would disconnect the sensors in a way that the user can verify by visual inspection of the phone. The physical switch may be operated manually by the user and cannot be overridden remotely under software control.

[0132] In addition to the physical switch, there may also be a software controlled switch that may empower authorized parties to turn on and off features such as recording of sensors, recognizing keywords and uploading appropriate information to the cloud where inferences can be made that aggregate over space and time. Policies may eventually be determined regarding

who is allowed to do what, and what is appropriate and what is not.

5 Other Devices

[0133] As introduced above, the exemplary approaches described above are not limited to smartphones. For example, in-vehicle systems (e.g., navigation devices), media devices (e.g., televisions, set-top boxes, desktop computers, laptop computers), and other fixed or mobile devices may be used in similar ways. For example, in the case of an in-vehicle navigation system, an in-vehicle conversation may be monitored and information about a location (e.g., a restaurant) that is being discussed may be provided on the device's display.

[0134] Another type of device that may be used in such a system is an earpiece that provides audio input and output for a telephone (device). An advantage of monitoring with the earpiece is that it is exposed to the acoustic environment even when the associated phone is not exposed to the environment, for example, when the phone is in a user's pocket, thereby providing an improved signal-to-noise ratio (SNR). Another embodiment may have the entire mobile communication (cell phone) being integrated into the earpiece.

[0135] Another type of device 120 that may be used in such a system 100 is a hearing aid. The hearing aid may allow the entire feature set thus described in herein to be made practical. The advantage of this is data which could be mined from this age population is thought to be very different for the generation of users who typically use headphones for their communication activities.

[0136] Use of earpieces as described above can be thought of as ownership or control of the "last inch," which is similar to the ownership of the "last mile," which has been strategically important in the telephone business. The same dynamic underlies the debate over net neutrality. So too, ownership over the last inch will become strategically important in the war over eyes and ears. The web is currently about eyeballs and mouse clicks, but soon the war will move to a

struggle for access to ears as well as eyes. The hearing aid or earpiece could be viewed as a chief of staff. It gets to decide what the user hears and what the user doesn't hear. The hearing aid could give the wife preferred access. It could also block spam, and filter out unwanted commercials. Alternatively, the hearing aid or earpiece could run an auction similar to a paid search, where the hearing aid is a market maker that attempts to find an equilibrium between the need of the user for relevance and utility to the advertiser.

[0137] These auctions typically use a Vickrey auction to encourage advertisers to bid their true utility. If the user chooses to follow up on an ad (with a mouse click), then the advertiser pays the second highest bid. The hearing aid or earpiece could work in a similar way though, perhaps, instead of clicking on an ad, it might be easier for the user to participate by some other means such as a spoken command.

[0138] Although the invention has been described in terms of systems and methods for processing information from a plurality of distributed devices, it is contemplated that one or more steps and/or components may be implemented in software for use with microprocessors/general purpose computers (not shown). In this embodiment, one or more of the functions of the various components and/or steps described above may be implemented in software that controls a computer. The software may be embodied in non-transitory tangible computer readable media (such as, by way of non-limiting example, a magnetic disk, optical disk, flash memory, hard drive, etc.) for execution by the computer.

[0139] For example, some of the software may include instructions for execution at the personal devices 120 and device 120'. This software may be stored on a non-transitory tangible computer readable medium at a central location, for example, at a server 140 for distribution to the devices 120, 120', may be transferred over a digital communication medium, and/or stored in a machine readable medium at the devices 120, 120' (e.g., as downloaded applications/applets). Some of the software may be hosted at central servers 140 (e.g., in a distributed "cloud" of processors) and made accessible by storing it on non-transitory tangible

computer-readable media for execution on processors of the servers 140.

[0140] Although the invention is illustrated and described herein with reference to specific embodiments, the invention is not intended to be limited to the details shown. Rather, various modifications may be made in the details within the scope and range of equivalents of the claims and without departing from the invention.

CLAIMS

We claim:

1. A system comprising:
a device among a plurality of devices distributed in an environment;
wherein the device is configured as a controller on an ad hoc basis, wherein the controller performs operations comprising:
selecting a subset of devices from among the plurality of devices for acquiring sensor data;
receiving information based on the sensor data acquired by the selected subset of devices by using a mobile ad hoc network;
determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and
adjusting a manner in which the subset of devices operate based on the characteristic of the environment and the information.
2. The system of claim 1, wherein the operations further comprise configuring the subset of devices based on a triggering event.
3. The system of claim 1, wherein the operations further comprise determining a location of the at least one device of the subset of devices.
4. The system of claim 1, wherein the operations further comprise selecting the subset of devices based on a predetermined characteristic of the environment.
5. The system of claim 1, wherein the operations further comprise determining whether the subset of devices should be adjusted based on the characteristic of the environment.

6. The system of claim 1, wherein the operations further comprise adjusting a configuration of the subset of devices based on the characteristic of the environment.
7. The system of claim 1, wherein the operations further comprise adjusting a selection of the subset of devices based on the characteristic of the environment.
8. The system of claim 1, wherein the operations further comprise detecting a keyword in the information, and wherein the operations further comprise activating a sensor based on the keyword to confirm an event associated with the keyword.
9. The system of claim 1, wherein the operations further comprise determining a hot spot of activity based on the information, and wherein the operations further comprise activating a device in a vicinity of the hot spot to obtain further information associated with the hot spot.
10. The system of claim 1, wherein the operations further comprise generating an alert based on the information, the characteristic of the environment, or a combination thereof.
11. The system of claim 1, wherein the operations further comprise detecting a track of an audio source in the environment.
12. The system of claim 1, wherein the operations further comprise tracking activity of a user of at least one of the plurality of devices.
13. A method, comprising:
 - selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment, wherein the selecting is performed by utilizing a processor of a controller of at least one device from among the plurality of devices;
 - receiving information based on the sensor data acquired by the selected subset of devices by using a mobile ad hoc network;

determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and

adjusting a manner in which the subset of devices operate based on the characteristic of the environment and the information.

14. The method of claim 13, further comprising determining a position of each device of the plurality of devices.

15. The method of claim 13, further comprising detecting a non-speech acoustic event based on the information, the characteristic of the environment, or a combination thereof.

16. The method of claim 13, further comprising detecting an event based on the information, the characteristic of the environment, or a combination thereof, and further comprising activating at least one device of the plurality of devices in a vicinity of the event.

17. The method of claim 13, further comprising predicting a sequence of events, a set of events, or a combination thereof, based on the information, the characteristic of the environment, or a combination thereof.

18. The method of claim 13, further comprising determining, based on a keyword detected in the information, a topic associated with the sensor data.

19. The method of claim 18, further comprising assessing a topic of interest for a user based on the topic.

20. A computer-readable medium comprising instructions, which, when loaded and executed by a processor, cause the processor to perform operations, the operations comprising:

selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment;

receiving information based on the sensor data acquired by the selected subset of devices by using a mobile ad hoc network;

determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and

modifying a manner in which the subset of devices operate based on the characteristic of the environment and the information.

ABSTRACT

Distributed systems, controllers and methods for processing information from a plurality of devices are provided. A distributed system includes a plurality of devices distributed in an environment. Each device has at least a communication capability for interchanging information with others of the devices and/or with a communication system. Each of at least some of the devices has one or more sensors for acquiring sensor data related to the environment proximate to the device. At least one of the communication system or one or more of the devices is configured as a controller configured to: select a subset of devices from among the plurality of devices, receive information based on the acquired sensor data of the selected subset, and combine the received information from the selected subset to determine a characteristic of the environment proximate to one or more of the devices.

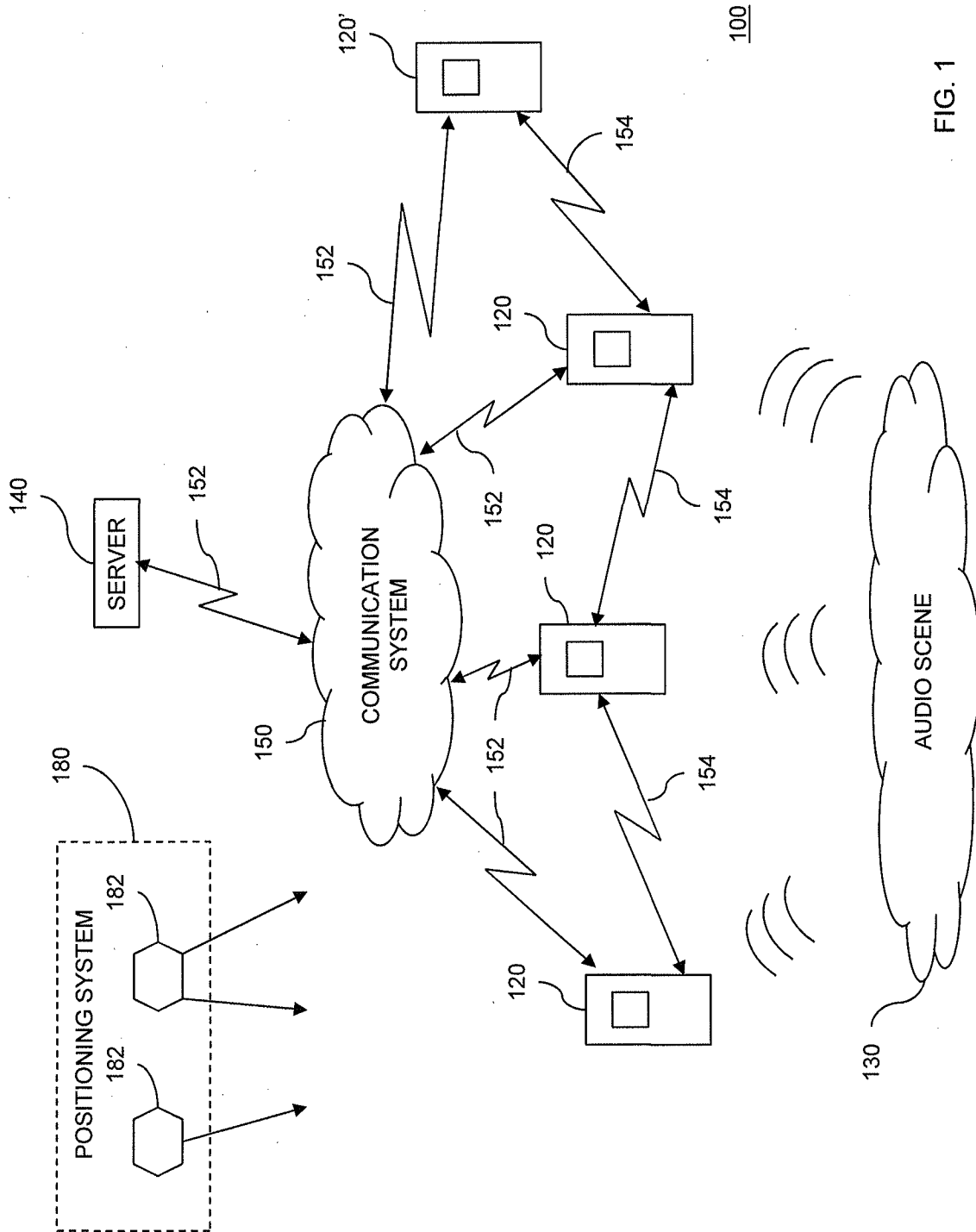


FIG. 1

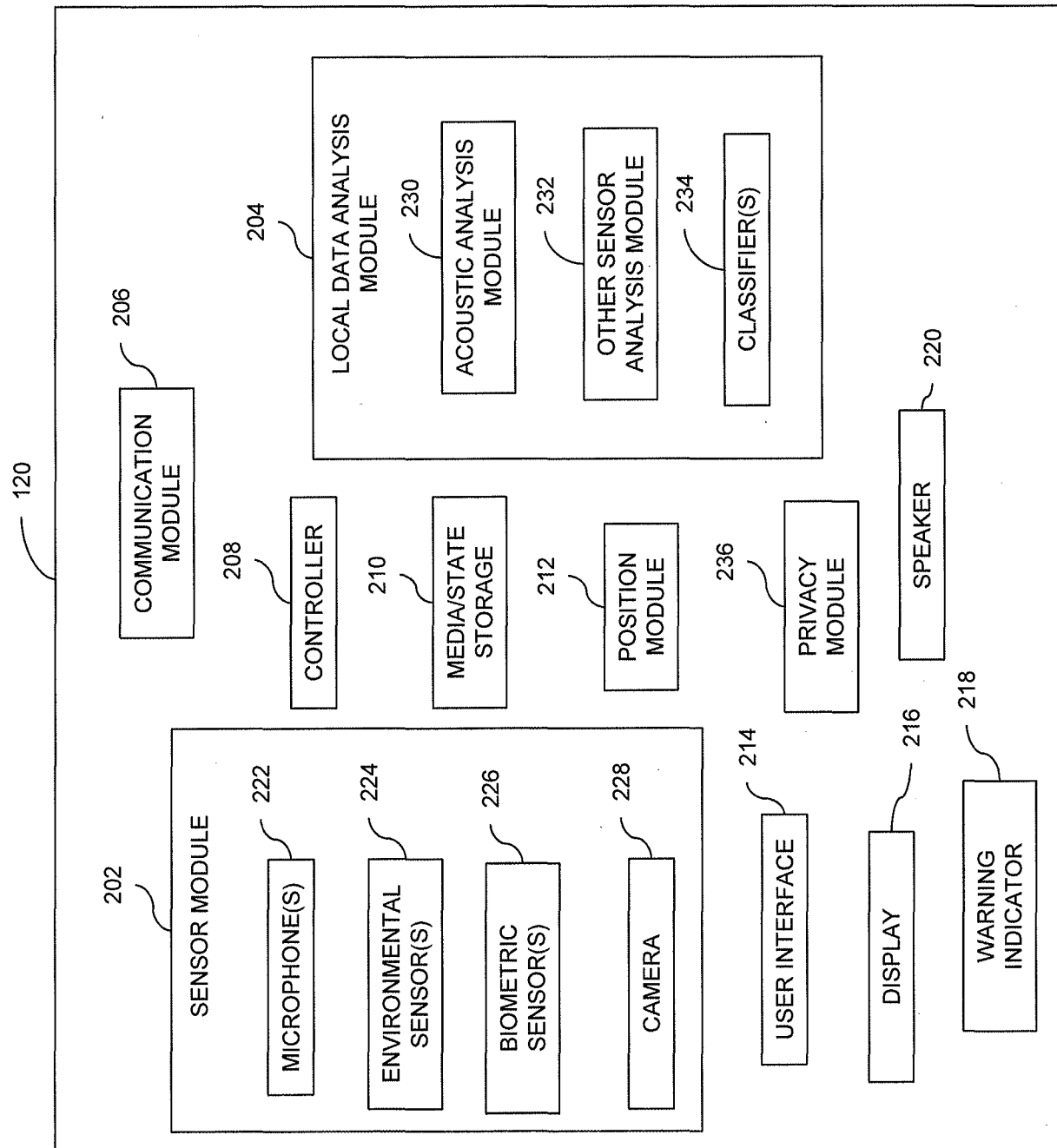


FIG. 2A

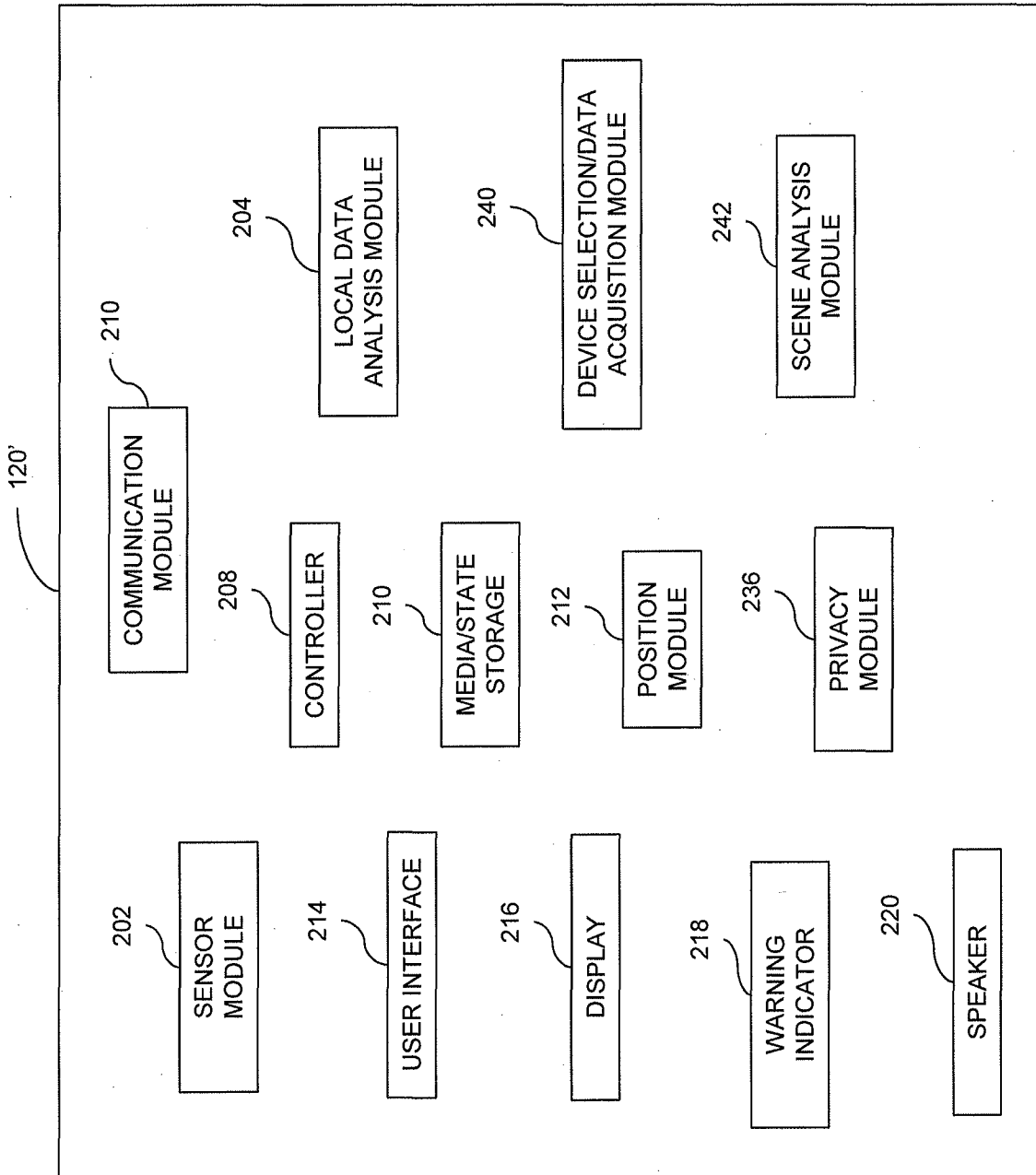


FIG. 2B

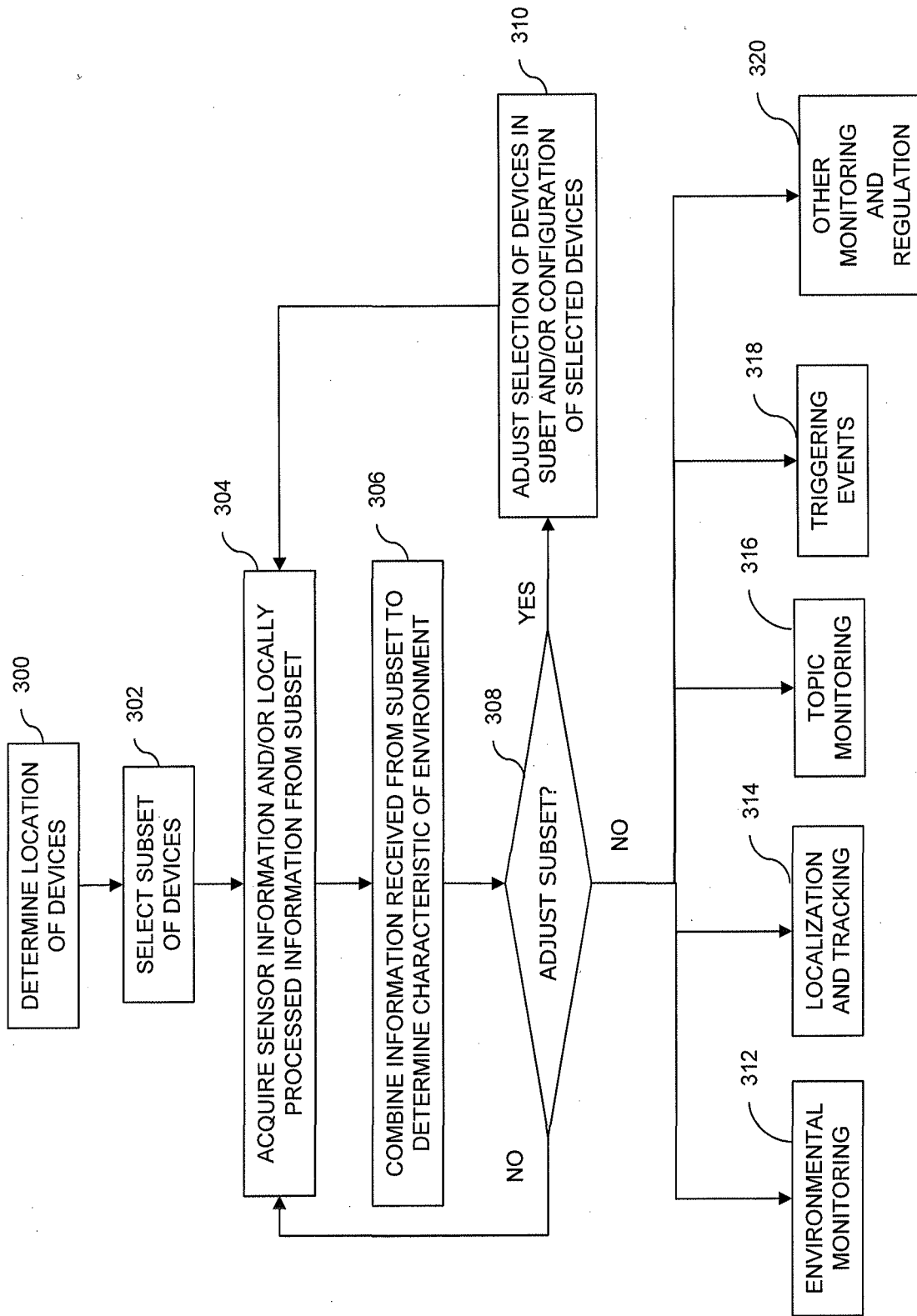


FIG. 3

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Information Processing Using A Population Of Data Acquisition Devices		
First Named Inventor/Applicant Name:		Steven W. Goldstein		
Filer:		Peter Allen Chiabotti/Angela Martin		
Attorney Docket Number:		11472-15-1_AMBZ-101US1		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				785

Electronic Acknowledgement Receipt

EFS ID:	33380524
Application Number:	16055488
International Application Number:	
Confirmation Number:	3233
Title of Invention:	Information Processing Using A Population Of Data Acquisition Devices
First Named Inventor/Applicant Name:	Steven W. Goldstein
Customer Number:	150139
Filer:	Peter Allen Chiabotti/Angela Martin
Filer Authorized By:	Peter Allen Chiabotti
Attorney Docket Number:	11472-15-1_AMBZ-101US1
Receipt Date:	06-AUG-2018
Filing Date:	
Time Stamp:	14:14:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 785
RAM confirmation Number	080718INTEFSW00000509500951
Deposit Account	500951
Authorized User	Angela Martin

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

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	WebADS.pdf	125074	no	8
			a0715f922d47b89dbf82b492da4b08854998504e		
Warnings:					
Information:					
2	Oath or Declaration filed	11472-15-1_Declaration-Executed.PDF	231710	no	3
			044844add41afa90be8afd892eef7736f12b8b2a		
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	11472-15-1_IDS.PDF	1034826	no	5
			334fc66469e6c42c7bbf38c3161753a34bad552		
Warnings:					
Information:					
4	Power of Attorney	11472-15-1_POA-Executed.PDF	70455	no	1
			9d3afa5a708e2fb10c4b14a54f13a57914976f12		
Warnings:					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73	11472-15-1_CFR_Statement.PDF	123576	no	3
			48cc698f278ae1986fb0ff5f47cf955a52d330dc		
Warnings:					
Information:					
6		11472-15-1_Application.PDF	211279	yes	44
			bf9a7c43594c9d362168ea398387f5d2800cf452		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	

	Specification	1	39
	Claims	40	43
	Abstract	44	44

Warnings:

Information:

7	Drawings-other than black and white line drawings	11472-15-1_Drawings.PDF	84085	no	4
			49b9f47238f62e6124af9fca7fd9d0a0f7d06578		

Warnings:

Information:

8	Fee Worksheet (SB06)	fee-info.pdf	35625	no	2
			4b4ba6dfc1dbd8dc9359c1966bf373b19013c4c2		

Warnings:

Information:

Total Files Size (in bytes):		1916630
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	11472-15-1_AMBZ-101US1
		Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Steven	W.	Goldstein	
Residence Information (Select One)		☒ US Residency ☐ Non US Residency ☐ Active US Military Service		
City	Delray Beach	State/Province	FL	Country of Residence ⁱ US
Mailing Address of Inventor:				
Address 1	16193 Bridlewood Circle			
Address 2				
City	Delray Beach	State/Province	FL	
Postal Code	33445	Country ⁱ	US	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	
Customer Number	150139
Email Address	ip@akerman.com Add Email Remove Email

Application Information:

Title of the Invention	Information Processing Using A Population Of Data Acquisition Devices		
Attorney Docket Number	11472-15-1_AMBZ-101US1	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	1

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	11472-15-1_AMBZ-101US1
		Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

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

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

Publication Information:

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

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

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:						
☒ Customer Number		☐ US Patent Practitioner		☐ Limited Recognition (37 CFR 11.9)		
Customer Number		150139				
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove	
Registration Number						
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove	
Registration Number						
Additional Representative Information blocks may be generated within this form by selecting the Add button.						

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	11472-15-1_AMBZ-101US1
		Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	13976636	2013-10-01

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13976636	a 371 of international	PCT/US11/68103	2011-12-30

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US11/68103	Claims benefit of provisional	61431507	2011-01-11

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US11/68103	Claims benefit of provisional	61428369	2010-12-30

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

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

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

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	11472-15-1_AMBZ-101US1
	Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices	

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

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

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

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	11472-15-1_AMBZ-101US1
	Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices	

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

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

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

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

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

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

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	11472-15-1_AMBZ-101US1
	Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices	

Applicant Information:

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

Applicant 1

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

Clear

☒ Assignee ☐ Legal Representative under 35 U.S.C. 117 ☐ Joint Inventor

☐ Person to whom the inventor is obligated to assign. ☐ Person who shows sufficient proprietary interest

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

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name Staton Techiya, LLC

Mailing Address Information For Applicant:

Address 1	16193 Bridlewood Circle		
Address 2			
City	Delray Beach	State/Province	FL
Country ⁱ	US	Postal Code	33445
Phone Number		Fax Number	
Email Address			

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

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	11472-15-1_AMBZ-101US1
	Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices	

Assignee Information including Non-Applicant Assignee Information:

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

Assignee 1						
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.						
If the Assignee or Non-Applicant Assignee is an Organization check here.			☒			
Organization Name	Staton Techiya, LLC					
Mailing Address Information For Assignee including Non-Applicant Assignee:						
Address 1	16193 Bridlewood Circle					
Address 2						
City	Delray Beach	State/Province	FL			
Country i	US	Postal Code	33445			
Phone Number		Fax Number				
Email Address						
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.						

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	11472-15-1_AMBZ-101US1
	Application Number	
Title of Invention	Information Processing Using A Population Of Data Acquisition Devices	

Signature:

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

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

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

Signature	/Peter A. Chiabotti/			Date (YYYY-MM-DD)	
First Name	Peter A.	Last Name	Chiabotti	Registration Number	54603
Additional Signature may be generated within this form by selecting the Add button.					

**DECLARATION/
POWER OF ATTORNEY
FOR UTILITY OR DESIGN
PATENT APPLICATION**

☐ Declaration Submitted With Initial Filing (37 CFR 1.63) ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required) ☐ Supplemental Declaration (37 CFR 1.67)

Attorney Docket Number:	AMBZ-101US
First Named Inventor:	Steven W. Goldstein
COMPLETE IF KNOWN	
Application Number:	13/976,638
Filing Date:	June 27, 2013
Art Unit:	TBD
Examiner Name:	TBD

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

(Title of the Invention)

the specification of which

☐ Is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 12-30-2011 as United States Application or PCT International Application Number PCT/US2011/068103 and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified application, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified US application, and 3) any U.S. application from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				Yes	No
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet attached hereto.

I hereby appoint:

☒ **Practitioners at Customer Number 71,158**

OR

☐ Practitioner(s) named below:

Name	Registration Number

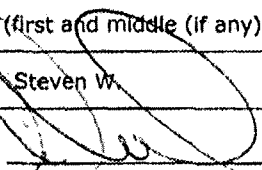
as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Direct all correspondence to:		☒ Practitioners Customer Number listed above; OR ☐ Correspondence Address Below	
Name:			
Address:			
City:	State:	Zip:	
Country:	Telephone:	Fax:	

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: Patent Application Files. Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: Deposit Accounts and Electronic Funds Transfer Profiles.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:			☐ A Petition has been filed for this unsigned inventor.		
Given Name (first and middle (if any))			Family Name or Surname		
Steven W.			Goldstein		
Inventor's Signature 			Date: Sep 3, 2003		
Residence: City: Delray Beach		State: FL	Country: US		Citizenship: US
Mailing Address: 16390 Maddalena Place					
Mailing Address:					
City: Delray Beach		State: FL	Zip: 33446	Country: US	
Name of Second Inventor:			☐ A Petition has been filed for this unsigned inventor.		
Given Name (first and middle (if any))			Family Name or Surname		
Inventor's Signature			Date:		
Residence: City:		State:	Country:	Citizenship:	
Mailing Address:					
Mailing Address:					
City:		State:	Zip:	Country:	
☐ Additional inventors are listed on the next page.					

SCORE Placeholder Sheet for IFW Content

Application Number: 16055488

Document Date: 08/06/2018

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via eDAN using the Supplemental Content tab, or via the SCORE web page.
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/055,488	08/06/2018	3714	785	11472-15-1_AMBZ-101US1	20	3

CONFIRMATION NO. 3233

FILING RECEIPT



00000000101814943

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

Date Mailed: 08/24/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Steven W. Goldstein, Delray Beach, FL;

Applicant(s)

Staton Techiya, LLC, Delray Beach, FL;

Assignment For Published Patent Application

Staton Techiya, LLC, Delray Beach, FL

Power of Attorney: The patent practitioners associated with Customer Number 150139

Domestic Priority data as claimed by applicant

This application is a CON of 13/976,636 10/01/2013 PAT 10045321
which is a 371 of PCT/US11/68103 12/30/2011
which claims benefit of 61/431,507 01/11/2011
and claims benefit of 61/428,369 12/30/2010

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 08/23/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/055,488**

Projected Publication Date: 11/29/2018

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Information Processing Using A Population Of Data Acquisition Devices

Preliminary Class

463

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/055,488		
APPLICATION AS FILED - PART I								
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)	
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A		
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	330		N/A		
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A		
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 50 =	0.00	OR			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 230 =	0.00				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00				
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	785		TOTAL		
APPLICATION AS AMENDED - PART II								
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =	
	Application Size Fee (37 CFR 1.16(s))					OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR		
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =	
	Application Size Fee (37 CFR 1.16(s))					OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR		
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.								



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1

CONFIRMATION NO. 3233

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

INFORMAL NOTICE



Date Mailed: 08/24/2018

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

A new inventor's oath or declaration that identifies this application (e.g., by Application Number and filing date) is required. The inventor's oath or declaration does not comply with 37 CFR 1.63 in that it:

- does not state that the above-identified application was made or authorized to be made by the person executing the oath or declaration.

Steven W. Goldstein

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

/lvongxay/

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	16/055,488	Confirmation No. 3233
Application of	:	Goldstein et al.	
Date Filed	:	August 6, 2018	
Examiner	:	Myron Wyche	
TC/A.U.	:	2644	
Docket	:	11472-15-1_AMBZ-101US1	
Customer No.	:	30448	
Title	:	Information Processing Using A Population Of Data Acquisition Devices	

Submission Of Signed Declaration

Enclosed please find the declarations signed by the inventor in connection with the above-referenced application. Although no fees are believed to be due, authorization is hereby given to charge any deficiencies or to credit any overpayment to Deposit Account No. 50-0951.

Respectfully submitted,

AKERMAN LLP

Date: November 16, 2018

/Peter A. Chiabotti/
Peter A. Chiabotti
Reg. No. 67,376
777 S. Flagler Dr., Ste. 1100 West Tower
West Palm Beach, FL 33401
Tel: 561-653-5000

Electronic Acknowledgement Receipt

EFS ID:	34331810
Application Number:	16055488
International Application Number:	
Confirmation Number:	3233
Title of Invention:	Information Processing Using A Population Of Data Acquisition Devices
First Named Inventor/Applicant Name:	Steven W. Goldstein
Customer Number:	150139
Filer:	Peter Allen Chiabotti/Angela Martin
Filer Authorized By:	Peter Allen Chiabotti
Attorney Docket Number:	11472-15-1_AMBZ-101US1
Receipt Date:	16-NOV-2018
Filing Date:	06-AUG-2018
Time Stamp:	12:59:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		11472-15-1.pdf	171806	yes	2
			d51672e9a635f5ea098166c06eace056afaf9ba1		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Oath or Declaration filed	2	2
	Applicant Response to Pre-Exam Formalities Notice	1	1
Warnings:			
Information:			
Total Files Size (in bytes):		171806	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)****Title of
Invention**

Information Processing Using A Population Of Data Acquisition Devices

As the below named inventor, I hereby declare that:

This declaration is directed to: ☐ The attached application, or☒ United States application or PCT international application number 16/055,488
filed on August 6, 2018

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTORInventor: Steven W. Goldstein Date (Optional): _____Signature: Steve Goldstein

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1

CONFIRMATION NO. 3233

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

PUBLICATION NOTICE



OC000000104135575

Title:Information Processing Using A Population Of Data Acquisition Devices

Publication No.US-2018-0343636-A1

Publication Date:11/29/2018

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1	3233
150139	7590	06/10/2019	EXAMINER	
Akerman LLP			WYCHE, MYRON	
777 South Flagler Drive			ART UNIT	
Suite 1100 West Tower			PAPER NUMBER	
West Palm Beach, FL 33401			2644	
			NOTIFICATION DATE	
			DELIVERY MODE	
			06/10/2019	
			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):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 8/6/18 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 10-15 and 17-20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 20090085873 (Betts et al.) in view of US Patent Application Publication No. 20100316033 (Atwal) and "A Survey of Mobile Phone Sensing" (Lane).

Regarding claims 1, 13 and 20, Betts et al. discloses: "a system ([0001]: **"sensory enhancement (SE) systems and methods implemented in personal electronic devices (PEDs) for monitoring environmental conditions and detecting environmental events"**"); [0019]: **"FIG. 7 is a diagram illustrating cooperative operation of multiple PEDs"**) comprising: a device (**FIG. 7: 300a**) among a plurality of devices (**FIG. 7: 300a – 300d**) distributed in an environment ([0103]: **"...multiple cooperating PEDs 300a, 300b and 300c**

may detect the event and triangulation between the multiple cooperating PEDs 300a, 300b and 300c can determine the target location 740 with greater accuracy”); selecting a subset of devices from among the plurality of devices for acquiring sensor data ([0101]: **“Two or more PEDs 300 can function cooperatively to provide sensory enhancement over a wider range than that covered by a single PED 300. Multiple cooperating PEDs 300 can simultaneously monitor for selected environmental events as illustrated in FIG. 7”**); receiving information based on the sensor data acquired by the selected subset of devices (FIG. 1: 105, 130; FIG. 2: 215; [0020]: **“FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc”**; FIG. 2: 215, 348; [0021]: **The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”**); determining a characteristic of the environment based on aggregating the information ([0038] ... **Multiple SE systems 100 can perform correlations with their individual sets of stored references and**

communicate shared results”), wherein the environment is proximate to at least one device in the subset of devices ([0104]: **“Upon detection of the selected event in one or more PEDs 300, the GPS receiver 374 (FIG. 2) in the detecting PED 300 can accurately identify the location and time of detection at the detecting PED 300. Correlation of three or more detecting PEDs 300 will allow an accurate position determination of the source of the event”**).

However, Betts et al. does not clearly disclose the remaining limitations of the claim. To that end, Atwal discloses: “wherein the device is configured as a controller on an ad hoc basis, wherein the controller performs operations” and “by using a mobile ad hoc network” ([0042]: **“... a method for a plurality of mobile devices interact as nodes in a mobile ad hoc network”**; **“In embodiments, adaptation decisions may be made by a centralized controller, in a distributed manner, and the like”**). It is respectfully submitted that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Betts et al. with the invention of Atwal in order to provide a mobile ad hoc network (e.g., see Atwal @ [0042]).

However, the combination of Betts et al. and Atwal does not clearly disclose the remaining limitations of the claim. To that end, Lane discloses: “adjusting a manner in which the subset of devices operate based on the characteristic of the environment and the information” ((pg. 134, FIG. 3; pg. 143, FIG. 3; pg. 144: **“learn”**, FIG. 4). It is respectfully submitted that it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Betts et al. and Atwal with the invention of Lane in order to learn trend information in the combined information (e.g., see Lane @ FIG. 3; pg. 144: **“learn”**, FIG. 4).

Regarding claim 13, Betts et al. discloses: “selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment ([0101]: **“Two or more PEDs 300 can function cooperatively to provide sensory enhancement over a wider range than that covered by a single PED 300. Multiple cooperating PEDs 300 can simultaneously monitor for selected environmental**

events as illustrated in FIG. 7”), wherein the selecting is performed by utilizing a processor of a controller (**FIG. 2: 215, 360, 368**) of at least one device from among the plurality of devices; receiving information based on the sensor data acquired by the selected subset of devices (**FIG. 1: 105, 130; FIG. 2: 215; [0020]: “FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc”**; **FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”**); determining a characteristic of the environment based on aggregating the information (**[0038] ... Multiple SE systems 100 can perform correlations with their individual sets of stored references and communicate shared results**”), wherein the environment is proximate to at least one device in the subset of devices” (**[0104]: “Upon detection of the selected event in one or more PEDs 300, the GPS receiver 374 (FIG. 2) in the detecting PED 300 can accurately identify the location and time of detection at the detecting PED 300. Correlation of three or more**

detecting PEDs 300 will allow an accurate position determination of the source of the event”).

In addition, Atwal discloses: “using a mobile ad hoc network” ([0042]: “... a method for a **plurality of mobile devices** interact as nodes in a **mobile ad hoc network**”; “In embodiments, **adaptation decisions** may be made by a centralized **controller**, in a distributed manner, and the like”).

Further, Lane discloses: “adjusting a manner in which the subset of devices operate based on the characteristic of the environment and the information” (pg. 134, FIG. 3; pg. 143, FIG. 3; pg. 144: “learn”, FIG. 4).

With respect to claim 20, Betts et al. discloses: “a computer-readable medium comprising instructions, which, when loaded and executed by a processor, cause the processor (FIG. 2: 215, 360, 368) to perform operations ([0021]: “**implemented in software executed by a computer based architecture**. When designed via software, it can be **stored and transported in a computer readable medium**”), the operations comprising: selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment ([0101]: “**Two or more PEDs 300 can function cooperatively to provide sensory enhancement over a wider range than that covered by a single PED 300. Multiple cooperating PEDs 300 can simultaneously monitor for selected environmental events as illustrated in FIG. 7**”); receiving information based on the sensor data acquired by the selected subset of devices (FIG. 1: 105, 130; FIG. 2: 215; [0020]: “FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, **an audio microphone 130** as shown, etc., for **receiving one or more reference signatures that are used to identify environmental**

events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc"; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"); determining a characteristic of the environment based on aggregating the information ([0038] ... Multiple SE systems 100 can perform correlations with their individual sets of stored references and communicate shared results"), wherein the environment is proximate to at least one device in the subset of devices ([0104]: "Upon detection of the selected event in one or more PEDs 300, the GPS receiver 374 (FIG. 2) in the detecting PED 300 can accurately identify the location and time of detection at the detecting PED 300. Correlation of three or more detecting PEDs 300 will allow an accurate position determination of the source of the event").

In addition, Atwal discloses: "by using a mobile ad hoc network" ([0042]: "... a method for a plurality of mobile devices interact as nodes in a mobile ad hoc network"; "In embodiments, adaptation decisions may be made by a centralized controller, in a distributed manner, and the like").

Further, Lane discloses: "adjusting a manner in which the subset of devices operate based on the characteristic of the environment and the information" (pg. 134, FIG. 3; pg. 143, FIG. 3; pg. 144: "learn", FIG. 4).

With respect to claim 2, Betts et al. discloses: “the operations further comprise configuring the subset of devices based on a triggering event” ([0020]: **“receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions”**; [0021]: The system 100 further comprises a **detection engine 215 that stores the one or more reference signatures that are used to identify environmental events**, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”).

Regarding claim 3, Betts et al. discloses: “the operations further comprise determining a location of the at least one device of the subset of devices” ([0104]: **“Upon detection of the selected event in one or more PEDs 300, the GPS receiver 374 (FIG. 2) in the detecting PED 300 can accurately identify the location and time of detection at the detecting PED 300. Correlation of three or more detecting PEDs 300 will allow an accurate position determination of the source of the event. If the source is moving, then the direction of travel can be determined by computing the vector between successive positions. Each PED 300 can calculate and display the location of the event”**).

With respect to claim 4, Betts et al. discloses: “the operations further comprise selecting the subset of devices based on a predetermined characteristic of the environment” (FIG. 1: 105, FIG. 2: 215; [0021]: “The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”).

Regarding claim 5, Betts et al. discloses: “the operations further comprise determining whether the subset of devices should be adjusted based on the characteristic of the

environment” ([0038]: “perform correlations” and “communicate shared results”; [0104]: “detection of the selected event in one or more PEDs 300”; “detection at each detecting PED 300 can be communicated to all participating PEDs 300”; and “Correlation of three or more detecting PEDs 300”).

With respect to claim 6, Betts et al. discloses: “the operations further comprise adjusting a configuration of the subset of devices based on the characteristic of the environment” ([0038]: “perform correlations” and “communicate shared results”; [0104]: “detection of the selected event in one or more PEDs 300”; “detection at each detecting PED 300 can be communicated to all participating PEDs 300”; and “Correlation of three or more detecting PEDs 300”).

Regarding claim 7, Betts et al. discloses: “the operations further comprise adjusting a selection of the subset of devices based on the characteristic of the environment” ([0038]: “perform correlations” and “communicate shared results”; [0104]: “detection of the selected event in one or more PEDs 300”; “detection at each detecting PED 300 can be communicated to all participating PEDs 300”; and “Correlation of three or more detecting PEDs 300”).

With respect to claim 8, Betts et al. discloses: “the operations further comprise detecting a keyword in the information, and wherein the operations further comprise activating a sensor based on the keyword to confirm an event associated with the keyword” (FIG. 1: 105, 130; FIG. 2: 215; [0020]: “FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing

acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc."; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"; [0024]: "Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120").

With respect to claim 10, Betts et al. discloses: "the operations further comprise generating an alert based on the information, the characteristic of the environment, or a combination thereof" Position information from the GPS receiver 374 can be used to alert the operator of proximity to various locations, including those that are hazardous or dangerous. GPS receiver 374 can provide dynamic inputs of speed, direction, and distance traveled to the SE system 100").

Regarding claim 11, Betts et al. discloses: "the operations further comprise detecting a track of an audio source in the environment" (FIG. 1: 105, 130; FIG. 2: 215; [0020]: "FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or

more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc.”; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”; [0024]: “Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120”).

With respect to claim 12, Betts et al. discloses: “the operations further comprise tracking activity of a user of at least one of the plurality of devices” (FIG. 1: 105, 130; FIG. 2: 215; [0020]: “FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature,

heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc."; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"; [0024]: "Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120").

With respect to claim 14, Betts et al. discloses: "determining a position of each device of the plurality of devices" ([0101]: "Multiple cooperating PEDs 300 can simultaneously monitor for selected environmental events as illustrated in FIG. 7"; [0102]: "COOPERATIVE DEVICES screen 462 (FIG. 3) is used to coordinate two or more PEDs 300. The VOLUNTEER command allows the operator to volunteer the PED 300 for cooperative operation with other PEDs 300 in the area. A volunteer signal will be sent to other PEDs 300 identifying the PED 300, its location, and the sensors that are available").

Regarding claim 15, Betts et al. discloses: "detecting a non-speech acoustic event based on the information, the characteristic of the environment, or a combination thereof" (FIG. 1: 105, 130; FIG. 2: 215; [0020]: "FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to

identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc."; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"; [0024]: "Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120").

Regarding claim 17, Betts et al. discloses: "predicting a sequence of events, a set of events, or a combination thereof, based on the information, the characteristic of the environment, or a combination thereof" (FIG. 1: 105, 130; FIG. 2: 215; [0020]: "FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart

beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc."; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"; [0024]: "Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120").

With respect to claim 18, Betts et al. discloses: "determining, based on a keyword detected in the information, a topic associated with the sensor data" (FIG. 1: 105, 130; FIG. 2: 215; [0020]: "FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric

sensor, etc"; FIG. 2: 215, 348; [0021]: The system 100 further comprises a **detection engine 215 that stores the one or more reference signatures that are used to identify environmental events**, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events"; [0024]: **"Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120"**).

Regarding claim 19, the Examiner takes Official Notice that the limitation of: "assessing a topic of interest for a user based on the topic" is well known in the art.

Claims 9 and 16 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Betts et al. in view of Atwal , Lane and US Patent Application Publication No. 20110280170 (Bowser et al.).

Claim 9 is dependent upon claim 1. As discussed above, claim 1 is disclosed by the combination of Betts et al., Atwal and Lane. Thus, those limitations of claim 9 that are recited in claim 1 are also disclosed by the combination of Betts et al., Atwal and Lane.

However, the combination of Betts et al., Atwal and Lane does not clearly disclose the remaining limitations of the claim. To that end, Bowser et al. discloses: "the operations further comprise determining a hot spot of activity based on the information, and wherein the operations further comprise activating a device in a vicinity of the hot spot to obtain further information associated with the hot spot" ([0061]: **"Trivial increase algorithm: upon detecting increasing activity, increase number of active nodes incrementally in a predetermined order; [0062]: "Active grouping increase: upon detecting increased activity, increase number of active nodes by activating a minimum number of nodes based on the location of activity"**). It is respectfully submitted that it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Betts et al., Atwal and

Lane with the invention of Bowser et al. in order to activate nodes/devices based on information on activity (e.g., see Bowser et al. @ [0062]).

With respect to claim 16, Betts et al. discloses: “detecting an event based on the information, the characteristic of the environment, or a combination thereof” (FIG. 1: 105, 130; FIG. 2: 215; [0020]: “FIG. 1 is a block diagram of an example implementation of the sensory enhancement (SE) system in accordance with the present invention and is generally denoted by reference numeral 100. As is shown in FIG. 1, the SE system 100 includes one or more input devices 105, such as but not limited to, a computer 120 as shown that can be communicatively coupled to the Internet 110, an audio microphone 130 as shown, etc., for receiving one or more reference signatures that are used to identify environmental events. The input devices 105 can be any transducer for sensing acoustic, thermal, optical, electromagnetic, chemical, dynamic, wireless, atmospheric, or biometric conditions (e.g., a body function, such as blood pressure, body temperature, heart rate, sugar level, heart beat, oxygen level, etc.), for example but not limited to, an audio microphone, video camera, Hall Effect magnetic field detector, flux gate compass, electromagnetic field detector, accelerometer, barometric pressure sensor, thermometer, ionization detector, smoke detector, gaseous detector, radiation detector, biometric sensor, etc.”; FIG. 2: 215, 348; [0021]: The system 100 further comprises a detection engine 215 that stores the one or more reference signatures that are used to identify environmental events, that correlates sensed environmental signals with the reference signatures, and that detects occurrences of the environmental events”; [0024]: “Reference signatures, such as bird calls, a human voice, registered emergency signals (e.g., a police car siren or fire truck siren), etc. can be collected from the Internet 110 or another source by the computer 120”).

In addition, Bowser et al. discloses: “activating at least one device of the plurality of devices in a vicinity of the event” ([0061]: “Trivial increase algorithm: upon detecting

increasing activity, increase number of active nodes incrementally in a predetermined order; [0062]: “Active grouping increase: upon detecting increased activity, increase number of active nodes by activating a minimum number of nodes based on the location of activity”).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MYRON K WYCHE whose telephone number is (571)272-3390. The examiner can normally be reached on 7:30 am - 3:30 pm.

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, Kathy Wang-Hurst can be reached on 571-270-5371. 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.

/Myron Wyche/ 6/5/19
Primary Examiner AU2644

<i>Notice of References Cited</i>	Application/Control No. 16/055,488		Applicant(s)/Patent Under Reexamination Goldstein, Steven W.	
	Examiner MYRON K WYCHE		Art Unit 2644	Page 1 of 1

U.S. PATENT DOCUMENTS						
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20090085873-A1	04-2009	Betts; William L.	G08B13/1427	345/169
*	B	US-20100316033-A1	12-2010	Atwal; Peter	H04W74/002	370/338
*	C	US-20110280170-A1	11-2011	BOWSER; Robert	G06F1/3203	370/311
	D					
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	N				
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NON-PATENT DOCUMENTS		
*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
*	U	LANE et al., "A Survey of Mobile Phone Sensing," IEEE Communications Magazine, September 2010, pp. 140-150
	V	
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	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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<i>Search Notes</i> 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

CPC - Searched*		
Symbol	Date	Examiner
H04W 64/00	06/05/2019	MW
H04W 84/02	06/05/2019	MW
H04J 3/26	06/05/2019	MW

CPC Combination Sets - Searched*		
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Class	Subclass	Date	Examiner

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Search Notes		
Search Notes	Date	Examiner
Inventor NAME Search	06/05/2019	MW
WORD Search	06/05/2019	MW

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Application Number		
Filing Date		2018-08-06
First Named Inventor	Steven W. Goldstein	
Art Unit		
Examiner Name		
Attorney Docket Number	11472-15-1_AMBZ-101US1	

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/M.W/	1	20090085873		2009-04-02	Betts et al.	
/M.W/	2	20090327478		2009-12-31	Krause et al.	
/M.W/	3	20100040079		2010-02-18	Park et al.	
/M.W/	4	20100299615		2010-11-25	Miluzzo et al.	
/M.W/	5	20100316033		2010-12-16	Atwal	

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

Application Number		
Filing Date		2018-08-06
First Named Inventor	Steven W. Goldstein	
Art Unit		
Examiner Name		
Attorney Docket Number	11472-15-1_AMBZ-101US1	

/M.W/	6	20110065451		2011-03-17	Danado et al.	
/M.W/	7	20110143728		2011-06-16	Holopainen et al.	

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/M.W/	1	LANE et al., "A Survey of Mobile Phone Sensing," IEEE Communications Magazine, September 2010, pp. 140-150.	
/M.W/	2	SINGH et al., "Towards Environment-to-Environment (E2E) Multimedia Communication Systems," Multimed Tools Appl (May 5, 2009) 44:361-388.	
/M.W/	3	International Search Report for International Application No. PCT/US11/068103, dated May 3, 2012.	
/M.W/	4	Written Opinion for International Application No. PCT/US11/068103, dated May 3, 2012.	

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(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2018-08-06
First Named Inventor	Steven W. Goldstein	
Art Unit		
Examiner Name		
Attorney Docket Number	11472-15-1_AMBZ-101US1	

EXAMINER SIGNATURE

Examiner Signature	/MYRON WYCHE/	Date Considered	06/04/2019
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2018-08-06
First Named Inventor	Steven W. Goldstein	
Art Unit		
Examiner Name		
Attorney Docket Number	11472-15-1_AMBZ-101US1	

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Peter A. Chiabotti/	Date (YYYY-MM-DD)	2018-08-06
Name/Print	Peter A. Chiabotti	Registration Number	54603

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

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1922726	H04W 64/00	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:06
L2	1922663	H04W 84/02	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
L3	454375	H04J 3/26	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
L4	979103	I1 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
L5	979110	I2 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
L6	364323	I3 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:08
L7	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:12
L8	207	Goldstein-Steven-W.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:13
L9	133	I8 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:13
L10	1	(I4 AND ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:15

L11	1	I5 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:15
L12	0	I6 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:15
L13	1	I4 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
L14	1	I5 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
L15	0	I6 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
L16	0	I4 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
L17	0	I5 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
L18	0	I6 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
L19	0	I4 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
L20	0	I5 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
L21	0	I6 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
L22	0	I4 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:19

L23	0	I5 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:19
L24	0	I6 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:19
S1	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:32
S2	202	Goldstein-Steven-W.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:33
S3	3	"20080300817"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:36
S4	2	"20100316033"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:15
S5	6	"20100040079"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:16
S6	14	"hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:46
S7	5	S6 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:47
S8	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:51
S9	1	S8 AND "hot spot"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:51
S10	714	"hot spot" WITH activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:52

S11	450	S10 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:52
S12	9	"hot spot" WITH activity WITH vicinity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:53
S13	7	S12 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:53
S14	9	sniffer WITH "hot spot"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:58
S15	8	S14 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:58
S16	0	("hot spot" WITH activity) SAME vicinity SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:00
S17	0	("hot spot" WITH activity) SAME proximate SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:01
S18	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:01
S19	0	("hot spot" SAME activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:02
S20	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:02
S21	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:03
S22	59	("hot spot") SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:03

S23	2	("hot spot") SAME (vicinity OR proximate) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:03
S24	27	S22 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:04
S25	0	"hot spot of" ADJ activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S26	63	"hot spot" ADJ activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S27	0	("hot spot" ADJ activity) SAME proximity SAME device SAME activate	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S28	0	("hot spot" ADJ activity) SAME proximity SAME device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S29	3	("hot spot" ADJ activity) SAME device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S30	0	S29 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S31	1	("hot spot" ADJ activity) SAME (activate OR activating)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:11
S32	3	("hot spot" ADJ activity) SAME (device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:11
S33	0	("hot spot" ADJ activity) SAME (wireless)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:11
S34	100	("hot spot" WITH activity) SAME (device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:12

S35	42	S34 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:12
S36	6	"8433624"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:23
S37	3	"20150264523"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:44
S38	6	"20130097163"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:46
S39	6	"20160037480"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:47
S40	5	"20090085873"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:22
S41	698	((activate OR activating) WITH device) SAME activity SAME (radio OR wireless)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:43
S42	6412	((activate OR activating) WITH device) SAME activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:44
S43	2990	((activate OR activating) WITH device) WITH activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:44
S44	18	((activate OR activating) WITH device) SAME (hot WITH activity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:45
S45	7	S44 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:45

EAST Search History (I nterference)

< This search history is empty>

6/ 5/ 2019 7:20:22 PM

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/055,488		Filing Date 08/06/2018		☐ To be Mailed		
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED - PART I										
FOR		(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE (\$)		FEE (\$)				
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A	N/A						
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A	N/A						
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A	N/A						
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 = *		x \$50 =						
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 = *		x \$230 =						
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL						
APPLICATION AS AMENDED - PART II										
AMENDMENT	09/10/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	x \$50 =		0		
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$230 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE		0		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =				
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE				
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE				
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/DELEACHES M YOUNG/				
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/055,488	CONFIRMATION No. 3233
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	August 6, 2018	
EXAMINER	:	WYCHE, MYRON	
TC/A.U.	:	2644	
DOCKET	:	11472-15-1_AMBZ-101US1	
TITLE	:	INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: September 10, 2019

Sir:

These remarks are filed in response to the non-final Office Action dated June 10, 2019.
Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 6 of this paper.

AMENDMENTS TO THE CLAIMS

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

Listing of Claims:

1. (Currently Amended) A system comprising:
a device among a plurality of devices distributed in an environment;
wherein the device is configured as a controller ~~on an ad hoc basis~~, wherein the controller performs operations comprising:
selecting a subset of devices from among the plurality of devices for acquiring sensor data;
receiving information based on the sensor data acquired by the selected subset of devices ~~by using a mobile ad hoc network~~;
determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and
adjusting a manner in which the subset of devices operate based on the characteristic of the environment, a context associated with the characteristic of the environment, and the information.
2. (Original) The system of claim 1, wherein the operations further comprise configuring the subset of devices based on a triggering event.
3. (Original) The system of claim 1, wherein the operations further comprise determining a location of the at least one device of the subset of devices.
4. (Original) The system of claim 1, wherein the operations further comprise selecting the subset of devices based on a predetermined characteristic of the environment.

5. (Original) The system of claim 1, wherein the operations further comprise determining whether the subset of devices should be adjusted based on the characteristic of the environment.
6. (Original) The system of claim 1, wherein the operations further comprise adjusting a configuration of the subset of devices based on the characteristic of the environment.
7. (Original) The system of claim 1, wherein the operations further comprise adjusting a selection of the subset of devices based on the characteristic of the environment.
8. (Original) The system of claim 1, wherein the operations further comprise detecting a keyword in the information, and wherein the operations further comprise activating a sensor based on the keyword to confirm an event associated with the keyword.
9. (Original) The system of claim 1, wherein the operations further comprise determining a hot spot of activity based on the information, and wherein the operations further comprise activating a device in a vicinity of the hot spot to obtain further information associated with the hot spot.
10. (Original) The system of claim 1, wherein the operations further comprise generating an alert based on the information, the characteristic of the environment, or a combination thereof.
11. (Original) The system of claim 1, wherein the operations further comprise detecting a track of an audio source in the environment.
12. (Original) The system of claim 1, wherein the operations further comprise tracking activity of a user of at least one of the plurality of devices.
13. (Currently Amended) A method, comprising:

selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment, wherein the selecting is performed by utilizing a processor of a controller of at least one device from among the plurality of devices; receiving information based on the sensor data acquired by the selected subset of devices ~~by using a mobile ad hoc network~~;

determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and adjusting a manner in which the subset of devices operate based on the characteristic of the environment, a context associated with the characteristic of the environment, and the information.

14. (Original) The method of claim 13, further comprising determining a position of each device of the plurality of devices.

15. (Original) The method of claim 13, further comprising detecting a non-speech acoustic event based on the information, the characteristic of the environment, or a combination thereof.

16. (Original) The method of claim 13, further comprising detecting an event based on the information, the characteristic of the environment, or a combination thereof, and further comprising activating at least one device of the plurality of devices in a vicinity of the event.

17. (Original) The method of claim 13, further comprising predicting a sequence of events, a set of events, or a combination thereof, based on the information, the characteristic of the environment, or a combination thereof.

18. (Original) The method of claim 13, further comprising determining, based on a keyword detected in the information, a topic associated with the sensor data.

19. (Original) The method of claim 18, further comprising assessing a topic of interest for a user based on the topic.

20. (Currently Amended) A computer-readable medium comprising instructions, which, when loaded and executed by a processor, cause the processor to perform operations, the operations comprising:

selecting a subset of devices from among a plurality of devices for acquiring sensor data, wherein the subset of devices are in an environment;

receiving information based on the sensor data acquired by the selected subset of devices ~~by using a mobile ad hoc network;~~

determining a characteristic of the environment based on aggregating the information, wherein the environment is proximate to at least one device in the subset of devices; and

modifying a manner in which the subset of devices operate based on the characteristic of the environment, a context associated with the characteristic of the environment, and the information.

REMARKS

The foregoing amendments and the following remarks are made in response to the non-final Office Action (hereinafter "the Office Action") dated June 10, 2019. No fees are believed to be due, however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 50-0951.

At the time of the Office Action, the Examiner noted that claims 1-20 were pending. The Examiner rejected claims 1-20 under 35 U.S.C. § 103 as discussed in further detail below. Claims 1, 13, and 20 have been amended. Support for the amendments may be found in at least paragraphs [0065]-[0071] of the Pending Application.

In view of the arguments set forth below, claims 1-20 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

I. Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1-8, 10-15 and 17-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2009/0085873 to Betts et al. (hereinafter *Betts*) in view of U.S. Patent Publication No. 2010/00316033 to Atwal and "A Survey of Mobile Phone Sensing" to Lane et al (hereinafter *Lane*). In addition, claims 9 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Betts* in view of *Atwal*, *Lane*, and U.S. Patent Publication No. 2011/0280170 to Bowser et al. (hereinafter *Bowser*). In particular, the Examiner stated that *Betts* discloses several of the claim recitations recited in claim 1, but admitted that *Betts* fails to disclose several of the remaining claim recitations. Instead, the Examiner relied upon *Atwal* and *Lane* and stated that *Atwal* and *Lane* disclose the claim recitations that the Examiner stated that *Betts* fails to disclose.

In particular, *Lane*, alone or in combination with *Atwal*, and *Lane*, fails to disclose "adjusting a manner in which the subset of devices operate based on the characteristic of the environment, a context associated with the characteristic of the environment, and the information," as claimed in amended claim 1. (emphasis added). Instead, the cited portions of *Lane* merely state:

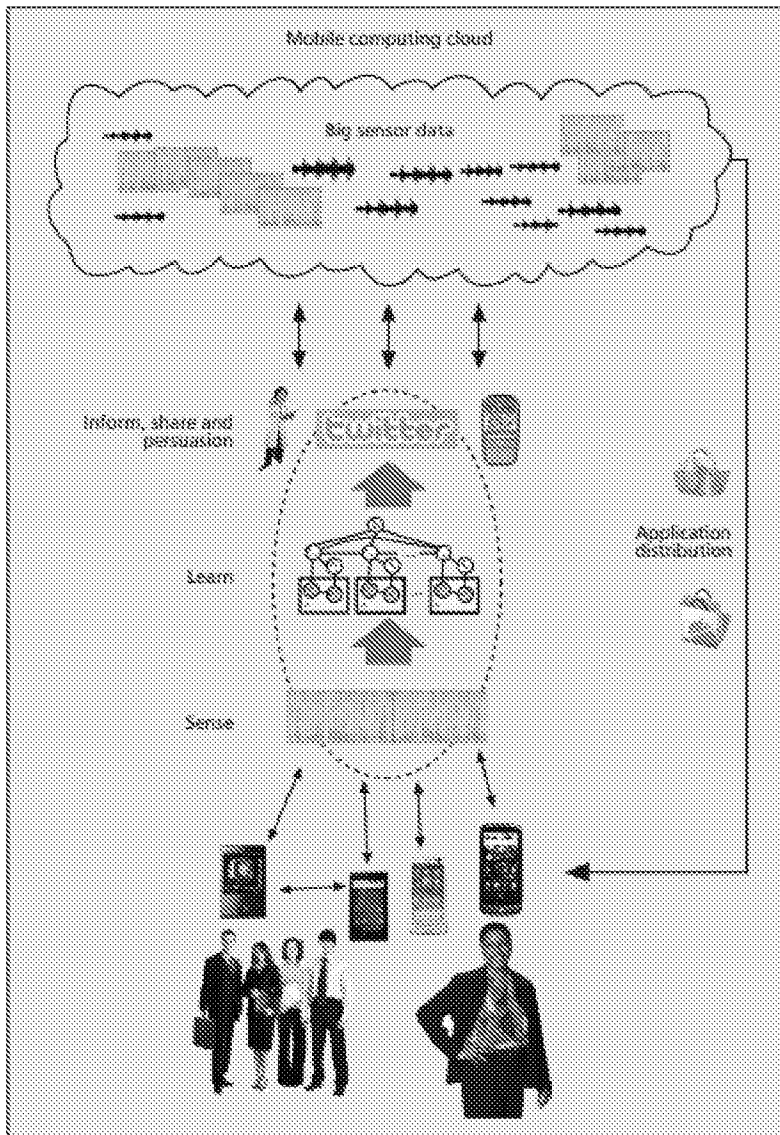


Figure 3. Mobile phone sensing architecture.

See Figure 3 of *Lane*

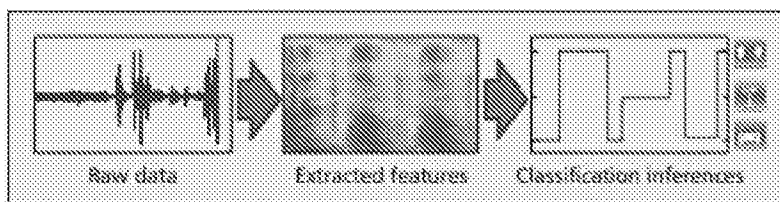


Figure 4. Raw audio data captured from mobile phones is transformed into features allowing learning algorithms to identify classes of behavior (e.g., driving, in conversation, making coffee) occurring in a stream of sensor data, for example, by SoundSense [11].

See Figure 4 of *Lane*

In other words, the cited portions of *Lane* merely discuss mobile phones and their accompanying sensors, such as light sensors, proximity sensors, GPS, gyroscopes, accelerometers, etc. See *Lane*, page 141. Figure 3 of *Lane* merely illustrates a mobile phone sensing architecture that includes individual mobile phones that collect raw sensor data from sensors embedded in the mobile phones. Figure 4 of *Lane* indicates that that raw audio data is captured from the mobile phones and is transformed into features that allow learning algorithms to identify classes of behavior occurring in a stream of sensor data. Notably, however, *Lane* does not actually adjust a manner in which a subset of devices operate specifically based on a characteristic of an environment and also a context associated with the characteristic of the environment. Instead, the cited portions of *Lane* merely indicate that *Lane* uses learning algorithms to identify classes of behavior, and does not adjust the operation of a subset of devices as claimed. Additionally, the cited portions of *Atwal* and *Betts* fail to make up for the deficiencies of *Lane* in this regard. Thus, *Lane*, alone or in combination with *Atwal*, and *Lane*, fails to disclose "adjusting a manner in which the subset of devices operate based on the characteristic of the environment, a context associated with the characteristic of the environment, and the information," as claimed in amended claim 1.

Claims 13 and 20, which include similar features as found in claim 1, were also rejected by the Examiner for similar reasons. The arguments set forth above for the patentability of claim 1 are incorporated herein and applied to the rejections of claims 13 and 20. Thus, *Betts*, alone or in combination with *Atwal* and *Lane*, fails to disclose the features as recited in amended claims 1, 13, and 20, and those claims depending therefrom. Therefore, for at least these reasons, independent claims 1, 13, and 20, and those claims depending therefrom, are allowable, and the Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 103 and issue a Notice of Allowance.

II. Conclusion

For at least the reasons given above, claims 1-20 are allowable, and the Examiner is respectfully requested to withdraw all rejections. Should the Examiner believe that anything further is necessary, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,

AKERMAN LLP

Date: September 10, 2019

/Mammen P. Zachariah, Jr./
Mammen P. Zachariah, Jr.
Reg. No. 67,376
Peter A. Chiabotti
Reg. No. 54,603
P.O. Box 3188
West Palm Beach, FL 33402-3188

Electronic Acknowledgement Receipt	
EFS ID:	37122796
Application Number:	16055488
International Application Number:	
Confirmation Number:	3233
Title of Invention:	Information Processing Using A Population Of Data Acquisition Devices
First Named Inventor/Applicant Name:	Steven W. Goldstein
Customer Number:	150139
Filer:	Mammen P. Zachariah Jr./Stacey Piesco
Filer Authorized By:	Mammen P. Zachariah Jr.
Attorney Docket Number:	11472-15-1_AMBZ-101US1
Receipt Date:	10-SEP-2019
Filing Date:	06-AUG-2018
Time Stamp:	17:09:04
Application Type:	Utility under 35 USC 111(a)

Payment information:					
Submitted with Payment			no		
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		11472-15-1_ROA.PDF	234813	yes	9
			71b7bd3dfbae2c1686858f72463d0f8c7cd47cb0		

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Amendment/Req. Reconsideration-After Non-Final Reject	1	1	
Claims	2	5	
Applicant Arguments/Remarks Made in an Amendment	6	9	

Warnings:

Information:

Total Files Size (in bytes):	234813
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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



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NOTICE OF ALLOWANCE AND FEE(S) DUE

150139 7590 11/06/2019
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER	
WYCHE, MYRON	
ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 11/06/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1	3233

TITLE OF INVENTION: INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	02/06/2020

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

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

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

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

150139 7590 11/06/2019
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

Certificate of Mailing or Transmission

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

_____ (Typed or printed name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1	3233

TITLE OF INVENTION: INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	02/06/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
WYCHE, MYRON	2644	455-456100

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

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

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

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

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

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

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

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

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/055,488	08/06/2018	Steven W. Goldstein	11472-15-1_AMBZ-101US1	3233
150139	7590	11/06/2019	EXAMINER	
Akerman LLP			WYCHE, MYRON	
777 South Flagler Drive			ART UNIT	
Suite 1100 West Tower			PAPER NUMBER	
West Palm Beach, FL 33401			2644	

DATE MAILED: 11/06/2019

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

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

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

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

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 16/055,488	Applicant(s) Goldstein, Steven W.	
	Examiner MYRON K WYCHE	Art Unit 2644	AIA (FITF) Status No

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

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

1. ☒ This communication is responsive to Amendment filed 9/10/19.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☒ The allowed claim(s) is/are 1-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

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

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

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

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

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

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

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	5. ☒ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
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/Myron Wyche/ 10/28/19
Primary Examiner AU2644

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

Claims 1-20 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MYRON K WYCHE whose telephone number is (571)272-3390. The examiner can normally be reached on 7:30 am - 3:30 pm.

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, Kathy Wang-Hurst can be reached on 571-270-5371. 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.

/Myron Wyche/
Primary Examiner

10/28/19
AU2644

<i>Search Notes</i> 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

CPC - Searched*		
Symbol	Date	Examiner
H04W 64/00	06/05/2019	MW
H04W 84/02	06/05/2019	MW
H04J 3/26	06/05/2019	MW
Updated search for H04W 64/00	10/28/2019	MW
Updated search for H04W 84/02	10/28/2019	MW
Updated search for H04J 3/26	10/28/2019	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor NAME Search	06/05/2019	MW
WORD Search	06/05/2019	MW
Updated WORD Search	10/28/2019	MW

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<i>Search Notes</i> 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
H04W 64/00		10/28/2019	MW
H04W 84/02		10/28/2019	MW
H04J 3/26		10/28/2019	MW

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<i>Index of Claims</i> 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	06/05/2019	10/28/2019							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
4	4	✓	=							
5	5	✓	=							
6	6	✓	=							
7	7	✓	=							
8	8	✓	=							
9	9	✓	=							
10	10	✓	=							
11	11	✓	=							
12	12	✓	=							
13	13	✓	=							
14	14	✓	=							
15	15	✓	=							
16	16	✓	=							
17	17	✓	=							
18	18	✓	=							
19	19	✓	=							
20	20	✓	=							

Issue Classification 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

CPC						
Symbol					Type	Version
H04W	/	64	/	00	F	2013-01-01
G16H	/	40	/	63	I	2018-01-01
G16H	/	50	/	80	I	2018-01-01
G06F	/	19	/	00	I	2013-01-01
G06F	/	11	/	3013	A	2013-01-01
G06F	/	11	/	3058	A	2013-01-01
H04M	/	1	/	72522	A	2013-01-01
H04M	/	2250	/	12	A	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 20	
/Myron Wyche/ (Primary Examiner) _____ (Date) 28 October 2019		O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04W	/	64	/ 00
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/Myron Wyche/	28 October 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/055,488	Applicant(s)/Patent Under Reexamination Goldstein, Steven W.
	Examiner MYRON K WYCHE	Art Unit 2644

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

NONE	Total Claims Allowed:	
(Assistant Examiner)	(Date)	20
/Myron Wyche/	28 October 2019	O.G. Print Claim(s)
(Primary Examiner)	(Date)	O.G. Print Figure
		1
		1

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3993	Ho4W 64/00	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:12
L2	2011612	H04W 64/00	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:12
L3	2011520	H04W 84/02	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:12
L4	461657	H04J 3/26	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:13
L8	987275	I2 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:15
L9	987282	I3 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:15
L10	365364	I4 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:15
L14	1	I8 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:18
L15	1	I9 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:18
L16	0	I10 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:18

L20	1	I8 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:20
L21	1	I9 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:20
L22	0	I10 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:20
L26	0	I8 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:22
L27	0	I9 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:22
L28	0	I10 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:22
L32	0	I8 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:23
L33	0	I9 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:23
L34	0	I10 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:23
L39	0	I8 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:26
L40	0	I9 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:26
L41	0	I10 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:26

L45	0	I8 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:31
L46	0	I9 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:31
L47	0	I10 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/10/28 14:31
S1	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:32
S2	202	Goldstein-Steven-W.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:33
S3	3	"20080300817"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/12 12:36
S4	2	"20100316033"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:15
S5	6	"20100040079"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:16
S6	14	"hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:46
S7	5	S6 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:47
S8	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:51
S9	1	S8 AND "hot spot"	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/04 18:51

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S10	714	"hot spot" WITH activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:52
S11	450	S10 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:52
S12	9	"hot spot" WITH activity WITH vicinity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:53
S13	7	S12 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:53
S14	9	sniffer WITH "hot spot"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:58
S15	8	S14 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 18:58
S16	0	("hot spot" WITH activity) SAME vicinity SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:00
S17	0	("hot spot" WITH activity) SAME proximate SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:01
S18	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:01
S19	0	("hot spot" SAME activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:02
S20	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:02
S21	0	("hot spot" WITH activity) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/04 19:03

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S22	59	("hot spot") SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:03
S23	2	("hot spot") SAME (vicinity OR proximate) SAME (activate WITH device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:03
S24	27	S22 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:04
S25	0	"hot spot of" ADJ activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S26	63	"hot spot" ADJ activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S27	0	("hot spot" ADJ activity) SAME proximity SAME device SAME activate	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:09
S28	0	("hot spot" ADJ activity) SAME proximity SAME device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S29	3	("hot spot" ADJ activity) SAME device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S30	0	S29 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:10
S31	1	("hot spot" ADJ activity) SAME (activate OR activating)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:11
S32	3	("hot spot" ADJ activity) SAME (device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:11
S33	0	("hot spot" ADJ activity) SAME (wireless)	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/04 19:11

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S34	100	("hot spot" WITH activity) SAME (device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:12
S35	42	S34 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:12
S36	6	"8433624"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/04 19:23
S37	3	"20150264523"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:44
S38	6	"20130097163"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:46
S39	6	"20160037480"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 09:47
S40	5	"20090085873"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:22
S41	698	((activate OR activating) WITH device) SAME activity SAME (radio OR wireless)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:43
S42	6412	((activate OR activating) WITH device) SAME activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:44
S43	2990	((activate OR activating) WITH device) WITH activity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:44
S44	18	((activate OR activating) WITH device) SAME (hot WITH activity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 17:45
S45	7	S44 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/05 17:45

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S46	1922726	H04W 64/00	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:06
S47	1922663	H04W 84/02	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
S48	454375	H04J 3/26	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
S49	979103	S46 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
S50	979110	S47 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:07
S51	364323	S48 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:08
S52	7	"16055488"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:12
S53	207	Goldstein-Steven-W.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:13
S54	133	S53 AND @AD < "20111230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:13
S55	1	((S49 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:15
S56	1	S50 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:15
S57	0	S51 And ("hot spot" SAME ((activate OR activating) WITH	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/05 19:15

		device) SAME (vicinity OR location))	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S58	1	S49 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
S59	1	S50 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
S60	0	S51 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:16
S61	0	S49 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
S62	0	S50 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
S63	0	S51 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:17
S64	0	S49 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
S65	0	S50 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
S66	0	S51 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:18
S67	0	S49 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:19
S68	0	S50 AND ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/06/05 19:19
S69	0	S51 AND ("sensor data" SAME (communication OR	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/06/05 19:19

		communicate) SAME controller SAME characteristic SAME position)	FPRS; EPO; JPO; DERWENT; IBM_TDB			
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EAST Search History (I nterference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	288750	H04W 64/00	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:13
L6	288655	H04W 84/02	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:14
L7	61622	H04J 3/26	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:14
L11	67692	I5 AND @AD < "20111230"	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:15
L12	67688	I6 AND @AD < "20111230"	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:16
L13	37174	I7 AND @AD < "20111230"	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:16
L17	0	I11 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:18
L18	0	I12 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:18
L19	0	I13 And ("hot spot" SAME ((activate OR activating) WITH device) SAME (vicinity OR location))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:18
L23	1	I11 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:20
L24	1	I12 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:20
L25	0	I13 AND (((activate OR activating) WITH device) SAME (hot WITH activity))	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:20
L29	0	I11 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:22
L30	0	I12 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:22
L31	0	I13 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:22
L35	0	I11 And ("sensor data" SAME (communication OR communicate) SAME	US-PGPUB;	OR	OFF	2019/10/28 14:25

		controller SAME characteristic)	USPAT			
L36	0	I11 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:25
L37	0	I12 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:25
L38	0	I13 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:25
L42	0	I11 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:26
L43	0	I12 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:26
L44	0	I13 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:27
L48	0	I11 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:32
L49	0	I12 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:32
L50	0	I13 And ("sensor data" SAME (communication OR communicate) SAME controller SAME characteristic SAME position SAME context SAME environment)	US-PGPUB; USPAT	OR	OFF	2019/10/28 14:32

10/ 28/ 2019 2:33:10 PM
C:\ Users\ mwyche\ Documents\ EAST\ Workspaces\ 16_055488_10_28_19.wsp

FEE ADDRESS INDICATION FORM

Application Number	16055488	Art Unit	2644
Filing Date	06-Aug-2018	Examiner Name	MYRON WYCHE
First Name Inventor	Steven Goldstein	Attorney Doc. Number	11472-15-1_AMBZ-101US1

INSTRUCTIONS: In order for the fee address identified on this form to be effective, the issue fee must have been paid for the application listed on this form. Only an address represented by a customer number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application. For more information on customer numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

Please recognize as the Fee Address under the provisions of 37 CFR 1.363 the address associated with:

Customer Number:

154598
Staton Techiya, LLC
John Keady
16193 Bridlewood Circle

Delray Beach FL 33445
UNITED STATES
(571) 606-1291
JP.keady@techiya.co

Signature :

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application.

Signature	/Peter A. Chiabotti/	Date	02-06-2020
Name	Peter Allen Chiabotti	Registration Number	54603

Electronic Patent Application Fee Transmittal

Application Number:	16055488			
Filing Date:	06-Aug-2018			
Title of Invention:	INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES			
First Named Inventor/Applicant Name:	Steven W. Goldstein			
Filer:	Peter Allen Chiabotti/Angela Martin			
Attorney Docket Number:	11472-15-1_AMBZ-101US1			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	500	500
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt

EFS ID:	38515389
Application Number:	16055488
International Application Number:	
Confirmation Number:	3233
Title of Invention:	INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES
First Named Inventor/Applicant Name:	Steven W. Goldstein
Customer Number:	150139
Filer:	Peter Allen Chiabotti/Angela Martin
Filer Authorized By:	Peter Allen Chiabotti
Attorney Docket Number:	11472-15-1_AMBZ-101US1
Receipt Date:	06-FEB-2020
Filing Date:	06-AUG-2018
Time Stamp:	15:56:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 500
RAM confirmation Number	E202026F56392666
Deposit Account	500951
Authorized User	Angela Martin

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

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	46454	no	2
			a5163c22d81f2c2bfa679b7a65482fca059d57f3		
Warnings:					
Information:					
2	Maintenance Fee Address Change	web85feeaddress.pdf	33025	no	1
			128c63da23f0b962387a2417b933cd52232d23c6		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32113	no	2
			0fb3fe48077fee6192b3c4ef6ccc163f6b5ef686		
Warnings:					
Information:					
Total Files Size (in bytes):			111592		
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Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
16055488	06-Aug-2018	Steven Goldstein	11472-15-1_AMBZ-101US1	3233

TITLE OF INVENTION :

INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2644	456100	MYRON WYCHE
Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
\$500	\$0	\$500	06-Feb-2020	\$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
150139 Akerman LLP 777 South Flagler Drive Suite 1100 West Tower West Palm Beach FL 33401 UNITED STATES 5616535000 ip@akerman.com	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☒ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

- ☐ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.
- ☒ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

☒ Issue Fee

☐ I authorize USPTO to apply my previously paid issue fee to the current fees due

☐ Publication Fee

☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____

☐ Advance Order - # of copies _____

☒ If in **addition** to the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number 500951.
The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

1. Akerman LLP
2. Peter A. Chiabotti
3. Mammen (Roy) P. Zachariah, Jr.

5.Assignee Name(s) and Residence Data To Be Printed

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

Name	City	State	Country	Category
Staton Techiya, LLC	Delray Beach	FLORIDA	united states	other

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Peter A. Chiabotti/	Date	02-06-2020
Name	Peter Allen Chiabotti	Registration Number	54603



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/055,488	03/24/2020	10602474	11472-15-1_AMBZ-101US1	3233

150139 7590 03/04/2020
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

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

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

Steven W. Goldstein, Delray Beach, FL;
Staton Techiya, LLC, Delray Beach, FL;

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**TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE
REGISTERED PRACTITIONERS**

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	16/055,488
Filing Date	08/06/2018
First Named Inventor	Steven W. Goldstein
Title	INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES
Art Unit	2644
Examiner Name	MYRON WYCHE
Attorney Docket Number	11472-15-1_AMBZ-101US1

SIGNATURE of Applicant or Patent Practitioner

Signature	/Peter A. Chiabotti/	Date (Optional)	08/21/2024
Name	Peter A. Chiabotti	Registration Number	54603
Title (if Applicant is a juristic entity)	Attorney of Record		
Applicant Name (if Applicant is a juristic entity)	ST FamTech, LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of 1 forms are submitted.

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UNITED STATES
PATENT AND TRADEMARK OFFICEP.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
16/055,488	08/21/2024 02:01:38 PM Z ET	11472-15-1_AMBZ-101US1

Title of Invention

INFORMATION PROCESSING USING A POPULATION OF DATA ACQUISITION DEVICES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	10602474
CONFIRMATION #	3233	FILED BY	EDWARD MERCIER
PATENT CENTER #	66871488	FILING DATE	08/06/2018
CUSTOMER #	150139	FIRST NAMED INVENTOR	Steven W. Goldstein
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Peter Chiabotti

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
16055488_POA_TML_3233.pdf	1	Transmittal Letter	361 KB
ST_FamTech_LLC_POA.pdf	2	Power of Attorney	638 KB

Warning: The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
16055488_POA_TML_3233.pdf	76FD2611722CFE13D445CFA44DB185A5BA272490F147A4F17 2D52DD4D4825C6FD1145178F3C97ECD6E4F79C57C12C6137 262C34FA1FFBCA665FFB6B9A1519C47

ST_FamTech_LLC_POA.pdf

A6B1850523FA4EC9B059E238D4FDD5983F14DA1E59C3045D3
5C03C9484ABEDB200935F07BDE425C57D031A17A672FA87D
49358A4828A22090619E76470C93384

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:

☒

Practitioners associated with Customer Number:

150139

OR

☐

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

Name	Registration Number

Name	Registration Number

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

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

☒

The address associated with Customer Number:

150139

OR

☐

Firm or individual name

Address

City

State

Zip

Country

Telephone

Email

Assignee name and address:

ST FamTech, LLC
9501 Jagged Creek Ct, Delray Beach, Florida 33446

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

SIGNATURE of Assignee of Record

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

Signature

DocuSigned by:

Date 7/26/2024

Name John Patrick Keady

Dr. John Patrick Keady

Telephone

Title Chief Technical Officer and Assistant General Counsel Intellectual Property

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 18 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

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