IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR U.S. LETTERS PATENT

Title:

SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

Inventor:

Sascha Simon

[0001] The present application claims priority from: U.S. Provisional Application No. 61/740,814 filed December 21, 2012; U.S. Provisional Application No. 61/740,831 filed December 21, 2012; U.S. Provisional Application No. 61/740,851 filed December 21, 2012; and U.S. Provisional Application No. 61/745,677 filed December 24, 2012, the entire disclosures of which are incorporated herein by reference. The present application is a continuation-in-part of U.S. Application No. 14/072,231 filed November 5, 2013, and is a continuation-in-part of U.S. Application No. 14/095,156 filed December 3, 2013, the entire disclosures of which are incorporated herein by reference.

BACKGROUND

[0002] Vehicle telematics is the technology of sending, receiving and storing information to and from vehicles and is generally present (at least to a limited extent) in the automotive marketplace today. For example, both General Motors (through their OnStar offering) and Mercedes Benz (through their Tele-Aid and more recent mbrace system offering) have long offered connected-vehicle functionality to their customers. Both of these offerings make use of the data available on a vehicle's CAN bus, which is specified in the OBD-II vehicle diagnostics standard. For example, the deployment of an airbag, which suggests that the vehicle has been involved in a crash, may be detected by monitoring the CAN bus. In this event, a digital wireless telephony module that is embedded in the vehicle and connected to the vehicle's audio system (i.e., having voice connectivity) can initiate a phone call to a telematics service provider (TSP) to "report" the crash. Vehicle location may also be provided to the TSP using the vehicle's GPS functionality. Once the call is established, the TSP representative may attempt to communicate with the vehicle driver, using the vehicle's audio system, to assess the severity of the situation. Assistance may thus be dispatched by the TSP representative to the vehicle as appropriate.

[0003] Historically, these services were focused entirely on driver and passenger safety. These types of services have expanded since their initial roll-out, however, and now offer additional features to the driver, such as concierge services. The services, however, remain mainly focused on voice based driver to call center communication, with data services being only slowly introduced, hindered by low bandwidth communication modules, high cost and only partial availability on some model lines.

[0004] As a result, while generally functional, vehicle telematics services have experienced only limited commercial acceptance in the marketplace. There are several reasons for this. In addition to low speeds and bandwidth, most vehicle drivers (perhaps excluding the premium automotive market niche) are reluctant to pay extra for vehicle telematics services, either in the form of an upfront payment (i.e., more expensive vehicle) or a recurring (monthly/yearly) service fee. Moreover, from the vehicle manufacturer's perspective, the services require additional hardware to be embedded into the vehicle, resulting in extra costs on the order of $250 to $350 or more per vehicle which cannot be recouped. Thus, manufacturers have been slow to fully commit to or invest in the provision of vehicle telematics equipment in all vehicles.

[0005] There have been rudimentary attempts in the past to determine when a smartphone is in a moving vehicle. Wireless service provider AT&T, Sprint and Verizon, for example, offer a smartphone application that reacts in a specific manner to incoming text messages and voice calls when a phone is in what AT&T calls DriveMode™. With the AT&T DriveMode application, a wireless telephone is considered to be in "drive mode" when one of two conditions are met. First, the smartphone operator can manually turn on the application, i.e., she "tells" the application to enter drive mode. Alternatively, when the DriveMode application is in automatic on/off mode and the smartphone GPS sensor senses that the smartphone is travelling at greater than 25 miles per hour, the GPS sensor so informs the DriveMode application, the DriveMode application concludes that the smartphone is in a moving vehicle, and drive mode is entered.

[0006] Both of these paths to engaging the AT&T DriveMode application -- the "manual" approach to entering drive mode and the "automatic" approach to entering drive mode -- are problematic. First, if the smartphone operator forgets or simply chooses not to launch the DriveMode application prior to driving the vehicle when the application is in manual mode then the application will not launch. Second, in automatic on/off mode AT&T's use of only the GPS sensor to determine when a smartphone is in a moving vehicle is problematic for a number of reasons. First, the speed threshold of the application is arbitrary, meaning that drive mode will not be detected/engaged at less than 25 mph. If the vehicle is stopped in traffic or at a traffic signal, for example, then the DriveMode application may inadvertently terminate. Second, and perhaps more importantly, AT&T's DriveMode application requires that the smartphone's GPS functionality be turned on at all times. Because the use of a

smartphone's GPS sensor is extremely demanding to the battery resources of a smartphone, this requirement severely undermines the usefulness of AT&T's application. Thirdly this method does not differentiate between the type of vehicle that the phone is in, e.g. a bus, a taxi or a train and therefore allows no correlation between the owner of the phone and her driving situation. For the classic embedded telematics devices to be replaces by smartphones it is important to correlate the driver and smartphone owner with her personal vehicle. Only then the smartphone can truly take the functional role of an embedded telematics device in a vehicle.

[0007] The main justification premise for a connected embedded device is the ability to not only detect an accident, but to autonomously call for help to either a privately operated emergency response center or 911. In fact, this safety function has been the main driver behind the last fifteen years of installing embedded communication devices in vehicles through major vehicle manufacturers. What is needed is a delivery of such a safety functionality without the need for any embedded device, thus allowing millions of drivers the safety benefit of automatic crash notification without the need for an expensive embedded device and a costly subscription. What is needed is an improved method and apparatus of determining, via a communication device, whether a vehicle has crashed.

SUMMARY

[0008] The present invention provides an improved method and apparatus of determining, via a communication device, whether a vehicle has crashed.

[0009] Various embodiments described herein are drawn to a device for use with a vehicle. The device includes a mode-determining component, a first detecting component and a second detecting component. The mode-determining component can generate an in-vehicle signal. The first detecting component can detect a first parameter and can generate a first detector signal based on the first detected parameter. The second detecting component can detect a second parameter and can generate a second detector signal based on the second detected parameter. The mode-determining component can further generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

BRIEF SUMMARY OF THE DRAWINGS

[0010] The accompanying drawings, which are incorporated in and form a part of the specification, illustrate an exemplary embodiment of the present invention and, together with the description, serve to explain the principles of the invention. In the drawings:

[0011] FIGs. 1A-B are planar views of an interior of a vehicle at a times t_0 and t_1, respectively;

[0012] FIG. 2 illustrates an example device for detecting a crash in accordance with aspects of the present invention;

[0013] FIG. 3 illustrates an example method of detecting a vehicle crash in accordance with aspects of the present invention;

[0014] FIG. 4 illustrates an example parameter-detecting component in accordance with aspects of the present invention; and

[0015] FIG. 5 illustrates a plurality of example functions corresponding to parameters detected by an example device in accordance with aspects of the present invention.

DETAILED DESCRIPTION

[0016] Aspects of the present invention are drawn to a system and method for detecting a vehicle crash.

[0017] As used herein, the term "smartphone" includes cellular and/or satellite radiotelephone(s) with or without a display (text/graphical); Personal Communications System (PCS) terminal(s) that may combine a radiotelephone with data processing, facsimile and/or data communications capabilities; Personal Digital Assistant(s) (PDA) or other devices that can include a radio frequency transceiver and a pager, Internet/Intranet access, Web browser, organizer, calendar and/or a global positioning system (GPS) receiver; and/or conventional laptop (notebook) and/or palmtop (netbook) computer(s), tablet(s), or other appliance(s), which include a radio frequency transceiver. As used herein, the term "smartphone " also includes any other radiating user device that may have time-varying or fixed geographic coordinates and/or may be portable, transportable, installed in a vehicle (aeronautical, maritime, or land-based) and/or situated and/or configured to operate locally and/or in a distributed fashion over one or more location(s).

[0018] Some conventional communication devices may detect a vehicle crash, and then switch to operate in a "crash mode." While in a crash mode, some functionalities of the communication device may be activated whereas other functionalities may be deactivated. For example, in a crash mode, a communication device may automatically contact emergency services and provide geodetic location information such that the emergency services can respond to the vehicle crash.

[0019] Conventional communication devices may detect a vehicle crash by way of monitoring a single parameter. In one example of a conventional communication device, a vehicle crash may be detected by monitoring deceleration. If a rapid deceleration is detected, and which corresponds to a previously known deceleration or family of decelerations associated with a vehicle crashing, the communication device may determine that a vehicle has been in a crash. However, such a conventional system may detect a vehicle crash when there in fact has not been a vehicle crash, i.e., results in a false – positive. This situation may occur for example if the communication device itself is dropped by the user, and the rapid deceleration of the communication device hitting the ground emulates a rapid deceleration associated with a vehicle crash.

[0020] In another example of a conventional communication device, a vehicle crash may be detected by monitoring vibrations of the chassis of the vehicle associated with deployment of an airbag. If a vibration is detected, and which corresponds to a previously known vibration or family of vibrations associated with the deployment of an airbag in a vehicle, the communication device may determine that a vehicle has been in a crash. However, such a conventional system may detect a vehicle crash when there in fact is not been vehicle crash, i.e., results in a false-positive. This situation may occur for example if the communication device is near some other event, that is not a vehicle crash, but that emulates the vibrations associated with the deployment of an airbag.

[0021] In another example of a conventional communication device, a vehicle crash may be detected by monitoring an on-board diagnostic (OBD) system. For example, the OBD may monitor whether the airbag has been deployed, or whether there has been a rapid deceleration followed by a total stoppage (zero measured velocity). However, if the OBD is not connected directly connected to a communication device when the vehicle crashes, then

information relating to the vehicle crash as detected by the OBD cannot be easily and quickly relayed outside of the vehicle, e.g. to emergency services.

[0022] Aspects of the present invention reduce the likelihood of obtaining a false – positive determination of a vehicle crash without connecting to an OBD. In accordance with aspects of the present invention a vehicle crash may be identified by a communication device, e.g., a smartphone, within the vehicle at the time of the vehicle crash. First, the communication device determines whether it is located in a vehicle. This first determination will greatly decrease the number of false-positive vehicle crash detections. Then the communication device will detect at least two parameters associated with a vehicle crash. If, once in the vehicle, the communication device detects values of at least two parameters that correspond to known values of known parameters associated with a vehicle crash, it may determine that the vehicle has been in a crash. The detection of at least two parameters further decreases the number of false-positive vehicle crash detections.

[0023] These aspects will now be described in more detail with reference to **FIGs. 1A-4.**

[0024] **FIG. 1A** is a planar view of an interior of a vehicle **102** at a time t_0. A position **104** represents the location of a smartphone within vehicle **102**. A superposition of magnetic fields at position **104** is represented by field lines **106**. A superposition of sound at position **104** is represented by lines **108**. Again, in accordance with aspects of the present invention, parameters such as magnetic fields at position **104** and sound at position **104** may be detected by a communication device of person in vehicle **102** in order to detect a crash of vehicle **102**. The mode of operation of the communication device may be set to vehicle mode, by any known method.

[0025] For purposes of discussion, consider the situation at some point in time t_1 after time t_0, wherein vehicle **102** crashes. This will now be described with further reference to **FIG. 1B**.

[0026] **FIG. 1B** is a planar view of an interior of a vehicle **102** at a time t_1. A position **104** represents the location of a smartphone within vehicle **102**. In this figure, an airbag **110** has deployed as a result of vehicle **102** crashing. Deployment of airbag **110** generates a specific magnetic field as represented by field lines **112**. Further, deployment of airbag **110** generates a shockwave (specific vibrations) that travels throughout the chassis of vehicle **102** as represented by the wavy lines, a sample of which is indicated as wavy lines **114**. In

accordance with aspects of the present invention, a communication device may be able to detect the crash of vehicle **102** based on being in the vehicle mode and based on detecting two parameters, in this example vibrations and a magnetic field associated with deployment of airbag **110**.

[0027] An example system and method for detecting a vehicle crash in accordance with aspects of the present invention will now be described with additional reference to **FIGs. 2-4**.

[0028] **FIG. 2** illustrates an example device **202** in accordance with aspects of the present invention.

[0029] **FIG. 2** includes a device **202**, a database **204**, a field **206** and a network **208**. In this example embodiment, device **202** and database **204** are distinct elements. However, in some embodiments, device **202** and database **204** may be a unitary device as indicated by dotted line **210**.

[0030] Device **202** includes a field-detecting component **212**, an input component **214**, an accessing component **216**, a comparing component **218**, an identifying component **220**, a parameter-detecting component **222**, a communication component **224**, a verification component **226** and a controlling component **228**.

[0031] In this example, field-detecting component **212**, input component **214**, accessing component **216**, comparing component **218**, identifying component **220**, parameter-detecting component **222**, communication component **224**, verification component **226** and controlling component **228** are illustrated as individual devices. However, in some embodiments, at least two of field-detecting component **212**, input component **214**, accessing component **216**, comparing component **218**, identifying component **220**, parameter-detecting component **222**, communication component **224**, verification component **226** and controlling component **228** may be combined as a unitary device. Further, in some embodiments, at least one of field-detecting component **212**, input component **214**, accessing component **216**, comparing component **218**, identifying component **220**, parameter-detecting component **222**, communication component **224**, verification component **226** and controlling component **228** may be implemented as a computer having tangible computer-readable media for carrying or having computer-executable instructions or data structures stored thereon. Such tangible computer-readable media can be any available media that can be accessed by a general

purpose or special purpose computer. Non-limiting examples of tangible computer-readable media include physical storage and/or memory media such as RAM, ROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to carry or store desired program code means in the form of computer-executable instructions or data structures and which can be accessed by a general purpose or special purpose computer. For information transferred or provided over a network or another communications connection (either hardwired, wireless, or a combination of hardwired or wireless) to a computer, the computer may properly view the connection as a computer-readable medium. Thus, any such connection may be properly termed a computer-readable medium. Combinations of the above should also be included within the scope of computer-readable media.

[0032] Controlling component **228** is configured to communicate with: field-detecting component **212** via a communication line **230**; input component **214** via a communication line **232**; accessing component **216** via a communication line **234**; comparing component **218** via a communication line **236**; identifying component **220** via a communication line **238**; parameter-detecting component **222** via a communication line **240**; communication component **224** via a communication line **242**; and verification component **226** via a communication line **244**. Controlling component **228** is operable to control each of field-detecting component **212**, input component **214**, accessing component **216**, comparing component **218**, identifying component **220**, parameter-detecting component **222**, communication component **224** and verification component **226**.

[0033] Field-detecting component **212** is additionally configured to detect field **206**, to communicate with input component **214** via a communication line **246** and to communicate with comparing component **218** via a communication line **248**. Field-detecting component **212** may be any known device or system that is operable to detect a field, non-limiting examples of which include an electric field, a magnetic field, and electro-magnetic field and combinations thereof. In some non-limiting example embodiments, field-detecting component **212** may detect an amplitude of a field at an instant of time. In some non-limiting example embodiments, field-detecting component **212** may detect a field vector at an instant of time. In some non-limiting example embodiments, field-detecting component **212** may detect an amplitude of a field as a function over a period of time. In some non-limiting example embodiments, field-detecting component **212** may detect a field vector as a function

over a period of time. In some non-limiting example embodiments, field-detecting component **212** may detect a change in the amplitude of a field as a function over a period of time. In some non-limiting example embodiments, field-detecting component **212** may detect a change in a field vector as a function over a period of time. Field-detecting component **212** is additionally able to generate a field signal based on the detected field.

[0034] Input component **214** is additionally configured to communicate with database **204** via a communication line **250** and to communicate with verification component **226** via a communication line **252**. Input component **214** may be any known device or system that is operable to input data into database **204**. Non-limiting examples of input component **214** include a graphic user interface having a user interactive touch screen or keypad.

[0035] Accessing component **216** is additionally configured to communicate with database **204** via a communication line **254** and to communicate with comparing component **218** via a communication line **256**. Accessing component **216** may be any known device or system that access data from database **204**.

[0036] Comparing component **218** is additionally configured to communicate with identifying component **220** via a communication line **258**. Comparing component **218** may be any known device or system that is operable to compare two inputs.

[0037] Parameter-detecting component **222** is additionally configured to communicate with field-detecting component **212** via a communication line **260**. Parameter-detecting component **222** may be any known device or system that is operable to detect a parameter, non-limiting examples of which include velocity, acceleration, geodetic position, sound, temperature, vibrations, pressure, contents of surrounding atmosphere and combinations thereof. In some non-limiting example embodiments, parameter-detecting component **222** may detect an amplitude of a parameter at an instant of time. In some non-limiting example embodiments, parameter-detecting component **222** may detect a parameter vector at an instant of time. In some non-limiting example embodiments, parameter-detecting component **222** may detect an amplitude of a parameter as a function over a period of time. In some non-limiting example embodiments, parameter-detecting component **222** may detect a parameter vector as a function over a period of time. In some non-limiting example embodiments, parameter-detecting component **222** may detect a change in the amplitude of a parameter as a function over a period of time. In some non-limiting example embodiments, parameter-

detecting component **222** may detect a change in a parameter vector as a function over a period of time.

[0038] Communication component **224** is additionally configured to communicate with network **208** via a communication line **262**. Communication component **224** may be any known device or system that is operable to communicate with network **208**. Non-limiting examples of communication component include a wired and a wireless transmitter/receiver.

[0039] Verification component **226** may be any known device or system that is operable to provide a request for verification. Non-limiting examples of verification component **226** include a graphic user interface having a user interactive touch screen or keypad.

[0040] Communication lines **230**, **232**, **234**, **236**, **238**, **240**, **242**, **244**, **244**, **246**, **248**, **250**, **252**, **254**, **256**, **258**, **260** and **262** may be any known wired or wireless communication path or media by which one component may communicate with another component.

[0041] Database **204** may be any known device or system that is operable to receive, store, organize and provide (upon a request) data, wherein the "database" refers to the data itself and supporting data structures. Non-limiting examples of database **204** include a memory hard-drive and a semiconductor memory.

[0042] Network **208** may be any known linkage of two or more communication devices. Non-limiting examples of database **208** include a wide-area network, a local-area network and the Internet.

[0043] **FIG. 3** illustrates an example method **300** of detecting a vehicle crash in accordance with aspects of the present invention.

[0044] Method **300** starts (**S302**) and it is determined whether the device is in a vehicle (**S304**). For example, returning to **FIGs. 1A-2**, device **202** may determine that it is in vehicle **102** by any known method, non-limiting examples of which include detecting parameters and comparing the detected parameters with those associated with vehicle **102**. Non-limiting examples of known parameters include magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound,

temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

[0045] In an example embodiment, device **202** determines whether it is in a vehicle and as described in copending U.S. Application No. 14/095,156 filed December 3, 2013. For example, device **202** may detect at least one of many parameters. Database **204** may have stored therein known parameters values that are indicative of being in a vehicle. Comparing component may compare signals based on the detected parameters with a previously stored signature corresponding to a vehicle in database **204**. Identifying component **220** may generate an in-vehicle signal indicating that device is in a vehicle based on the comparison by comparing component **218**.

[0046] If it is determined that device **202** is not in a vehicle (N at **S304**), then method **300** may continue waiting for such a state (return to **S304**).

[0047] On the other hand, if it is determined that device **202** is in a vehicle (Y at **S304**), then a first parameter is detected (**S306**). For example, returning to **FIG. 2**, let the parameter be a field, wherein field-detecting component **212** detects field **206**. For purposes of discussion, let field **206** include a magnetic field generated by the deployment of an airbag in response to the vehicle being involved with a crash, as discussed above with reference to **FIG. 1B**. This is a non-limiting example, wherein the detected parameter may be any known detectable parameter, of which other non-limiting examples include magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any

of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

[0048] Returning to **FIG. 3**, after the first parameter is detected (**S306**), a second parameter is detected (**S308**). For example, returning to **FIG. 2**, controlling component **228** may instruct at least one of field-detecting component **212** and parameter-detecting component **222** to detect another parameter. This is similar to method **300** (**S308**) discussed above with reference to **FIG. 3**.

[0049] For example, returning to **FIG. 2**, controlling component **228** may instruct at least one of field-detecting component **212** and parameter-detecting component **222** to detect another parameter.

[0050] A magnetic field associated with the deployment of an airbag may be a relatively distinct parameter that may be used to determine whether a vehicle, of which the communication device is located, has been in a crash. However, there may be situations that elicit a false positive – e.g., a magnetic field that erroneously indicates that an airbag has been deployed and indicating a vehicle crash is actually a magnetic field associated with the operation of an automatic seat positioner within the vehicle, which has not been in a crash. As such, in order to reduce the probability of a false-positive indication that the vehicle has been in a crash, a second parameter associated with a vehicle crash may be used. Along this notion, it is an example aspect of the invention to detect a plurality of parameters associated with a vehicle crash to increase the probability of a correct identification of a vehicle crash.

[0051] In some embodiments, device **202** has a predetermined number of parameters to detect, wherein controlling component **228** may control such detections. For example, the first parameter to be detected (in **S306**) may be a magnetic field associated with the deployment of an airbag, wherein controlling component **228** may instruct field-detecting

component **212** to detect a magnetic field. Further, a second parameter to be detected may be another known detected parameter additionally associated with a vehicle crash, e.g., deceleration in three dimensions, wherein controlling component **228** may instruct parameter-detecting component **222** to detect the second parameter. Further parameter-detecting component **222** may be able to detect many parameters. This will be described with greater detail with reference to **FIG. 4**.

[0052] **FIG. 4** illustrates an example parameter-detecting component **222**.

[0053] As shown in the figure, parameter-detecting component **222** includes a plurality of detecting components, a sample of which are indicated as a first detecting component **402**, a second detecting component **404**, a third detecting component **406** and an *n*-th detecting component **408**. Parameter-detecting component **222** additionally includes a controlling component **410**.

[0054] In this example, detecting component **402**, detecting component **404**, detecting component **406**, detecting component **408** and controlling component **410** are illustrated as individual devices. However, in some embodiments, at least two of detecting component **402**, detecting component **404**, detecting component **406**, detecting component **408** and controlling component **410** may be combined as a unitary device. Further, in some embodiments, at least one of detecting component **402**, detecting component **404**, detecting component **406**, detecting component **408** and controlling component **410** may be implemented as a computer having tangible computer-readable media for carrying or having computer-executable instructions or data structures stored thereon.

[0055] Controlling component **410** is configured to communicate with: detecting component **402** via a communication line **412**; detecting component **404** via a communication line **414**; detecting component **406** via a communication line **416**; and detecting component **408** via a communication line **418**. Controlling component **410** is operable to control each of detecting component **402**, detecting component **404**, detecting component **406** and detecting component **408**. Controlling component **410** is additionally configured to communicate with controlling component **228** of **FIG. 2** via communication line **240** and to communicate with field-detecting component **212** of **FIG. 2** via communication line **260**.

[0056] The detecting components may each be a known detecting component that is able to detect a known parameter. For example each detecting component may be a known type of detector that is able to detect at least one of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. For purposes of discussion, let: detecting component **402** be able to detect deceleration in three dimensions; detecting component **404** be able to detect sound; detecting component **406** be able to detect vibrations; and detecting component **408** be able to detect geodetic position.

[0057] In some non-limiting example embodiments, at least one of the detecting components of parameter-detecting component **222** may detect a respective parameter as an amplitude at an instant of time. In some non-limiting example embodiments, at least one of the detecting components of parameter-detecting component **222** may detect a respective parameter as a function over a period of time.

[0058] Each of the detecting components of parameter-detecting component **222** is able to generate a respective detected signal based on the detected parameter. Each of these detected signals may be provided to controlling component **410** via a respective communication line.

[0059] Controlling component **410** is able to be controlled by controlling component **228** via communication line **240**.

[0060] Consider the example situation where communication device **202** generates a signature of a vehicle crash, wherein field detecting component **212** detects a magnetic field associated with deployment of an airbag as discussed above with reference to **FIG. 1B**, wherein detecting component **402** detects roll, pitch and yaw associated with movement of the communication device **202** during the vehicle crash and wherein detecting component **406** detects vibrations associated with a shockwave traveling through the chassis of the vehicle as a result of the deployment of the airbag as discussed above with reference to **FIG. 1B**. This will be further described with reference to **FIG. 5**.

[0061] **FIG. 5** includes a graph **500**, a graph **502**, a graph **504**, a graph **506**, a graph **508**, a graph **510**, a graph **512**, a graph **514**, and a graph **516**, each of which share a common x-axis **518** in units of seconds. Graph **500** has a y-axis **520** in units of degrees and includes a function **522**. Graph **502** has a y-axis **524** in units of degrees and includes a function **526**. Graph **504** has a y-axis **528** in units of degrees and has no function therein. Graph **506** has a y-axis **530** in units of m/s^2 and includes a function **532**. Graph **508** has a y-axis **534** in units of m/s^2 and includes a function **536**. Graph **510** has a y-axis **538** in units of m/s^2 and includes a function **540**. Graph **512** has a y-axis **542** in units of μT and includes a function **544**. Graph **514** has a y-axis **546** in units of μT and includes a function **548**. Graph **516** has a y-axis **550** in units of μT and includes a function **552**.

[0062] Function **522** corresponds to the angular acceleration in a roll direction relative to parameter-detecting component **222**. Function **526** corresponds to the angular acceleration in a yaw direction relative to parameter-detecting component **222**. As there is no recorded function that corresponds to the angular acceleration in a pitch direction relative to parameter-detecting component **222**, in this example, no angular acceleration in a pitch direction relative to parameter-detecting component **222** was detected. Function **532** corresponds to the acceleration in an x-direction relative to parameter-detecting component **222**. Function **536** corresponds to the acceleration in a y-direction relative to parameter-detecting component **222**. Function **540** corresponds to the acceleration in a z-direction relative to parameter-detecting component **222**. Function **544** corresponds to the magnitude of B in an x-direction relative to field-detecting component **212**. Function **548** corresponds to the magnitude of B in a y-direction relative to field-detecting component **212**. Function **552** corresponds to the magnitude of B in a z-direction relative to field-detecting component **212**.

[0063] A sudden change in the roll manifests as curve **554** in function **522**. A sudden change in the yaw manifests as transient **556** in function **526**. A sudden change in acceleration manifests as transient **558** in function **532**, as transient **560** in function **536** and as transient **562** in function **540**. A sudden change in the magnetic field manifests as transient **564** in function **544**, as small change **566** in function **548** and as transient **568** in function **552**. These changes and transients in functions **522**, **526**, **532**, **536**, **540**, **544**, **548** and **552** may be indicative of an event.

[0064] For purposes of discussion, let these changes and transients in functions **522**, **526**, **532**, **536**, **540**, **544**, **548** and **552** correspond to communication device **202** changing position as a result of a vehicle crash. Specifically, let curve **554** in function **522** transient **556** in function **526** correspond to a sudden change in position of communication device 202 when the vehicle crashes. Further, let transient **558** in function **532**, transient **560** in function **536** and transient **562** in function **540** correspond to a shockwave within the chassis associated with deployment of the airbag when the vehicle crashes. Finally, let transient **564** in function **544**, change **566** in function **548** and transient **568** in function **552** correspond to a magnetic field associated with deployment of the airbag when the vehicle crashes.

[0065] In this example, spike **570** in function **532**, spike **572** in function **536** and spike **574** in function **540** correspond to the dropping of communication device into position to start the crash test of the vehicle.

[0066] In this example therefore, the vehicle crash may have a signature based on functions **522**, **526**, **532**, **536**, **540**, **544**, **548** and **552**, having tell-tail changes and transients **554**, **556**, **558**, **560**, **562**, **564**, **566** and **568**, respectively. In some embodiments, field-detecting component **212** may additionally process any of functions **522**, **526**, **532**, **536**, **540**, **544**, **548** and **552** and combinations thereof to generate such a signature. Non-limiting examples of further processes include averaging, adding, subtracting, and transforming any of functions **612**, **614**, **616**, **618** and combinations thereof.

[0067] Returning to **FIG. 3**, after the first two parameters are detected (**S306** and **S308**), a crash probability, C_p, is generated (**S310**). For example, first a previously-stored signature (or signatures) may be retrieved, which is based on parameters associated with a vehicle crash. Then a crash signature is generated based on the detected parameters. Then the crash signature is compared with the previously-stored signature (or signatures), wherein the

comparison is used to generate the crash probability C_p. The crash probability C_p is a value that indicates the likelihood that the vehicle has crashed based on the similarity of the previously-stored signature and the newly-generated signature. In essence, it is determined whether the previously detected parameters associated with a previous vehicle crash (or previous vehicle crashes) are similar to the newly detected parameters.

[0068] In an example embodiment, the previously-stored signature may be stored in database **204**. A crash signature may be created by any known system or method and may be based detected parameters associated with previously recorded crashes. For example, crash signatures may be created based on previously recorded crashes from controlled crashes in a testing environment, i.e., test-crashes, and uncontrolled crashes, e.g., automobile accidents.

[0069] In some example embodiments, a plurality of crash signatures are stored in database **204**, wherein each crash signature is associated with a particular make, model and year vehicle. These crash signatures may be generated from previously recorded crashes from controlled crashes and uncontrolled crashes.

[0070] In some example embodiments, a plurality of crash signatures are stored in database **204**, wherein each crash signature is associated with many different makes, models and years of vehicles. These crash signatures may be generated from previously recorded crashes from controlled crashes and uncontrolled crashes.

[0071] In some example embodiments, a plurality of crash signatures are stored in database **204**, wherein each crash signature is associated with a particular type of vehicle crash, e.g., front, rear or side. These crash signatures may be generated from previously recorded crashes from controlled crashes and uncontrolled crashes.

[0072] In some example embodiments, a plurality of crash signatures are stored in database **204**, wherein each crash signature is associated with a combination of: many different makes, models and years of vehicle and with a particular type of vehicle crash, e.g., front, rear or side. These crash signatures may be generated from previously recorded crashes from controlled crashes and uncontrolled crashes.

[0073] Non-limiting examples of detected parameters for which each crash signature is based include at least one of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three

dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

[0074] As for how a crash signature is generated, in some embodiments it is a signal output from a detecting component that is capable of detecting a parameter. A crash signature may be a composite detected signal that is based on any of an individual detected signal, and combination of a plurality of detected signals. In some embodiments, any of the individual detected signals and combinations thereof may be additionally processed to generate a crash. Non-limiting examples of further processes include averaging, adding, subtracting, and transforming any of the individual detected signals and combinations thereof. For purposes of discussion, consider the situation where a vehicle is crash-tested and parameters are detected to generate a crash signature. In this example, let the crash signature be based on: a detected magnetic field associated with deployment of the airbag during the crash; a detected deceleration in three dimensions during the crash; a detected sound during the crash; and detected vibrations during the crash. Further, in this example, let the crash signature be the five separate signals, such that future comparisons with other crash signatures will compare signals of similar parameters.

[0075] Returning to **FIG. 2**, previously stored crash signatures are stored in database **204** as *a priori* information.

[0076] Controlling component **228** may then instruct access component **216** to retrieve a previously-stored signature, from database **204** and to provide the previously-stored signature to comparing component **218**. In some embodiments, a single previously-stored signature is

retrieved, wherein in other embodiments, more than one previously-stored signature may be received.

[0077] Controlling component **228** may then instruct comparing component **218** to generate a crash probability, C_p, indicating a probability that the vehicle crashed.

[0078] In embodiments where a single previously-stored signature is retrieved, the newly generated signature may be compared with the single previously-stored signature. The crash probability C_p may then be generated based on the similarity between the newly generated signature and the single previously-stored signature.

[0079] In some embodiments where plural previously-stored signatures are retrieved, the newly generated signature may be compared each previously-stored signature in a serial manner. The crash probability C_p may then be generated based on the similarity between the newly generated signature and the single previously-stored signature of which is most similar to the newly generated signature.

[0080] In some embodiments where plural previously-stored signatures are retrieved, the newly generated signature may be compared each previously-stored signature in a parallel manner. The crash probability C_p may then be generated based on the similarity between the newly generated signature and the single previously-stored signature of which is most similar to the newly generated signature.

[0081] In an example embodiment, the newly generated signature is compared with a single previously-stored signature. If the newly generated signature is exactly the same as the previously-stored signature, then the generated crash probability will be 1, thus indicating that the vehicle has crashed. Variations between the newly generated signature and the previously-stored signature will decrease the generated crash probability, thus decreasing the likelihood that the vehicle has crashed. Any known method of comparing two signatures to generate such a probability may be used.

[0082] In an example embodiment, a comparison is made between similar parameter signals. For example, let a previously-stored signature be a function corresponding to a previously-detected magnetic field and a second function corresponding to a previously-detected deceleration in three dimensions, and let a newly-detected signature be a function corresponding to a newly-detected magnetic field and a second function corresponding to a

newly-detected deceleration in three dimensions. The comparison would include a comparison of the function corresponding to the previously-detected magnetic field and the function corresponding to the newly-detected magnetic field and a comparison of the second function corresponding to a previously-detected deceleration in three dimensions and the second function corresponding to a newly-detected deceleration in three dimensions.

[0083] Controlling component **228** may then provide the crash probability C_p to identifying component **220** via communication line **258**.

[0084] Returning to **FIG. 3**, it is then determined whether the generated crash probability C_p is greater than or equal to a predetermined probability threshold, T_p (**S312**). For example, identifying component **220** may have a predetermined probability threshold T_p stored therein. The probability threshold T_p may be established to take into account acceptable variations in detected parameters. For example, all vehicles may have varying unique parameter signatures, e.g., magnetic signatures, thermal signatures, acoustic signatures, etc. However, the corresponding parameter signatures of all vehicles in a crash may be considered somewhat similar. These similarities may be taken into account when setting the probability threshold T_p.

[0085] Clearly, if the probability threshold T_p is set to 1, this would only be met if newly generated signature is exactly the same as the previously-stored signature (or one of the previously stored signatures), thus indicating that the vehicle has crashed. Further, this threshold would not be met if the sensors did not detect the exact parameters, which does not generally represent a real world scenario. On the contrary, if the probability threshold T_p is decreased, it would take into account variations in the detected parameters. Further, if the probability threshold T_p is decreased further, it may take into account variations in a class of vehicle crashes, e.g., difference vehicles, or crashes from various angles.

[0086] In an example embodiment, identifying component **220** determines whether the crash probability C_p generated by comparing component **218** is greater than or equal to the predetermined probability threshold T_p. In this case, identifying component **220** is a probability-assessing component that generates a probability of a specific mode based on a comparison or comparison signal.

[0087] Returning to **FIG. 3**, if it is determined that the generated crash probability is greater than or equal to the predetermined probability threshold (Y at **S312**), then the device is operated in a crash mode (**S314**). For example, consider the situation where a person carrying device **202** is driving in vehicle **102**, which crashes. Identifying component **220** has determined that the newly detected signature associated with the detected parameters from the crash matches a previously-stored signature for a vehicle crash. In such a case, identifying component **220** provides a crash mode signal to controlling component **228**, via communication line **238**, indicating device **202** should operate in a crash mode. Further, for purposes of discussion, let the crash mode be such a mode wherein predetermined functions of device **202** may be activated, such as automatically contacting emergency services.

[0088] In this situation, identifying component **220** acts as a mode-determining component and has generated an in-vehicle signal indicating that device **202** is in a vehicle. Further field-detecting component **212** has generated a detector signal based on a first detected parameter, in this example, a detected magnetic field associated with the deployment of an airbag. Additionally, parameter-detecting component **222** has generated a detector signal based on a second detected parameter, in this example, a detected deceleration. Finally, identifying component **220** generates the crash mode signal based on the in-vehicle signal, the signal based on the first parameter and the signal based on the second parameter. Having the crash mode signal being based on the in-vehicle signal, and both detector signals greatly decreases the chances of false-positive identifications of a vehicle crash. Further, this system is able to generate an accurate crash mode signal without accessing the OBD.

[0089] Returning to **FIG. 3**, once the device is operated in the crash mode (**S314**), method **300** stops (**S328**).

[0090] If it is determined that the generated crash probability is less than the predetermined probability threshold (N at **S312**), it is determine whether an additional parameter is to be detected (**S316**). For example, returning to **FIG. 3**, as discussed previously, parameter-detecting component **222** may be able to detect a plurality of parameters. In some embodiments, all parameters are detected at once, whereas in other embodiments some parameters are detected at different times.

[0091] Consider the situation where an initially generated crash probability is based only on a newly-detected magnetic field as detected by field-detecting component **212** and on a newly-detected deceleration in three dimensions as detected by detecting component **302**. Further, for purposes of discussion, let the generated crash probability be less than the predetermined probability threshold. In such a case, if more parameters had been detected, they may be used to further indicate that the vehicle has crashed.

[0092] Returning to **FIG. 3**, if an additional parameter is to be detected (Y at **S316**), then an additional parameter is detected (**S318**). For example, controlling component **228** may instruct parameter-detecting component **222** to provide additional information based on additionally detected parameters to field-detecting component **212**.

[0093] Returning to **FIG. 3**, after the additional parameter is detected (**S318**), the crash probability is updated (**S320**). For example, the new signature may be generated in a manner similar to the manner discussed above in method **300** (**S310**) of **FIG. 3**. Controlling component **228** may then instruct access component **216** to retrieve the previously-stored signature, e.g., from method **300** of **FIG. 3**, from database **204** and to provide the previously-stored signature to comparing component **218**.

[0094] Controlling component **228** may then instruct comparing component **218** to generate an updated crash probability, C_{pu}, indicating a probability that the vehicle has crashed. In an example embodiment, the newly generated signature is compared with the previously-stored signature. Again, any known method of comparing two signatures to generate such a probability may be used.

[0095] In an example embodiment, a comparison is made between similar parameter signals. For purposes of discussion, let the previously generated crash probability C_p be based on the newly-detected magnetic field as detected by field-detecting component **212** and on a newly-detected deceleration in three dimensions as detected by detecting component **402**. Now, let the updated, generated crash probability C_{pu} be based on: 1) the newly-detected magnetic field as detected by field-detecting component **212**; 2) the newly-detected deceleration in three dimensions as detected by detecting component **402**; and 3) a newly-detected vibration as detected by detecting component **406**.

[0096] The new comparison may include: a comparison of the function corresponding to the previously-detected magnetic field and the function corresponding to the newly-detected magnetic field; a comparison of the second function corresponding to a previously-detected deceleration in three dimensions and the second function corresponding to the newly-detected deceleration in three dimensions; and a comparison of the second function corresponding to a previously-detected vibration and the second function corresponding to the newly-detected vibration.

[0097] Returning to **FIG. 3**, after the crash probability is updated (**S320**), it is again determined whether the generated crash probability is greater than or equal to the predetermined probability threshold (**S312**). Continuing the example discussed above, now that many more parameters have been considered in the comparison, the updated crash probability C_p, which is now C_{pn}, is greater than or equal to the probability threshold T_p. For example, although the previous comparison between only two parameters provided a relatively low probability, the additional parameters greatly increased the probability. For example, consider the situation where the detected magnetic field and the detected deceleration in three dimensions are sufficiently dissimilar to the previously stored magnetic field and deceleration in three dimensions associated with a vehicle crash. However, now that more parameters are considered, e.g., sound, velocity, vibrations and change in geodetic position, it may be more likely that vehicle has, in fact, crashed.

[0098] Returning to **FIG. 3**, if an additional parameter is not to be detected (N at **S316**), then the device is not operated in the crash mode (**S322**). If the crash probability C_p is ultimately lower than the predetermined probability threshold T_p, then it is determined that the vehicle has not crashed. As such, device **202** would not be operating in the crash mode.

[0099] Returning to **FIG. 3**, it is then determined whether the current operating mode has been switched to the crash mode (**S324**). For example, returning to **FIG. 2**, there may be situations where a user would like device **202** to operate in a crash mode, even though device **202** is not currently operating in such a mode. In those situations, user **202** may be able to manually change the operating mode of device **202**. For example, a GUI of input component **214** may enable the user to instruct controlling component **228**, via communication line **232**, to operate in a specific mode.

[00100] Returning to **FIG. 3**, if it is determined that the current operating mode has been switched to the crash mode (Y at **S324**), then the device is operated in a crash mode (**S314**).

[00101] Alternatively, if it is determined that the mode has not been switched (N at **S324**), then it is determined whether the device has been turned off (**S326**). For example, returning to **FIG. 2**, there may be situations where a user turns off device **202** or device **202** runs out of power. If it is determined that the device has not been turned off (N at **S326**), the process repeats and it is determined whether the device is in a vehicle (**S304**). Alternatively, if it is determined that the device has been turned off (Y at **S326**), the method **300** stops (**S328**).

[00102] In some embodiments, when it is determined that device **202** is in a vehicle (Y at **S304**), field-detecting component **212** and parameter-detecting component **222** may be operated to detect respective parameters at the fasted rate possible. In this manner, a crash may be accurately detected as soon as possible, but much power may be expended in device **202**.

[00103] In some embodiments, when it is determined that device **202** is in a vehicle (Y at **S304**), field-detecting component **212** and parameter-detecting component **222** may be adjusted to operate to detect respective parameters at the lower rate. In this manner, a crash may be accurately detected as with some delay, but power of device 202 may be saved. In an example embodiment, a user is able to adjust the detection rate of field-detecting component **212** and parameter-detecting component **222** by way of the GUI in input component **214**.

[00104] Aspects of the present invention enable a communication device to accurately determines whether a vehicle as crashed without accessing the OBD of the vehicle. In particular, a communication device in accordance with aspects of the present invention can accurately detect a vehicle crash by detecting that it is in a vehicle, detecting a first parameter associated with a crash, detecting a second parameter associated with a crash, generating a crash probability and comparing the crash probability with a predetermined threshold. By detecting a crash based on being in a vehicle and based on two additionally detected parameters, the likelihood of erroneously detecting a crash is greatly reduced.

[00105] In the drawings and specification, there have been disclosed embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the following claims.

CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A device for use with a vehicle, said device comprising:

a mode-determining component operable to generate an in-vehicle signal;

a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter; and

a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter; and

wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

2. The device of claim 1, wherein said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

3. The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle.

4. The device of claim 2,

wherein said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and

wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

5. The device of claim 1, further comprising a communication component operable to wirelessly communicate with a network.

6. The device of claim 1, further comprising:

an operating component operable to operate in a first mode and a second mode,

wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal.

7. A method for use with a vehicle, said method comprising:

generating, via a mode-determining component, an in-vehicle signal;

detecting, via a first detecting component, a first parameter;

generating, via the first detecting component, a first detector signal based on the first detected parameter;

detecting, via a second detecting component, a second parameter;

generating, via the second detecting component, a second detector signal based on the second detected parameter; and

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

8. The method of claim 7, wherein said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three

dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

9. The method of claim 8, wherein said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.

10. The method of claim 8,

wherein said detecting a first parameter comprises detecting acceleration along a single axis, and

wherein said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

11. The method of claim 7, further comprising wirelessly communicating, via a communication component, with a network.

12. The method of claim 7, further comprising:

operating an operating component in a first mode; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

13. A non-transitory, tangible, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method comprising:

generating, via a mode-determining component, an in-vehicle signal;

detecting, via a first detecting component, a first parameter;

generating, via the first detecting component, a first detector signal based on the first detected parameter;

detecting, via a second detecting component, a second parameter;

generating, via the second detecting component, a second detector signal based on the second detected parameter;

operating an operating component in a first mode;

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

14. The non-transitory, tangible, computer-readable media of claim 13, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

15. The non-transitory, tangible, computer-readable media of claim 14, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.

16. The non-transitory, tangible, computer-readable media of claim 14, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that

said detecting a first parameter comprises detecting acceleration along a single axis, and

said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

17. The non-transitory, tangible, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising wirelessly communicating, via a communication component, with a network.

18. The non-transitory, tangible, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising:

operating an operating component in a first mode; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

ABSTRACT

A device is provided for use with a vehicle. The device includes a mode-determining component, a first detecting component and a second detecting component. The mode-determining component can generate an in-vehicle signal. The first detecting component can detect a first parameter and can generate a first detector signal based on the first detected parameter. The second detecting component can detect a second parameter and can generate a second detector signal based on the second detected parameter. The mode-determining component can further generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

FIG. 1A

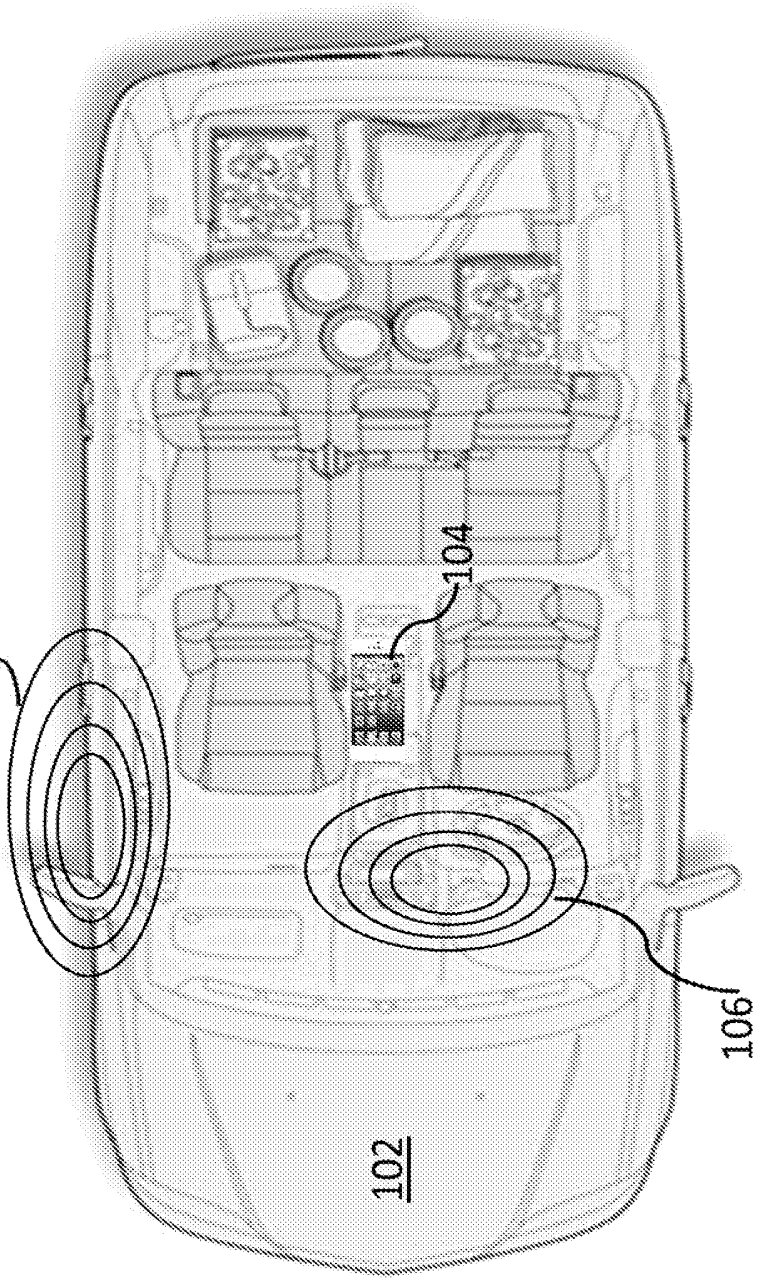


FIG. 1B

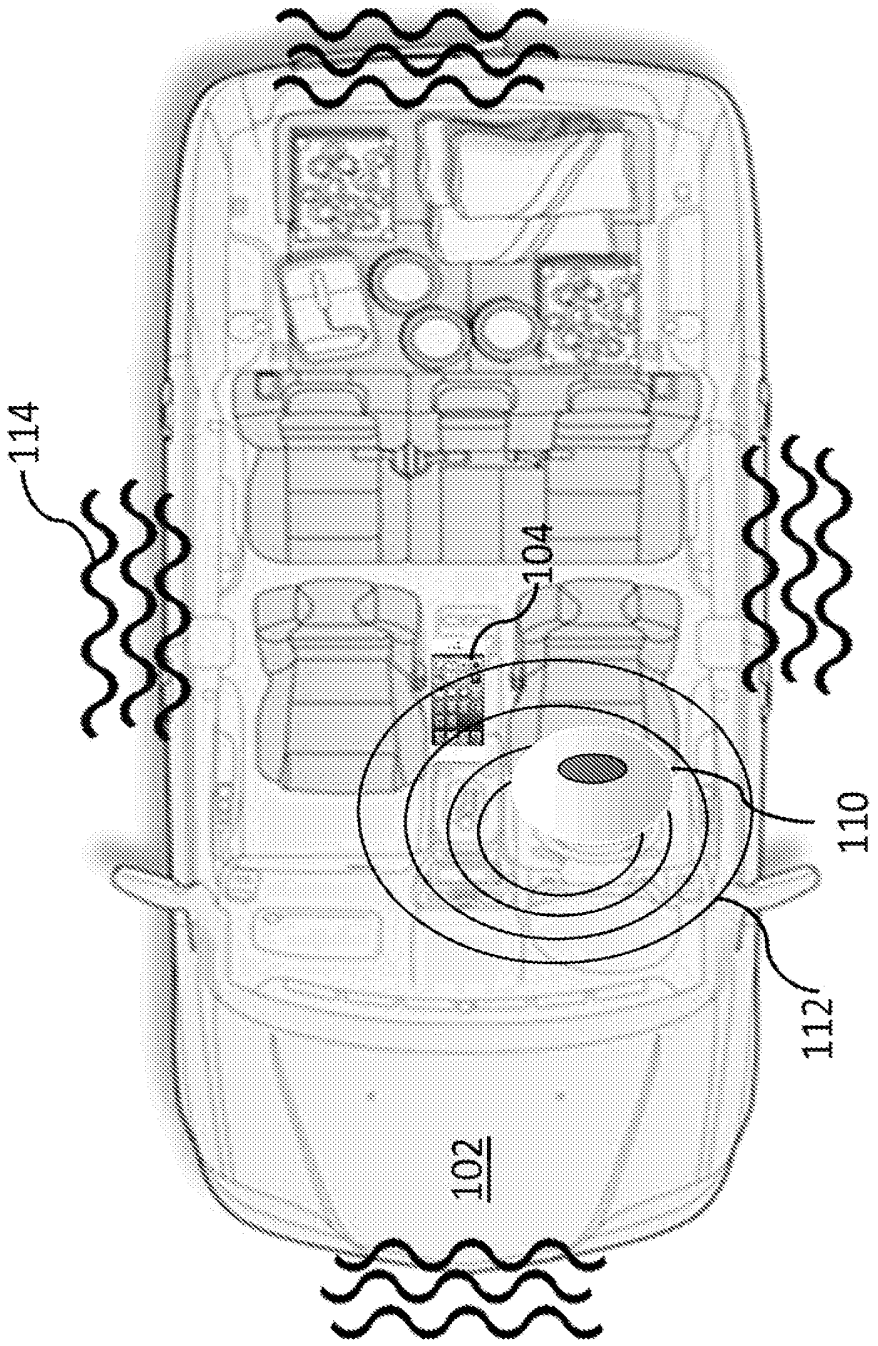
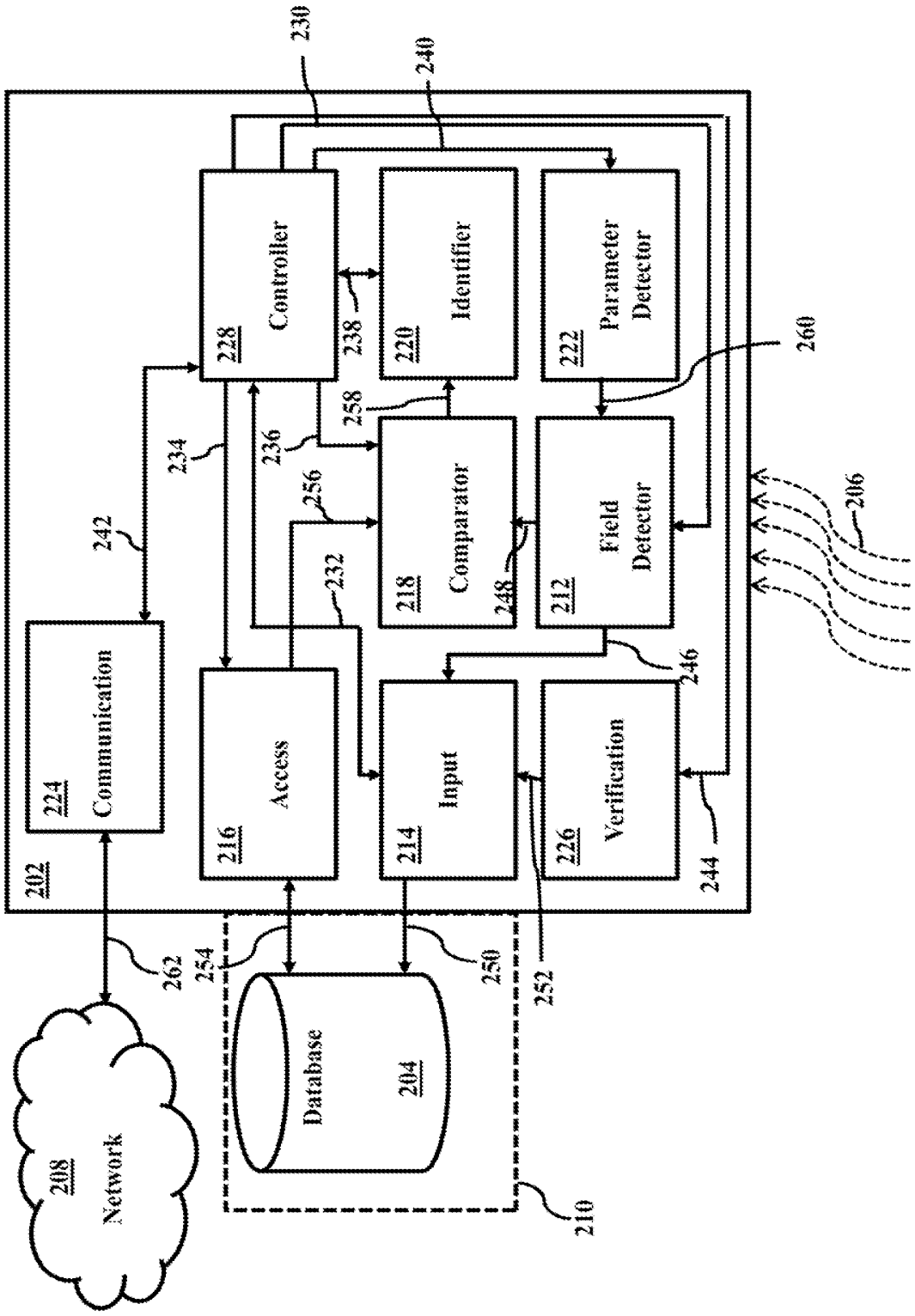


FIG. 2


230
240
228 Controller
220 Identifier
222 Parameter Detector
238
260
258
234
236
256
242
232
218 Comparator
248
212 Field Detector
206
224 Communication
216 Access
214 Input
226 Verification
246
244
202
262
254
250
252
208 Network
Database
204
210

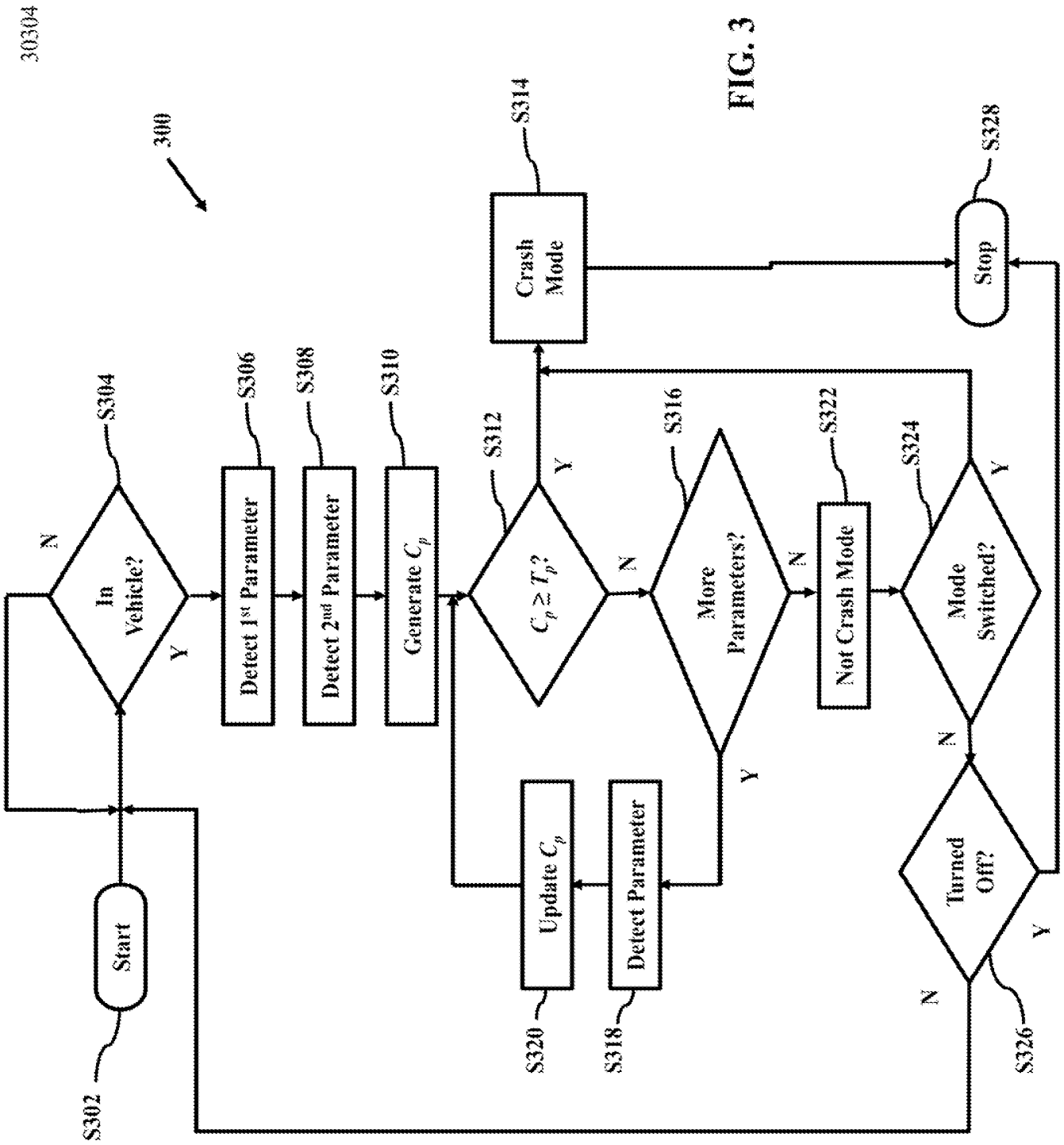

30304
300
Start
S302
In Vehicle?
S304
N
Y
Detect 1st Parameter
S306
Detect 2nd Parameter
S308
Generate C_p
S310
$C_p \geq T_p$?
S312
Y
N
Crash Mode
S314
More Parameters?
S316
N
Y
Update C_p
S320
Detect Parameter
S318
Not Crash Mode
S322
Mode Switched?
S324
Y
N
Turned Off?
S326
N
Y
Stop
S328

FIG. 3

30304

FIG. 4

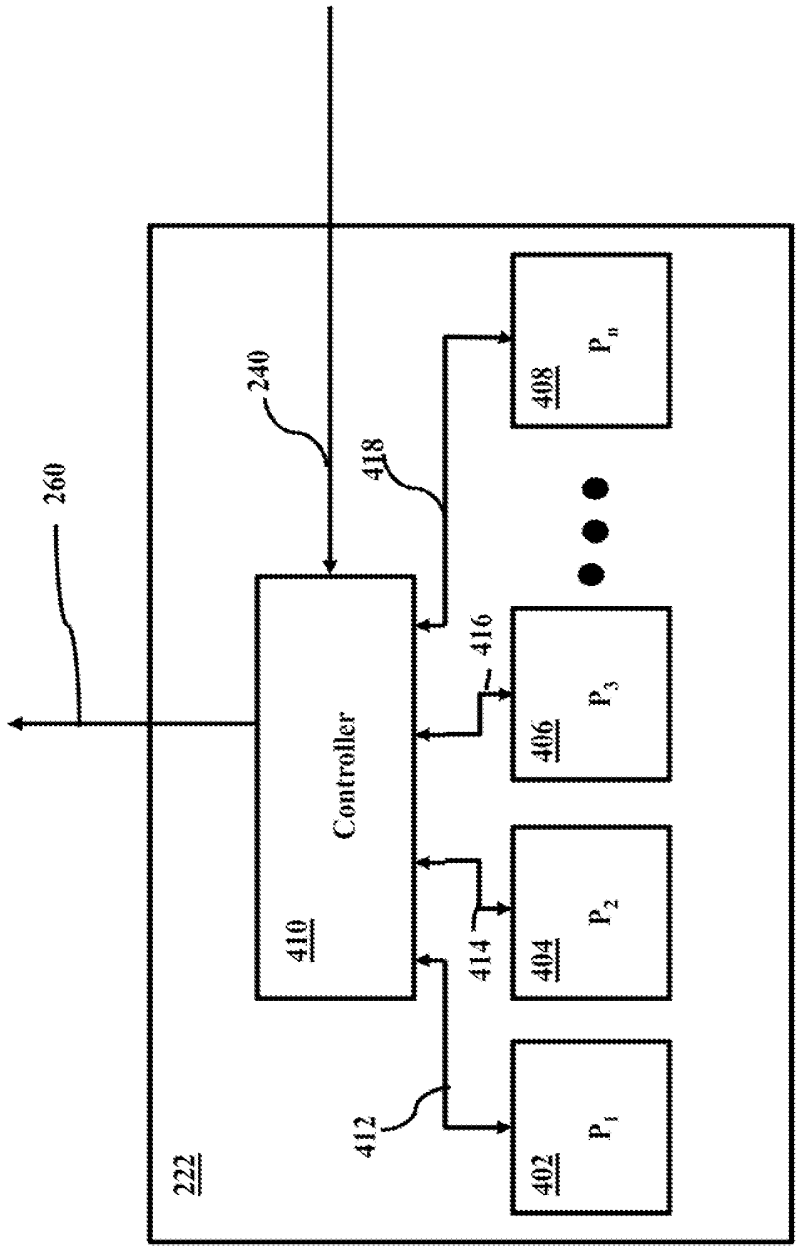
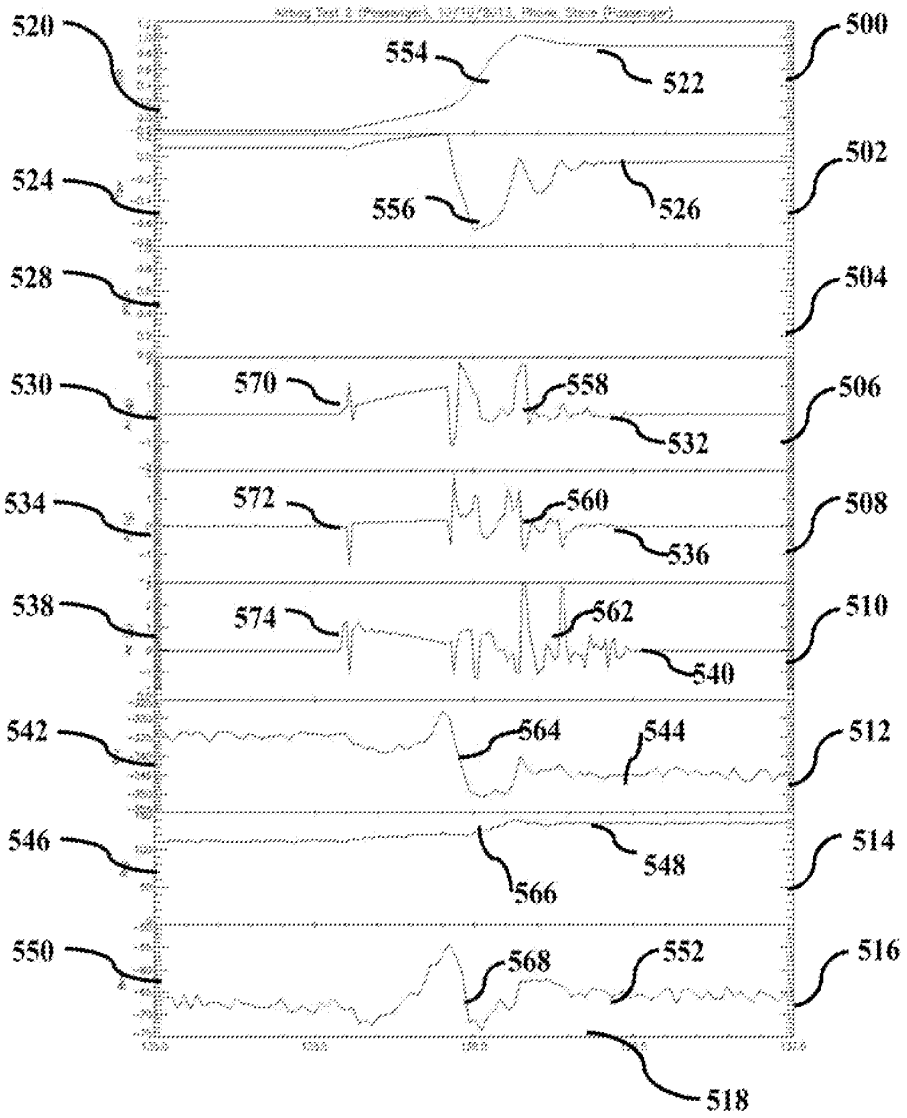

260
240
418
222
410
Controller
412
414
416
402
P_1
404
P_2
406
P_3
408
P_n

FIG. 5



CMT Exhibit 1007, Page 38 of 207
CMT v. Sfara - IPR2024-00952

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

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

Secrecy Order 37 CFR 5.2

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sascha		Simon	

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

City	Warwick	State/Province	NY	Country of Residence i	US

Mailing Address of Inventor:

Address 1	43 Ridgefield Rd		
Address 2			
City	Warwick	**State/Province**	NY
Postal Code	10990-3545	**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	54671		
Email Address	john@baysidelaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH		
Attorney Docket Number	APIO-Crash	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	**Suggested Figure for Publication (if any)**	3

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

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	54671		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this 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.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61740814	2012-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61740831	2012-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61740851	2012-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61745677	2012-12-24
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	14072231	2013-11-05
Prior Application Status	Pending		Remove

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	14095156	2013-12-03

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

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(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) [i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

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

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

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

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

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

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), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant 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, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 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 instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

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

Applicant 1 Remove

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

Clear

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

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

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

Mailing Address Information:			
Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

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

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute 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.

Remove

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:			
Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

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

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	APIO-Crash
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	

Signature:

Remove

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/John T. Whelan/			Date (YYYY-MM-DD)	2013-12-13
First Name	John	Last Name	Whelan	Registration Number	32448
Additional Signature may be generated within this form by selecting the Add button. Add					

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

Privacy Act Statement

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

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

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

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

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

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

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

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

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 _____
  filed on _____.

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

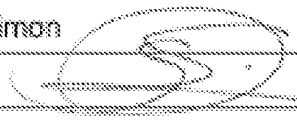
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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 INVENTOR

Inventor: Sascha Simon  Date (Optional): _____

Signature: _____

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.**

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

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	System and Method for Detecting Vehicle Crash
First Named Inventor/Applicant Name:	Sascha Simon
Filer:	John T. Whelan
Attorney Docket Number:	Apio-Crash

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**730**

Electronic Acknowledgement Receipt

EFS ID:	17655353
Application Number:	14105744
International Application Number:	
Confirmation Number:	1091
Title of Invention:	System and Method for Detecting Vehicle Crash
First Named Inventor/Applicant Name:	Sascha Simon
Customer Number:	54671
Filer:	John T. Whelan
Filer Authorized By:	
Attorney Docket Number:	Apio-Crash
Receipt Date:	13-DEC-2013
Filing Date:	
Time Stamp:	14:38:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$730
RAM confirmation Number	1089
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		ApioCrashModeApplication.pdf	10640728 a0b6534f85aa4e1565b9eba2d54c43fb3f4b6d62	yes	38

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	26
	Claims	27	31
	Abstract	32	32
	Drawings-only black and white line drawings	33	38

Warnings:					
Information:					
2	Application Data Sheet	ApioCrashModeADS.pdf	1505332 626bc0c73ab81edfbcbfeaeea2e8067d4a37adec	no	7
Warnings:					
Information:					
3	Oath or Declaration filed	ApioCrashModeDec.pdf	990196 375306483cc939ed8e602f15a8c9438377d1a5b6	no	1
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32308 f3557a4711e027ee88536e88c3479e2d5f7fdcea	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	13168564	

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.

SCORE Placeholder Sheet for IFW Content

Application Number: 14105744 Document Date: 12/13/2013

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.

- Drawings – Other than Black and White Line Drawings

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.

To access the documents in the SCORE database, refer to instructions below.

At the time of document entry (noted above):

- Examiners may access SCORE content via the eDAN interface.
- Other USPTO employees can bookmark the current SCORE URL (http://Score.uspto.gov/ScoreAccessWeb/).
- External customers may access SCORE content via the Public and Private PAIR interfaces.

Form Revision Date: September 30, 2013

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/105,744

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	18 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			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	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/105,744	12/13/2013	3657	730	APIO-Crash	18	3

CONFIRMATION NO. 1091

54671
The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

FILING RECEIPT

OC000000065729467

Date Mailed: 12/31/2013

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)

Sascha Simon, Warwick, NY;

Applicant(s)

Sascha Simon, Warwick, NY;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/740,814 12/21/2012
and claims benefit of 61/740,831 12/21/2012
and claims benefit of 61/740,851 12/21/2012
and claims benefit of 61/745,677 12/24/2012
and is a CIP of 14/072,231 11/05/2013
and is a CIP of 14/095,156 12/03/2013

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 - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 12/24/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/105,744**

Projected Publication Date: 06/26/2014

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **
Title

SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

Preliminary Class

303

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

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.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/105,744	12/13/2013	Sascha Simon	APIO-Crash

CONFIRMATION NO. 1091

54671
The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

PUBLICATION NOTICE

OC000000069314339

Title:SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

Publication No.US-2014-0180529-A1
Publication Date:06/26/2014

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 Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, 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 http://pair.uspto.gov/. 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 Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PLUS Search Results for S/N 14105744, Searched Tue Nov 04 11:13:35 EST 2014

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

20140179348 99
20140179353 99
20140180529 99
20140180563 99
20140180615 99
8509395 51
8634519 51
20130322607 51
4625210 50
5734316 50
6169495 50
5477217 49
5959572 49
6098048 49
4768916 49
4797049 49
4833442 49
5026153 49
5231253 49
5702223 49
5808372 49
5809480 49
5878361 49
5928294 49
5964572 49
6059899 49
6059899 49
6122571 49
4284941 49
4403208 49
4469210 49
4621856 49
4775939 49
5222906 49
5254996 49
5360287 49
5415505 49
5454672 49
5469676 49
5525026 49
5540158 49
5589827 49
5628596 49
5634339 49
5711368 49
5732785 49
5775858 49
5777451 49
5777565 49
5818356 49

PLUS Search Results for S/N 14105744, Searched Tue Nov 04 11:13:38 EST 2014

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

4727278 99
5940356 99
8337019 99
8700970 99
20100195051 99
20140180529 99
3776491 81
3884750 81
4453146 81
4613201 81
4685070 81
4695493 81
4806887 81
4823272 81
4828171 81
5413555 81
5491740 81
5537057 81
5745126 81
5777886 81
5781652 81
5883628 81
5935195 81
6236743 81
6328202 81
6356653 81
6363940 81
6424890 81
6473716 81
6522906 81
6565523 81
6589758 81
6625302 81
6634495 81
6749509 81
6771841 81
6862019 81
7069148 81
7167865 81
7214138 81
7247859 81
7262783 81
7363162 81
7386178 81
7536286 81
7545140 81
7706916 81
7860283 81
7873194 81
7898499 81

PLUS Search Results for S/N 14105744, Searched Tue Nov 04 12:31:50 EST 2014

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

20140179348 99
20140179353 99
20140180529 99
20140180563 99
20140180615 99
8509395 51
8634519 51
20130322607 51
4625210 50
5734316 50
6169495 50
5477217 49
5959572 49
6098048 49
4768916 49
4797049 49
4833442 49
5026153 49
5231253 49
5702223 49
5808372 49
5809480 49
5878361 49
5928294 49
5964572 49
6059899 49
6059899 49
6122571 49
4284941 49
4403208 49
4469210 49
4621856 49
4775939 49
5222906 49
5254996 49
5360287 49
5415505 49
5454672 49
5469676 49
5525026 49
5540158 49
5589827 49
5628596 49
5634339 49
5711368 49
5732785 49
5775858 49
5777451 49
5777565 49
5818356 49

PLUS Search Results for S/N 14105744, Searched Tue Nov 04 12:31:52 EST 2014

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

4727278 99
5940356 99
8337019 99
8700970 99
20100195051 99
20140180529 99
3776491 81
3884750 81
4453146 81
4613201 81
4685070 81
4695493 81
4806887 81
4823272 81
4828171 81
5413555 81
5491740 81
5537057 81
5745126 81
5777886 81
5781652 81
5883628 81
5935195 81
6236743 81
6328202 81
6356653 81
6363940 81
6424890 81
6473716 81
6522906 81
6565523 81
6589758 81
6625302 81
6634495 81
6749509 81
6771841 81
6862019 81
7069148 81
7167865 81
7214138 81
7247859 81
7262783 81
7363162 81
7386178 81
7536286 81
7545140 81
7706916 81
7860283 81
7873194 81
7898499 81

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	12/13/2013	Sascha Simon	APIO-Crash	1091

54671 7590 11/06/2014

The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

EXAMINER	
PAIGE, TYLER D	
ART UNIT	PAPER NUMBER
3661	

MAIL DATE	DELIVERY MODE
11/06/2014	PAPER

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

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

Office Action Summary	Application No. 14/105,744	Applicant(s) SIMON, SASCHA	
	Examiner TYLER PAIGE	Art Unit 3661	AIA (First Inventor to File) Status Yes

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

Period for Reply

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

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

Status

1)☒ Responsive to communication(s) filed on *12/13/2013*.

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

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

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

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

Disposition of Claims*

5)☒ Claim(s) *1-18* is/are pending in the application.

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

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-18* is/are rejected.

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

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *12/13/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

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

4) ☐ Other: _____.

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. This office action is in response to an application filed on 12/13/2013. The applicant claims domestic priority to numerous provisional applications, a non-provisional application, and continuation in part applications dating back to 12/21/2012. The applicant does not submit an Information Disclosure Statement.

Claim Objections

1. Claims 13 – 18 are objected to because of the following informalities: The claims contain the language “non-transitory tangible computer-readable media”, in order to conform with USPTO policy such a claim for computer program should be written as, "non-transitory computer readable media". Appropriate correction is required.

Claim Rejections - 35 USC § 103

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

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

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

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-18 are rejected under 35 U.S.C. 103 as being unpatentable over Oesterling US 2013/0130639 in view of Breed US 2007/0021915.

6. As per claim 1, A device for use with a vehicle, said device comprising:

a mode-determining component operable to generate an in-vehicle signal; (Oesterling paragraph 0005)

a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter; and (Oesterling paragraphs 0015 and 0025)

a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter; and

(Oesterling paragraphs 0015 and 0025) and (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. (Oesterling Abstract and paragraph 0003)

Oesterling discloses a sytem and method for providing emergency communication services using a vehicle telematics unit and a mobile device. Oesterling does not disclose a second detecting component where the electric field and magnetic field are measured. Breed teaches the measuring and use of a second detecting component of a vehicle collision with a mobile device. Therefore, at the time of filing the invention would have been obvious to one of ordinary skill in the art to incorporate the teachings of Breed et.al. into the invention of Oesterling. Such incorporation is motivated by the increased sensor information that provided confidence in ensuring the lack of a false positive determination of a collision. Thus, emergency personnel are not notified of an emergency that die not occur.

7. As per claim 2, The device of claim 1, wherein said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics,

contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

8. As per claim 3, The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle. (Oesterling paragraphs 0015 and 0025)

9. As per claim 4, The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. (Oesterling paragraphs 0015, 0025, and 0027)

10. As per claim 5, The device of claim 1, further comprising a communication component operable to wirelessly communicate with a network. (Oesterling abstract and paragraphs 0010 and 0012)

11. As per claim 6, The device of claim 1, further comprising; an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

12. As per claim 7, A method for use with a vehicle, said method comprising:

generating, via a mode-determining component, an in-vehicle signal; (Oesterling paragraphs 0003 and 0004)

detecting, via a first detecting component, a first parameter; generating, via the first detecting component, a first detector signal based on the first detected parameter; (Oesterling paragraphs 0004 and 0025)

detecting, via a second detecting component, a second parameter; (Breed

generating, via the second detecting component, a second detector signal based on the second detected parameter; and (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. (Oesterling paragraphs 0004 and 0025)

13. As per claim 8, The method of claim 7, wherein said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three

dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

14. As per claim 9, The method of claim 8, wherein said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle. (Oesterling paragraphs 0004, 0015, and 0025)

15. As per claim 10, The method of claim 8, wherein said detecting a first parameter comprises detecting acceleration along a single axis, and wherein said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. (Oesterling paragraphs 0015, 0025, and 0027)

16. As per claim 11, The method of claim 7, further comprising wirelessly communicating, via a communication component, with a network. (Oesterling abstract and paragraphs 0010 and 0012)

17. As per claim 12, The method of claim 7, further comprising: operating an operating component in a first mode; and switching operation of the operating component from the first mode to a second mode based on the crash mode signal. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

18. As per claim 13, A non-transitory, tangible, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method comprising:

generating, via a mode-determining component, an in-vehicle signal; detecting, via a first detecting component, a first parameter; (Oesterling abstract and paragraphs 0003, 0004 and 0014)

generating, via the first detecting component, a first detector signal based on the first detected parameter; (Oesterling abstract and paragraphs 0004 and 0014)

detecting, via a second detecting component, a second parameter; (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

generating, via the second detecting component, a second detector signal based on the second detected parameter; (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

operating an operating component in a first mode; (Oesterling abstract and paragraphs 0004 and 0014)

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal; and (Breed and (Oesterling paragraphs 0004 and 0025)

switching operation of the operating component from the first mode to a second mode based on the crash mode signal. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

19. As per claim 14, The non-transitory, tangible, computer-readable media of claim 13, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three

dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. (Oesterling abstract and paragraphs 0003, 0004 and 0014) and (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

20. As per claim 15, The non-transitory, tangible, computer-readable media of claim 14, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle. (Oesterling paragraphs 0004, 0015, and 0025)

21. As per claim 16, The non-transitory, tangible, computer-readable media of claim 14, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting acceleration along a single axis, and said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. (Oesterling paragraphs 0004, 0015, 0025, and 0027)

22. As per claim 17, The non-transitory, tangible, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising

wirelessly communicating, via a communication component, with a network. (Oesterling abstract and paragraphs 0010, 0012 and 0027)

23. As per claim 18, The non-transitory, tangible, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising:

operating an operating component in a first mode; and switching operation of the (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

operating component from the first mode to a second mode based on the crash mode signal. (Breed paragraphs 0033, 0097, 0098, 0567, and 0648)

Examiner Request

The examiner requests, in response to this office action, support must be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line number(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application. When responding to this office action, applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view the state of the art disclosed

by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYLER PAIGE whose telephone number is (571)270-5425. The examiner can normally be reached on 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 571-272-6956. 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.

/T. P./
Examiner, Art Unit 3661

/Thomas G Black/

Supervisory Patent Examiner, Art Unit 3661

Notice of References Cited	Application/Control No. 14/105,744	Applicant(s)/Patent Under Reexamination SIMON, SASCHA	
	Examiner TYLER PAIGE	Art Unit 3661	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,411,250 B1	06-2002	Oswald et al.	342/70
*	B	US-2003/0209893 A1	11-2003	Breed et al.	280/735
*	C	US-2007/0021915 A1	01-2007	Breed et al.	701/301
*	D	US-7,415,126 B2	08-2008	Breed et al.	382/100
*	E	US-2010/0063649 A1	03-2010	Wu et al.	701/1
*	F	US-7,904,053 B2	03-2011	Krasner et al.	455/404.2
*	G	US-8,082,014 B2	12-2011	Causey et al.	455/575.9
*	H	US-2012/0135764 A1	05-2012	OHASHI, KAZUNORI	455/501
*	I	US-2012/0158249 A1	06-2012	XU et al.	701/45
*	J	US-2012/0282885 A1	11-2012	Hamed et al.	455/404.2
*	K	US-2013/0130639 A1	05-2013	Oesterling et al.	455/404.1
*	L	US-2013/0253775 A1	09-2013	Shimizu, Ryo	701/45
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

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

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	Art Unit
	TYLER PAIGE	3661

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
701	31.5	11/04/2014	tdp

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	11/04/2014	tdp
East Search	11/04/2014	tdp
Plus Search	11/04/2014	tdp
NPL Search	11/04/2014	tdp

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

/T.P./ Examiner.Art Unit 3661	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	**Art Unit**
	TYLER PAIGE	3661

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

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

CLAIM		DATE								
Final	Original	11/04/2014								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								

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

BIB DATA SHEET

CONFIRMATION NO. 1091

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/105,744	12/13/2013	701	3661	APIO-Crash

APPLICANTS

INVENTORS

Sascha Simon, Warwick, NY;

**** CONTINUING DATA ***************************

This appln claims benefit of 61/740,814 12/21/2012
and claims benefit of 61/740,831 12/21/2012
and claims benefit of 61/740,851 12/21/2012
and claims benefit of 61/745,677 12/24/2012
and is a CIP of 14/072,231 11/05/2013
and is a CIP of 14/095,156 12/03/2013

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
12/24/2013

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /TYLER D PAIGE/ Examiner's Signature	☐ Met after Allowance tdp Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	6	18	3

ADDRESS

The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678
UNITED STATES

TITLE

SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

FILING FEE RECEIVED		
730	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	31	(smart$1phone or smartphone or mobile adj phone or mobile adj device) and (collision near2 detection) and (vehicle or automobile or car) and (magnetic adj field) and (electric adj field)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2014/11/04 10:42

11/4/2014 11:24:39 AM
C:\Users\tpaige\Documents\EAST\Workspaces\14105744_smartphone_crash_detection.wsp

CMT Exhibit 1007, Page 79 of 207
CMT v. Sfara - IPR2024-00952

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Sascha Simon	
Application No.: 14/105,744	Confirmation No.: 1091
Filed: 12/13/2013	Art Unit: 3661
For: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	Examiner: Paige, Tyler D

RESPONSE TO NON-FINAL OFFICE ACTION

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Office Action dated November 6, 2014 (Office Action), please amend the application as follows.

Amendments to the claims begin on page 2 of this response.

Remarks begin on page 8.

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (Amended) A device for use with a vehicle, said device comprising:

a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal;

a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter; and

a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter; ~~and~~

wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

2. (Original) The device of claim 1, wherein said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

3. (Original) The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle.

4. (Original) The device of claim 2,

wherein said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and

wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

5. (Original) The device of claim 1, further comprising a communication component operable to wirelessly communicate with a network.

6. (Original) The device of claim 1, further comprising:

an operating component operable to operate in a first mode and a second mode,

wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal.

7. (Amended) A method for use with a vehicle, said method comprising:

detecting, via a mode-determining component, whether the mode-determining component is in the vehicle;

generating, via ~~a~~ the mode-determining component, an in-vehicle signal;

detecting, via a first detecting component, a first parameter;

generating, via the first detecting component, a first detector signal based on the first detected parameter;

detecting, via a second detecting component, a second parameter;

generating, via the second detecting component, a second detector signal based on the second detected parameter; and

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

8. (Original) The method of claim 7, wherein said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

9. (Original) The method of claim 8, wherein said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.

10. (Original) The method of claim 8,

wherein said detecting a first parameter comprises detecting acceleration along a single axis, and

wherein said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

11. (Original) The method of claim 7, further comprising wirelessly communicating, via a communication component, with a network.

12. (Original) The method of claim 7, further comprising:

operating an operating component in a first mode; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

13. (Amended) A non-transitory, ~~tangible,~~ computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method comprising:

detecting, via a mode-determining component, whether the mode-determining component is in the vehicle;

generating, via ~~a~~ the mode-determining component, an in-vehicle signal;

detecting, via a first detecting component, a first parameter;

generating, via the first detecting component, a first detector signal based on the first detected parameter;

detecting, via a second detecting component, a second parameter;

generating, via the second detecting component, a second detector signal based on the second detected parameter;

operating an operating component in a first mode;

generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

14. (Amended) The non-transitory, ~~tangible,~~ computer-readable media of claim 13, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

15. (Amended) The non-transitory, ~~tangible,~~ computer-readable media of claim 14, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.

16. (Amended) The non-transitory, ~~tangible,~~ computer-readable media of claim 14, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that

said detecting a first parameter comprises detecting acceleration along a single axis, and

said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.

17. (Amended) The non-transitory, ~~tangible,~~ computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising wirelessly communicating, via a communication component, with a network.

18. (Amended) The non-transitory, ~~tangible,~~ computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising:

operating an operating component in a first mode; and

switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

REMARKS

An Information Disclosure Statement is filed concurrently herewith.

Applicant thanks the Examiner for conducting the telephone interview on December 18, 2014. The Examiner's comments on the application were greatly appreciated.

Claims 1-18 are pending in the application.

Claims 13-18 were objected to as discussed in paragraph 1 of the Office Action. Claims 13-18 have been amended to change "non-transitory, tangible, computer-readable media" to -- non-transitory, computer readable media -- as suggested by the Examiner. It is respectfully requested that the outstanding objection to the claims be withdrawn.

As discussed in paragraph 5 of the Office Action, claims 1-18 were rejected under 35 U.S.C. § 103 as being unpatentable over Oesterling US 2013/0130639 in view of Breed US 2007/0021915. It is respectfully submitted that claims 1-18, as amended, are patentable over the combination of Oesterling in view of Breed within the meaning of 35 U.S.C. § 103.

The invention is drawn a system and method for determining, via a communication device of a user within a vehicle, whether the vehicle has been in a crash. To accomplish this, a determination is first made as to whether the communication device is actually in the vehicle. This determination helps avoid "false positive" or erroneous crash detections. An example of a false positive crash determination may include when a person is walking outside of a vehicle and drops the communication device, wherein the rapid deceleration of the communication device hitting the ground emulates a rapid deceleration associated with a vehicle crash. The aspect of first determining whether the communication device is in a vehicle is discussed in the specification, for example in paragraphs [0043]-[0044] and with reference to S304 in FIG. 3.

The novel aspect discussed above is recited in independent claims 1, 7 and 13, as amended. Specifically, claim 1 recites, *inter alia*, "a mode-determining component operable ***to detect whether the device is in the vehicle and to generate an in-vehicle signal***" (***Emphasis Added***). Similarly, each of independent claims 7 and 13 recite, *inter alia*, "***detecting, via a mode-determining component, whether the mode-determining component is in the vehicle***," and "***generating, via the mode-determining component, an in-vehicle signal***" (***Emphasis Added***).

It is respectfully submitted that Oesterling and Breed, either alone or in combination, fail to disclose at least the above identified limitations.

Oesterling discloses, in paragraph [0025], that a method of determining a crash is triggered after "an occupant of a vehicle 12 provide (sic) a voice command via microphone 32 and/or manual command via pushbutton 34 to enable monitoring for any vehicular crash."

Oesterling fails to disclose a mode-determining component that determines whether a device is in a vehicle. Oesterling will not address the problems addressed by the present invention - namely how a communication device determines that it is in a vehicle to reduce the likelihood of erroneously detecting a vehicle crash. More importantly, Oesterling fails to disclose: a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal, as recited in independent claim 1; or detecting, via a mode-determining component, whether the mode-determining component is in the vehicle, and generating, via the mode-determining component, an in-vehicle signal, as recited in independent claims 7 and 13.

Breed is cited as teaching the measuring and use of a second detecting component of a vehicle collision with a mobile device. Irrespective of whether this assertion is correct, it is respectfully submitted that Breed fails to disclose: a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal, as recited in independent claim 1; or detecting, via a mode-determining component, whether the mode-determining component is in the vehicle, and generating, via the mode-determining component, an in-vehicle signal, as recited in independent claims 7 and 13.

Because Oesterling and Breed fail to disclose: a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal, as recited in independent claim 1; or detecting, via a mode-determining component, whether the mode-determining component is in the vehicle, and generating, via the mode-determining component, an in-vehicle signal, as recited in independent claims 7 and 13, it is submitted that a combination of Oesterling in view of Breed additionally fails to disclose that which is recited in each of independent claims 1, 7 and 13.

Because the combination of Oesterling in view of Breed fails to disclose that which is recited in independent claims 1, 7 and 13, as amended, it is submitted that independent claims 1, 7 and 13, as amended, are patentable over the combination of Oesterling in view of Breed within the meaning of 35 U.S.C. § 103.

Claims 2-6, 8-12 and 14-18 are dependent upon claims 1, 8 and 13, respectively, and therefore include all the limitations therein. As such, it is respectfully submitted that claims 2-6, 8-12 and 14-18 are additionally patentable over the combination of Oesterling in view of Breed within the meaning of 35 U.S.C. § 103.

In view of the above discussion, Applicant believes the pending application is in condition for allowance, an indication of which is respectfully solicited.

Dated: December 29, 2014

Respectfully submitted,

By: /John T. Whelan/

John T. Whelan
Reg. No. 32,448
Attorney For Applicant

Customer No.: 54671

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Sascha Simon

Application No.: 14/105,744	Confirmation No.: 1091
Filed: 12/13/2013	Art Unit: 3661
For: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH	Examiner: Paige, Tyler D

INFORMATION DISCLOSURE STATEMENT (IDS)

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

Dear Commissioner:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08a and PTO/SB/08b. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed reference.

Dated: December 29, 2014

Respectfully submitted,

By /John T. Whelan/
John T. Whelan
Reg. No. 32,448
Attorney For Applicant

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	14/105,744
Filing Date	12/13/2013
First Named Inventor	Sascha Simon
Art Unit	3661
Examiner Name	Paige, Tyler D
Attorney Docket Number	APIO-Crash

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US- 2008/0203814 A1	08/28/2008	Kamiya, Shinji	
	AB	US- 2009/0037056 A1	02/05/2009	Erb, Yannick	
	AC	US- 2012/0123634 A1	05/17/2012	Shimizu, Takashi	
	AD	US- 5,785,347 A	07/28/1998	Adolph et al.	
	AE	US- 7,136,828 B1	11/14/2006	Allen et al.	
	AF	US- 2003/0029345 A1	02/13/2003	Tiernan et al.	
	AG	US- 2009/0309709 A1	12/17/2009	Bevacqua et al.	
	AH	US- 2004/0257208 A1	12/23/2004	Huang et al.	
	AI	US- 2011/0301795 A1	12/08/2011	Failing, Bryan	
	AJ	US- 2006/0085153 A1	04/20/2006	Oesterling et al	
	AK	US- 2011/0169654 A1	07/14/2011	Ketari, Nissaf	
	AL	US- 2006/0089153 A1	04/27/2006	Sheynblat, Leonid	
	AM	US- 2008/0287143 A1	11/20/2008	Banks et al.	
	AN	US- 2004/0152471 A1	08/05/2004	Macdonald et al.	
	AO	US- 2012/0208517 A1	08/16/2012	Zohar, Tsaba	
	AP	US- 2014/0180563 A1	06/26/14	Simon, Sascha	
	AQ	US- 2014/0180615 A1	06/26/14	Simon, Sascha	
	AR	US- 2014/0179348 A1	06/26/14	Simon, Sascha	
	AS	US- 2014/0179353 A1	06/26/14	Simon, Sascha	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	AT	JP 2007-183865 A	07/19/2007	Denso Corp.		
	AU	WO 03-095276 A1	11/20/2003	Cotty et al.		
	AV	JP 10-260241 A	09/29/1998	Honda Motor		
	AW	EP 0461888 A2	12/18/1991	Exxon Research		
	AX	JP 2009-177758 A	08/06/2009	Takashi, Takashima		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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 (1-800-786-9199) and select option 2.

PTO/SB/08b (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

	Complete if Known
Application Number	14/105,744
Filing Date	12/13/2013
First Named Inventor	Sascha Simon
Art Unit	3661
Examiner Name	Paige, Tyler D
Sheet 2 of 2	Attorney Docket Number APIO-Crash

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	AY	PCT/US2013/076432 International Search Report and Written Opinion, 04/09/2014, Ham, Joung Hyun.	
	AZ	PCT/US2013/076410 International Search Report and Written Opinion, 04/07/2014, Song, Ho Keun.	
	BA	PCT/US2013/076426 International Search Report and Written Opinion, 04/09/2014, Ham, Joung Hyun.	
	BB	PCT/US2013/076440 International Search Report and Written Opinion, 04/09/2014, Sohn, Byoung Cheol.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 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 2 hours 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, 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 (1-800-786-9199) and select option 2.

Pub. No.: WO/2003/095276 **International Application No.:** PCT/IB2003/001852
Publication Date: 20.11.2003 **International Filing Date:** 13.05.2003

IPC: ***B60R 25/00*** (2013.01), ***B60R 25/25*** (2013.01)

Applicants: **COTTY, Darryl, Edward, Albert** [ZA/ZA]; (ZA)

Inventors: **COTTY, Darryl, Edward, Albert**; (ZA)

Agent: **BOWMAN GILFILLAN INC. (JOHN & KERNICK)**; P.O. Box 3511, Halfway House, Midrand 1685 (ZA)

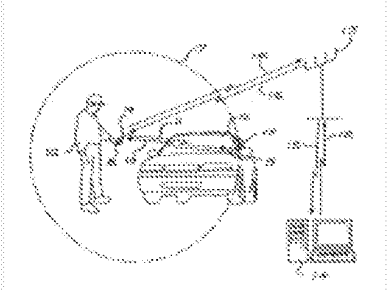
Priority Data: 2002/3771 13.05.2002 ZA
2002/9741 02.12.2002 ZA

Title

(EN) VEHICLE IDENTIFICATION SYSTEM

(FR) SYSTEME D'IDENTIFICATION DE VEHICULES

Abstract:



(EN) The invention discloses a vehicle identification system including a first vehicle identification device (5) that is securable to a vehicle and comprising a first data repository for vehicle specific information, a first transmitter configured to transmit a first data output signal (10) upon reception of an activation signal, the first data output signal including vehicle specific information from the first data repository, and a first receiver configured to receive a data update signal to update the first data repository; a vehicle identification device reader (8) comprising a reader transmitter configured to transmit an activation signal, and a reader receiver configured to receive the first data output signal (10) from the first vehicle identification device (15); and a database (14) of vehicle specific information to which the reader (8) is connectable for comparison of the vehicle specific information with the first data output signal.

(FR) Cette invention se rapporte à un système d'identification de véhicules, qui comprend un premier dispositif d'identification de véhicules (5) pouvant être fixé à un véhicule, et comprenant un premier répertoire de données destiné à contenir les informations spécifiques du véhicule, un premier émetteur configuré pour transmettre un premier signal de sortie de données (10) à la réception d'un signal d'activation, ce premier signal de sortie de données contenant les informations spécifiques du véhicule provenant du premier répertoire de données, et un premier récepteur configuré pour recevoir un signal d'actualisation de données destiné à actualiser le premier répertoire de données; un lecteur de dispositif d'identification de véhicules (8) comprenant un émetteur de lecteur configuré pour transmettre un signal d'activation, et un récepteur de lecteur configuré pour recevoir le premier signal de sortie de données (10) en provenance du premier dispositif d'identification de véhicules (15); ainsi qu'une base de données (14) qui est destinée à contenir les informations spécifiques du véhicule et à laquelle le lecteur (8) peut être connecté pour permettre la comparaison des informations spécifiques du véhicule avec le premier signal de sortie de données.

Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
African Regional Intellectual Property Org. (ARIPO) (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW)
Eurasian Patent Organization (EAPO) (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM)
European Patent Office (EPO) (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR)
African Intellectual Property Organization (OAPI) (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Publication Language: English (EN)
Filing Language: English (EN)

VEHICLE IDENTIFICATION SYSTEM

FIELD OF THE INVENTION

This invention relates to a vehicle identification system and apparatus for use with such system.

BACKGROUND TO THE INVENTION

Vehicles are identified by various means including registration number plates, license tokens, manufacturer's engine number, chassis number and vehicle identification number (VIN), and so forth.

All of these rely on visual inspection of a number or code secured to a vehicle. Problems with this include that the numbers or codes may be obscured with mud and grime; they may have been physically damaged or removed; and the numbers or codes are, at least in some instances such as with vehicle registration number plates, easily alterable.

Electronic identification means are also available, which include a system that makes use of a transponder attached to a vehicle to identify the vehicle. With such a system the transponder is pre-programmed with a specified code that is used to identify the vehicle. The code is transmitted upon activation of the transponder and received by a dedicated receiver, which is programmed to interpret the code. This allows the receiver to display the information stored on the transponder. Such a system is used to establish the identity of a vehicle and allows the detection of stolen vehicles by comparison of the data received from the transponder on a vehicle to data stored on a computer database.

A problem with this type of system is that the status of the vehicle has to be determined by comparison of the vehicle particulars with the information in the database. This is in effect just an automated version of the traditional manner of status checking which involved dialling vehicle particulars to a dispatcher who would check the vehicle status on a computer linked to the database.

The existing systems also do not allow for information other than vehicle identification information to be stored on the transponder.

OBJECT OF THE INVENTION

It is an object of this invention to provide a vehicle identification device to alleviate at least some of the abovementioned problems.

SUMMARY OF THE INVENTION

In accordance with this invention there is provided a vehicle identification system including a first vehicle identification device being securable to a vehicle and comprising a first data repository for vehicle specific information, a first transmitter configured to transmit a first data output signal upon reception of an activation signal, the first data output signal including vehicle specific information from the first data repository, and a first receiver configured to receive a data update signal to update the first data repository; a vehicle identification device reader comprising a reader transmitter configured to transmit an activation signal, and a reader receiver configured to receive the first data output signal from the first vehicle identification device; and a database of vehicle specific information to which the reader is connectable for comparison of the vehicle specific information with the first data output signal.

There is further provided for the system to include a second vehicle identification device being securable to the vehicle and comprising a second data repository for vehicle specific information, and a second transmitter configured to transmit a second data output signal upon reception of the activation signal, the second data output signal including vehicle specific information from the second data repository; and for the reader to be configured to receive the second data output signal for comparison with the vehicle specific information in the database.

There is also provided for the first and second vehicle identification devices to include secure unique identification numbers, for the unique identification number of the first vehicle identification device to be included in the data repository of the second vehicle identification device, and for the unique identification number of the second vehicle identification device to be included in the data repository of the first vehicle identification device.

There is further provided for the reader to receive the data update signal including updated information from the database, and to transmit the data update signal to the first vehicle identification device.

There is also provided for the reader to be connectable to the database by wireless connection preferably a radio wave connection including GPRS and GSM connections.

There is also provided for the reader to include display means configured to display the information from the first and second data output signals in a predetermined format.

There is still further provided for the reader to be a handheld reader, alternatively for the reader to be incorporated into a roadside structure or in a road surface.

There is further provided for the vehicle specific information to include vehicle identification, vehicle license status, traffic fine information, vehicle roadworthy status, insurance status, and vehicle theft status.

There is still further provided for the first data repository to include also vehicle owner information, vehicle driver information, and commercial information.

There is also provided for the vehicle owner and vehicle driver information to include obligatory legal information including issued warrants of arrest information, vehicle owner and vehicle driver identification, drivers licence demerit point status, vehicle owner and vehicle driver medical information including blood type, allergies, and known special medical conditions, and emergency contact details including contact telephone numbers.

There is further provided for the commercial information to include security access information, commercial transactions, and club membership passes.

There is further provided for the vehicle owner information, vehicle driver information, and commercial information to be included in the first data output signal only upon reception of an authorization signal.

There is further provided for the information in the first data repository to be classified, for the information from each class to be transmitted only upon reception of the authorization signal, for the authorization signal to allow transmission of more than one class of information, and for the reader to transmit the authorization signal.

There is further provided for the reader to include input means for an access code, for the access code to be biometric data including fingerprints or retina scans, and for the access code to determine the authorization signal that the reader transmits.

There is further provided for the activation signal to comprise a magnetic field and for the vehicle identification devices to be powered by the magnetic field, alternatively for the devices to be connected to a power source, preferably integrated with the devices alternatively located remote from the device and connectable to the devices by means of a hard wire connection.

There is still further provided for the power source to include a solar energy converter configured to power the vehicle identification devices, alternatively configured to charge the power source.

There is also provided for the first and second vehicle identification devices to be transponders.

There is still further provided for the vehicle identification devices to be embeddable in a vehicle windscreen; alternatively to be integratable with a vehicle identification token, preferably a licence disc.

A further feature of the invention provides for the system to include a third vehicle identification device comprising a third data repository, and a third transmitter configured to transmit a third data output signal which includes vehicle specific information from the third data repository.

There is still further provided for the database to be connected to an audit database and to a vehicle registration database, for the vehicle specific information of the database to update the data on the vehicle registration database,

and for the audit database to be used to audit transactions between the database and the vehicle registration database.

There is further provided for a vehicle registration authority to operate the vehicle registration database and for an independent auditor to operate the audit database.

A still further feature of the invention provides for a method of operating a vehicle identification system including the steps of registering a vehicle in the database by a first authorised agent, issuing at least first and second vehicle identification devices, securing the first vehicle identification device to a first portion of the vehicle by the first agent, securing the second vehicle identification device to a second portion of the vehicle by the first agent, activating at least the first vehicle identification device to transmit a first data output signal, and receiving the first data output signal by a reader as defined above.

There is also provided for the method to include comparison of the vehicle specific information from the first data output signal with the vehicle specific information on the database, for changes to be transmitted to the reader, and for a data update signal to be transmitted from the reader to the first vehicle identification device.

There is further provided for the method to include the steps of displaying the information from the first data output signal on display means of the reader.

There is further provided for the step of registering the vehicle to include recordal of the vehicle identification information and vehicle owner identification information by the first agent, and transmission of this identification information to the database for updating thereof.

There is further provided for the vehicle owner identification information to at least include a photograph of the driver, a driver's licence number and the identification number of the driver.

There is further provide for the agent to confirm the accuracy of vehicle identification information and the vehicle owner identification information by him by recording biometric signature of himself, specifically a fingerprint or a retina scan.

There is further provided for the method to include the step of issuing a second and third vehicle identification device to the vehicle owner by the first agent, securing the second vehicle identification device to the vehicle by the first agent, issuing the first vehicle identification device to the vehicle owner by a second authorised agent upon presentation of the third vehicle identification device, and securing the first vehicle identification device to the vehicle.

There is further provided for the first and second agents to operate from different locations, for the first agent to be an authorised retailer, and for the second agent to be a vehicle registration authority employee.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention will be described below by way of example only and with reference to the accompanying drawings in which:

Figure 1 is a diagrammatic view of a first vehicle identification device according to the invention, secured to a licence disc holder;

Figure 2 is a schematic view of a vehicle identification system according to the invention.

DETAILED DESCRIPTION OF THE DRAWINGS

A first vehicle identification device is shown in Figure 1 , and a vehicle identification system is shown in Figure 2.

The first vehicle identification device is first transponder (1) that includes a first data repository (2), receiver (3) and a first transmitter (4). The first data repository (2) includes vehicle specific information. The first transmitter (4) is

configured to transmit a first data output signal (10) that includes the vehicle specific information upon reception of an activation signal, and the receiver (3) is configured to receive a data update signal (11) to update the first data repository (2).

The first transponder (1) is secured to a licence disc holder (5), which is in turn secured to a vehicle windscreen (6). The system also includes a second vehicle identification device, which is a second transponder (17) secured to the rear window (not shown) of the vehicle. The second transponder (17) includes a second data repository (not shown) for vehicle specific information, and a second transmitter (not shown) configured to transmit a second data output signal including vehicle specific information from the second data repository upon reception of the activation signal.

The transponders (1 , 17) are energized by an external magnetic field (7), which is generated by a magnetic field source, which in this embodiment is a vehicle identification device reader (8). The reader (8) includes a transmitter (not shown), and a receiver (9) that is configured to receive the first data output signal (10). In this embodiment the external magnetic field is also the activation signal. However, it is possible to transmit a specific activation signal to the transponders (1 , 17), which will cause the transponders (1 ,17) to transmit the data output signals.

The magnetic field (7) energizes the transponders (1 ,17) to transmit the first data output signal (10) and second data output signal (not shown), which is received by the reader (8). The reader (8) transmits a data signal (12) via a radio wave network (13), which is typically a GSM or GPRS signal, to a computer database (14), which includes updated vehicle specific information. Upon reception of the data signal (12) from the reader (8) the database (14) transmits an updated data signal (15) that includes updated vehicle specific information, also via the radio wave network (13), to the reader (8). The data signal (15) is received by the receiver (9) and processed by the reader (8).

The updated vehicle specific information is then transmitted to the first transponder (1) only and the data in the first repository is updated. The data update signal (11) includes a secure authorization signal that allows the first repository (2) to be updated. Without this authorization signal the data in the first repository (2) cannot be altered.

When the reader receives the data output signal (10) from the transponder (1) it also displays the information in a predetermined format on a display (not shown) on the reader (8) for information of the authorized person (16) operating the reader (8). This person is typically a law enforcement officer at roadblock, but it could also be a law enforcement officer doing random checks on vehicles parked in a road, and so forth. Information fields that relate to the validity of an aspect of the vehicle, such as the roadworthiness of the vehicle which is valid for a fixed time period, do not have to be transmitted to the database for confirmation of the status. The specific field in the transponder will show when the last test was conducted and the reader's software will automatically calculate the date on which such test will expire.

To deter tampering with the first and second transponders (1 , 17) also have unique identification numbers, which cannot be altered. Upon issuing the unique identification number of the first transponder is recorded in the second transponder and vice versa. This allows the transponders to verify each other upon activation. This information is also received by the reader (8) and confirmation of the verified transponders is displayed on the reader (8). If there is a problem with these numbers the reader (8) will alert the operator thereof by one or more of a flashing light, an audible alarm, or an special display on the display screen of the reader (8).

It is therefore possible to obtain secure vehicle specific information from the first and second transponders (1 , 17) when the reader queries the transponders (1,17).

Depending on the frequency of updating the information will also be very accurate. Information such as the vehicle registration number, VIN, engine number, chassis number and so on will not in the normal course of events change and will therefore always be up to date. Only when ownership of the vehicle changes may information such as the vehicle registration number change, but this will be updated in new set of transponders (1 , 17) that will be issued to the new owner and will then remain valid until the vehicle ownership or vehicle details change.

Vehicle specific information that may change includes vehicle license status, vehicle roadworthy status, insurance status, traffic fine information and vehicle theft status. This information will obviously have to be updated as frequently as possible to keep the data in the transponder repository accurate.

The information in the first repository (2) also includes non-vehicle specific information, such as vehicle owner information, vehicle driver information, and commercial information.

The vehicle owner and vehicle driver information include issued warrants of arrest information; vehicle owner and vehicle driver identification; drivers licence demerit point status, vehicle owner and vehicle driver medical information including blood type, allergies, known special medical conditions, and emergency contact details including contact telephone numbers.

The commercial information includes security access information, commercial transactions, club membership passes, and so forth.

This allows non-law enforcement officers to also query the first transponder (1) for a response. The information in the first repository (2) is classified and depending on the authorization signal transmitted by the reader (8), certain classes of information will be transmitted by the first transponder (1).

For example, medical personnel at the scene of an accident may be allowed to access medical information of the vehicle owner or driver. This information will not be available to, for example, a security guard at a controlled access point. Only commercial information relevant to the controlled access of that area will be available to the guard.

The reader (8) includes a facility to enter an access code, which allows different classes of information to be transmitted to the reader. It is also possible to provide readers that will by default only allow specific classes of information to be read.

It is therefore possible for a law enforcement officer to query the vehicle at any time or location and obtain accurate information from the transponder about the vehicle identity, and also the status of for example traffic fines, warrants of arrest and so forth. The officer need not be in connection with the database, which is not always possible due to technical, financial, logistical, or geographical constraints.

The procedure to register a vehicle in the system includes the capturing of data from the vehicle owner by an authorised agent. The data includes the identity number and drivers licence number of the owner, as well as recording a digital picture of the owner.

The vehicle information is also recorded at this time, which includes the vehicle registration number, VIN, engine and chassis numbers. This is transmitted to the database (14) where it is compared with data on the network and if verified confirmation of this is transmitted to the agent. At this point the owner is also allowed to specify commercial and additional owner and diver information, which he may wish to register on the first transponder.

The computer system operated by the agent is now allowed to produce a second and third transponder, as described above. The second transponder, which only includes vehicle specific information, is secured to the rear window of the vehicle. The third transponder is used to identify the vehicle owner when he proceeds to a local authority licence office, where he has to obtain the first transponder.

The owner proceeds to the local authority licence office where he presents himself and the third transponder, which is read by a reader as described above. This identifies the owner to the licence office by displaying the picture of the owner, which was captured by the authorised agent, to the licence office employee. It also displays the drivers licence number. This is verified by comparison with the owner's driver's licence, which he has to produce at this time.

With the verified driver's licence and picture the computer system allows the first transponder, which is secured to a licence token in the form of disc and it is secured to the front windscreen of the vehicle.

Both the first and second transponders are now secured to the vehicle on different windscreens. The transponders are secured to the windows in a manner to prevent removal without destroying the transponders. This is done to prevent fraud.

If the owner wishes to update any information on the first transponder he has to visit an agent who will inspect the vehicle to confirm the identity thereof. As before the accuracy of the data is confirmed by the agent by recording his own biometric signature on the system. Once the information has been updated on the database the system produces new second and third transponders. The new second transponder is secured to the rear window and the old second transponder is removed. As before the owner takes the new third transponder to the local authority licence office for issuing of a new first transponder.

The information on the database (14) is updated to a vehicle registration database, such as the South African NATIS database. This allows for controlled flow of information between the databases. The system also includes a third audit database, which is controlled by an independent auditor, which in this embodiment is a reputable international auditing firm. The audit database checks all transactions between the database (14) and the vehicle registration database for anomalies and fraud. If any exceptions occur such a transaction may be traced completely and if there has been fraud the appropriate action may be taken. This will include updating the system to reflect the fraudulent status of the transponders issued to the specific vehicle owner.

When the specific vehicle next passes through a checkpoint or an updating point the first transponder will be updated with this information, which will allow the vehicle to be impounded and the owner apprehended.

It is envisaged that updating points will be located at convenient locations throughout an area such as a city, for example at busy intersections, tollgates, parking area entrances and the like. Such an updating point will have a reader which will read the transponders when the vehicle passes over it. When a vehicle, for example, waits for a traffic light to change the reader can activate the transponder and update the information on the transponder at that time. Such updating can occur a number of times daily when vehicles, especially in a city, spends time waiting at intersections.

It is also possible when a vehicle has for example been stolen to not only update the status of the vehicle to that of stolen on the transponder, but also to notify the law enforcement authorities of the location of that vehicle. With an adequate number of readers in an area it will be possible to track the location of the vehicle to enable recovery of the vehicle and apprehension of the thieves.

It will be understood that this is only one embodiment of the invention. It is possible to alter some aspects of the embodiment without departing from the scope of the invention.

It is for instance possible to provide a transponder with a dedicated power source such as an integral battery, or a hard wire connection to a power source in the vehicle. It is also possible to incorporate a solar energy converter in the licence disc, which may be used to power the transponder or charge a battery that powers the transponder.

It is also possible for the reader to incorporate a barcode reader, which cooperates with a barcode traffic fine book. This will enable a traffic official to quickly capture details of a traffic offender by reading the first transponder, scan the barcode traffic fine book for the specific offence and to electronically capture the relevant details thereof. This will also enable traffic fines to be sent to drivers electronically, which reduces turnaround time on the recovery of fines.

Application Number: 91305326 **Application Date:** 12.06.1991
Publication Number: 0461888 **Publication Date:** 18.12.1991
Publication Kind : B1

IPC: G07F 15/00
G 06K
G07B 15/02
G07G 1/12
G06Q 50/00
G08G 1/017
G07C 5/00
B67D 7/14
B67D 7/24
G 07C

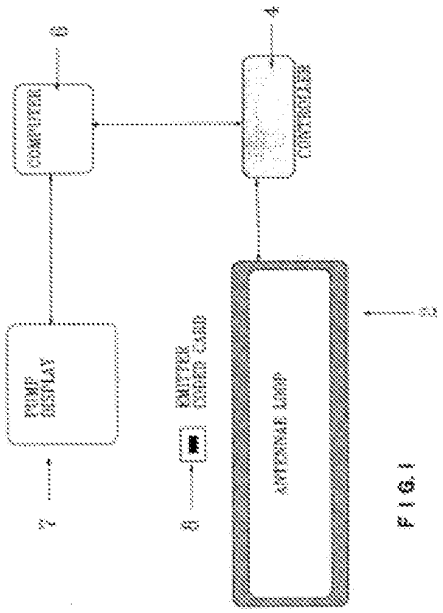
Applicants: EXXON RESEARCH ENGINEERING CO

Inventors: RANDELMAN ROBERT ELLIS
CHANCE RONALD RICHARD

Priority Data: 07536820 12.06.1990 US

Title: **(FR)** Prestation de service et identification automatique d'un véhicule et facturation du service au propriétaire du véhicule.
(EN) Automatically identifying and providing service to a vehicle and billing the vehicle owner for the service provided.
(DE) Automatische Identifizierung und Serviceleistung an einem Fahrzeug und Rechnungsstellung der Serviceleistung für den Fahrzeugeigner.

Abstract:



F I G. 1

(EN) The present invention is a system and method for identifying a vehicle in a prescribed area and associating services with the vehicle. For automatically identifying and providing service to a vehicle and for billing the vehicle owner for the service provided, the vehicle's arrival in the service area is detected by an antenna (2) activating an emitter (8) on the vehicle, which emitter transmits a coded signal of the vehicle identity to controller (4), which converts the received signal into a data bit stream received in a computer (6). The computer calculates and stores costs for services provided to each vehicle owner.

[0001] The invention relates to a system and method for automatically identifying and providing service to a vehicle moving in a prescribed area. An automatic vehicle recognition and service data transmission system is already known from citation GB-A-2 224 418. This known system comprises a transmitter attached to the vehicle and a receiver at a vehicle station for receiving information transmitted by the transmitter about fuel consumption, mileage, vehicle information and other relevant data. The transmitter is triggered when the vehicle reactor the station. In particular, the present invention is a system to automatically identify vehicles and correlate purchased products and services with vehicle-owner customers of service stations, convenience stores or other similar establishments, for billing vehicle owners for services provided. In addition, other vehicle or customer information can be transferred to inform, track or notify both customers and providers.

[0002] There are many instances when vehicle information is required rather than operator information. These may include situations such as: notifying individuals of vehicle maintenance; providing the customer with vehicle information or promotions during fuel filling; build upon customer or vehicle recognition, tracking or notification; provide alternatives for credit/debit card billing, especially for fleet billing; and provide records of service or maintenance for a specific car.

[0003] According to the invention from one aspect, there is provided a system for automatically identifying and providing service to a vehicle and billing the vehicle owner for the service provided, comprising:

a) means for determining electronically whether an approaching vehicle is stopping for service,

b) a file, database or other computer storage device, containing vehicle, and service cost or service type, records,

c) means for identifying said vehicle electronically as it enters a service area in order to associate it with records in said computer storage device,

d) means for preventing any other electronic identification by any other nearby service areas, when the vehicle has stopped in said service area and has been electronically identified,

e) means for providing service to said stationary identified vehicle,

f) means for transferring data representing the cost or type of said service provided, to said records in said computer storage device, and

g) means for calculating and storing all costs for service, or type of service information in said records for a given billing period, and for invoicing said cost to said vehicle owner.

[0004] According to the invention from another aspect there is provided a method for automatically identifying and providing service to a vehicle and billing the vehicle owner for the service provided, comprising:

a) determining electronically whether an approaching vehicle is stopping for service,

b) identifying said vehicle electronically as it enters a service area in order to associate it with records in a file, database, or other computer storage devices,

c) preventing any other electronic identification from other nearby service areas, when the vehicle has stopped in said service area and has been electronically identified,

d) providing service to said stationary identified vehicle,

e) transferring data representing the cost or type of said service provided, to said records in said computer storage device, and

f) calculation and storing all costs for service, or type of service information in said records for a given billing period, and for invoicing said cost to said vehicle owner.

[0005] In a preferred embodiment, the system includes an antennae which emits an electromagnetic field at a predetermined frequency. This field causes an emitter (card) affixed to the vehicle to be energised when the vehicle approaches the vicinity of the antennae. The emitter responds by sending out an encoded electromagnetic signal. The system includes a controller which performs two functions. These functions may be performed by separate units or combined into one electronic unit. One function is to detect the signal by the emitter and convert it into a data stream in the computer. Electronic equipment that identifies vehicles is well known in the art, see e.g. U.S. 4,782,342 and U.S. 4,888,474. In addition, the controller may relay the information back to the card where it may be stored for later transmission, and, for this purpose, the controller has the second function of regulating the power and frequency of the antennae. In this capacity, the card serves as a transponder. A computer then utilizes the data stream along with accounting or billing information and stores the data for later use.

[0006] The present method and system allows for automatically recognizing, identifying and servicing a vehicle and invoicing the vehicle owner which may be an organization such as a company or government entity, e.g., school district (hereinafter referred to as a vehicle owner).

[0007] The invention will be better understood by referring, by way of example, to the accompanying drawings, wherein:-

[0008] Figure 1 shows a schematic diagram representing a first embodiment of the invention.

[0009] Figure 2 shows more details of a preferred way of putting the system of Figure 1 into effect.

[0010] Figure 3 is a flow diagram representing one way of detecting vehicles and automatically capturing and utilizing billing information.

[0011] Figure 4 is a flow diagram representing updating customer records, and generating reports and summaries.

[0012] Figure 1 shows the components of one embodiment of the system. The system includes a number of components: an antennae (2) which outputs a predetermined radio frequency; an electronic device on a customer-vehicle, consisting of an inductor loop and integrated circuit package, termed a "card" (8), which stores information and transmits said information on another predetermined frequency when activated by the radio frequency of the antennae; an electronic box, termed "controller" (4), which translates the received signal from the card (8) into a data bit stream; a computer (6) which receives the data bit stream from the controller and in turn utilizes the received data; and a display (7) (eg. a pump display where the system is utilised in a gasoline service station). In addition computer (6) may relay a data stream back to controller (4), which then broadcasts this data to the card (8) through antenna (2), the broadcast data received by card (8) being stored for later usage.

[0013] Figure 2 shows one configuration of the system in which an antennae (2), being a loop, rod or other radio frequency emitting/receiving device, is embedded in the proximity of the gasoline dispensing pump or area (3). The service pump area is used for illustration only and any service area may be used in the present invention. Other areas considered to be service areas include a pump area, may service area, vending or convenience store area, or any other area within the confines of the station property. This antennae (2) is connected to an electronics box, termed a controller (4), that controls the radio frequency (RF) output signal and detects an RF input signal from card (8). The controller then translates the RF input signal into a computer data stream format. The controller may be located in a housing (5) near the antennae. For example, the housing (5) may be fixed to a support or an overhead canopy. The system may also include a display screen (7) atop or in the vicinity of the pump (9).

[0014] The antennae is always energized and therefore produces an electromagnetic (EM) field in the fueling area. In addition, there is a means of detecting the direction of a vehicle as it approaches the fueling area by using a secondary antennae, computer software and/or hardware. The EM field is in the radio frequency band and is chosen so as to minimize interference from other electronic or RF sources, such as vehicle ignition systems, lighting, or other RF generating sources. In addition, the broadcast band must conform to all applicable legal specifications such as

frequency, power, licensing and bandwidth.

[0015] Placed on a vehicle is a device including an integrated circuit component and a RF coil. This device, termed a "card" (8), is activated when it crosses the EM field provided by the antennae. Circuitry on the card prevents energizing in the presence of a "false" or stray field. Upon activation, the card emits an EM radio frequency pulse or "broadcast" which is then received and decoded by the controller into a data bit stream. Some method of discriminating interfering pulses from those emitted from the card is provided.

[0016] The data bit stream decoded from the radio frequency pulse is then transferred either electronically or optically to a computer, which may be included in the same housing (5) with the controller, where the data is stored and utilized. In addition, the computer may relay back a data stream to the controller, which in turn broadcasts this information back to the card through the antennae system. The card receives the broadcast and likewise stores the information internally for later usage.

[0017] The data bit stream recovered from the card can be utilized in a number of ways, which include, for example, customer accounting, billing, recognition, tracking or promotion. Subsequently vehicle identity, tracking, security, service or maintenance logging and notification may also be accomplished. Vehicle identification is a major difference between the described system and the current use of a credit or debit card. Whereas a credit or debit card identifies a particular individual customer, the present system identifies a particular vehicle irrespective of the vehicle operator. In addition, the information from the data bit stream may be used along with information stored in the computer as a basis for other sensor technologies where vehicle or customer information is required, such as vehicle maintenance alerts, recalls, and specification attainment.

[0018] Figure 3 depicts a flowchart of steps used to perform the previously mentioned embodiment in which a car is identified, the customer is informed, and information is relayed back to the card on the vehicle.

[0019] The method starts with a reset operation (10) in which the loop and controller are cleared of any fault condition and readied for activation. This reset operation may include loading computer files, updating said files or records within those files, setting electronic or other indicating devices to zero or a previously determined initial state. Any communication links between the various elements of the system are reset and, if needed, initialized. This reset operation can be thought of as setting all elements of the system to their nominal operating state. After the completion of the reset operation the system is considered to be ready for operation. A query (12) determines whether or not the device is armed, the term "armed" being defined as the state in which the device and all associated supporting computer devices are ready to receive, transmit, store and/or analyze data; and are controlling the antennae system properly. If this state is logically "False" or for simplicity "NO", then the system is reset (10); if this is state is logically "True" or for simplicity "YES", then display a sign on message (14) and wait for approaching vehicle. At this point the system is armed and considered in a "READY" state. The next operation is to query if a vehicle approaches (16). If NO then reset the system (10); if YES, then energize and receive information from card on the vehicle (18). This step entails waiting for the vehicle card to energize and transmit the previously stored information contained on said card. The next step (20) is to query and determine if indeed the vehicle has stopped moving. This could be done in a variety of ways, however one way would be to continuously receive the same broadcast for the vehicle tag a set number of times, say five. Another way would be to measure the signal strength of the broadcast until it has reached an equilibrium value for a set period of time. This query would account for those customers who are merely driving through the service or fueling area and do not intend to receive fuel products or service. If vehicle is not stopped, i.e., "NO" then reset the system (10); if "YES", then re-receive a broadcast from the vehicle (22). This operation receives the card information and stores said information. The next operation (24) is to query whether or not the broadcast is translated properly into a data bit stream. If "NO", then the broadcast is re-received (22); if "YES", then the data bit stream is stored for later use as a validation point and the capture of the identity or other recognition information is prevented by the other controllers or computers in the area. This operation is termed "Vehicle Lock Out" (26). In a sense, this alerts the other controllers and computers in this, and other adjacent service areas, that an operation is pending on a vehicle and they are not to recognize it.

[0020] At this point a vehicle has been recognized and would now be ready to obtain services. The next operation would be to dispense or administer products and or services and record that information (28). While services are

being administered, information may be sent to a customer display (30). It should be note.d that this operation (30) may take place during or after any proceeding or succeeding steps. This step is described here as only an illustration. Next the card is interrogated and a broadcast is re-received (32). The broadcast may be received continuously from step (22) through (32) until services are ceased, for simplicity (32) is termed "a second time." It is assumed that this broadcast is received successfully and understood that if this is not the case, then the card will be interrogated until such a time that a suitable broadcast is received that can be translated into a data bit stream. This data bit stream is then stored as the second validation point. The next operation (38) queries if the first validation point obtained at (22) is identical to the second validation point obtained at (32). In addition, cross checking or otherwise validating credit or other billing information may be performed. This may include verifying authorized operators. If "NO", the validation points do not match and this transaction is considered invalid (34). An alert (36), such as an alarm, is sounded so that an attendant or other employee or supervisor may be notified. In this case of an invalid transaction, manual recording or intervention may be required. After this alarm or alert, which may have to be cleared or otherwise acknowledged by an attendant or employee, the system is then reset (10). If the query (38) is "YES" then the vehicle is considered authorized, the transaction valid and accounting or other business or statistical data, which may include customer preferences and/or services rendered, are logged (40). This logging operation may entail updating customer records, writing appropriate receipts, updating database files and/or transmitting information to other computers. Details of this operation are provided in Figure 4.

[0021] The next operation (42) queries if information would like to be relayed back to the card. This information may be service records or history, accounting, customer preference, or other information which one would want to be associated with a vehicle rather than to an individual.

[0022] If this query is "NO", that is that no relay information is to be sent, then the next operation would be unlocking the controllers (48) described below.

[0023] If this query is "YES" then the information is formulated in a computer, translated into an appropriate data bit stream code, which may be encoded in any fashion, and then broadcasted to the card. The card receives the broadcast, likewise translates said broadcast into a data bit stream and stores said data bit stream electronically within the card's electronic package. This operation is termed "relaying" and is depicted as operation (44) on Figure 3. The next operation (46) queries if this relayed information is received properly. This operation entails having the card to broadcast the stored information and the data bit stream resulting from this broadcast is compared to the data bit stream formulated in operation (44). If query (46) is "NO" then the data bit stream is rebroadcasted to the card (44). If this query is "YES" then this information has been stored onto the card correctly and the next operation may proceed.

[0024] The next operation (48) is to unlock the controllers and in so doing alert the other computers that a transaction is completed with this identified vehicle. Information about the transaction may be transferred to the other controllers, computers or other devices that may analyze, store, or otherwise use the transaction information. These computers are not limited to those associated with a particular service facility, but may in fact be a computer network or supervisory computer located at another location. This procedure (48) so described is the enabling analog of the disabling operation of "lock-out" described as (26).

[0025] The transaction/information gathering cycle is now considered complete and as a final operation (50) the system is driven into a reset condition (10).

[0026] Figure 4 depicts the flowchart of the method used to initialize and log customer records. For the initialization operation, which may include re-initialization of an existing customer, the required data files are set up as described from (52) through (69). The return step (100) would then be a system reset (10).

[0027] In the normal operating mode in which customer files already exist, the method in Figure 4 normally operates after (40). At the START (52) various data are passed from the main. This information is the emitter code information, customer log information, change flag value (CFLG), and transaction information. The method begins with a query (54) if this is a new customer. A new customer or an established customer who requests changes in the components of the various files are signified by a CLFG >0. If "YES" then assign a vehicle code number (VCN) in operation (56). The VCN may be the manufacturer's vehicle identification number (VIN) or another number that uniquely describes a

particular vehicle. If CLFG > 0 and a VCN is passed, then this signifies an existing customer who wishes their records or files, as described below, changed or updated. The term "updating" here refers to altering, creating or appending records or files that are associated with a particular vehicle or customer. Next the customer log file (CLF) is updated (58). The CLF stores the various activities such as purchasing fuel or services and the station, date and time. Next the customer accounting file (CAF) is updated with the new customer record (60). The accounting record contains all data needed for accounting purposes such as billing address, discounts, and authorized purchases or products. The next operation is updating the customer service file (CSF) in operation (62). The CSF contains the service records of work done on an identified vehicle such as last service dates, service records, service items, or maintenance schedules. The next file (64) that is updated for the new customer is the customer preference file (CPF). The CPF stores the customer desired information. This may include various customer preferred product choices, service appointment times, accounting or method of payment choices. The last file updated for a new customer in operation (66) is the customer cross reference file (CXF). The CXF provides a "lookup table" between the VCN, CLF, CAF, CSF, and CPF to simplify sorting, record addition or deletion, and report generation. At the conclusion of operation (66) a customer is fully integrated into the system and the process then continues.

[0028] If the query (54) of a new customer is "NO" then the next operation is to obtain the VCN from the emitter information (69). Note that this operation is also the entry point to update the files to record a transaction. A query (70) tests if the CXF matches the checksums for the VCN, CLF, CAF, CSF, and CPF. The checksums test identifies if the file structure system is still intact and has not been corrupted or altered in any way. If "NO", that is the files are corrupted, then the method proceeds to operation (72) in which the files are rebuilt from a backup set on other means for correcting the corruption. If the query (70) is "YES" then the method proceeds through a sequence of operations that record the components of a transaction. While one order of recording is described here, there are other methodologies and this described method is for illustration only. The overall aspect of the next sequence from (74-100) is that all transactions and operations are recorded in these sequences. Query (73) tests if this is a customer record information change only. If "YES" then continue to (96) which will yield a return (100), if "NO" then continue.

[0029] Operation (74) queries if the Master VCN has been passed at (52). The Master VCN can be thought of as a "security code" that would enable authorized personnel to obtain summary, report, or other compiled or individual transaction activity reports. The Master VCN is not necessarily derived from a physical emitter or card, though it could be, but may be a code that is manually introduced. If Query (74) is "NO" than it is assumed that this transaction is a customer transaction. The next operation (76) is to update the CLF with the appropriate information. Next, the product purchase information is stored on a temporary file called the Temporary Transaction Record (TTR) (78). This operation is also done at Figure 3, operation (28). Next a query (80) determines if service was performed on the vehicle. If "YES", then the CSF is updated (82) and the service accounting information is added to the TTR (83). If "NO" then the method proceeds to (84) where the TTR is written on the CAF to update that file for the completed transaction. The next operation (86) is to update the CXF of the changes made.

[0030] If the query in (74) is "YES", that is that the master VCN has been passed, then a second security code is requested (88). The next operation (89) queries if the second security code is validated. If "NO" then the operation proceeds to (100) to return. If "YES" then a query (90) determines if a report is to generated. If "YES" then that report is generated (91). This report is a general summary of all transactions. If "NO" then the operation proceeds to another query (92) whether a summary report is requested. If "YES" then a summary report is generated (93). This report is similar to a general report, though it covers specified customers, times or other qualifying conditions. If "NO" then the next operation is to query if an accounting summary is to be generated (94). If "YES" then an accounting report is generated (95). This accounting report might be a billing report, accounting summary report, or other such report for accounting or billing purposes. If "NO" then the next operation is (96).

[0031] Operation (96) follows operations (95), (94), (89), (86), or (73) and is described as the "Close-Out". Operation (96) updates the various checksum or file corruption detection methods. The next operation queries if a backup of the files should be made (98). Backups may be made after any specified time period, generally daily or weekly. The decision for the result of this query may be made manually or automatically. If query (98) is "YES" then operation (99) performs this data backup and may transmit information to the controller computers [(4) in Figure 1.]. The final operation of the sequence is (100), RETURNS, which returns operation back to the main operational sequence, (40) of Figure 3.

[0032] The present system may include a number of features. For example, one embodiment may include a display screen (7) as described in operation (30) of Figure 3. The screen may be part of the dispensing pump (9) (see Figure 2) or enclosed in a separate housing nearby or on the pump (9). When the card information is received, the computer would transmit information to the display for notifying the vehicle operator. This information may be promotional in nature or describe information relating to that particular vehicle, customer records or accounts.

[0033] In the preferred embodiment, the data stream is used for automated customer billing, such as fleet billing, local customer accounting or as a replacement or auxiliary to charge or debit cards. Here, fuel or service purchases would be recorded by communicating to the computer a log with the customer vehicle identity. In this way a record of vehicle fuel, product, or services could be stored for later billing or accounting use. Therefore, the purchases are associated with a vehicle rather that an individual vehicle operator. This is very important where purchases are to be billed against a fleet or group of vehicles rather then those persons who utilize the vehicles.

[0034] In a development, vehicle information is provided to other sensors or devices within the service or fueling area. These devices may require information such as customer preferences, vehicle manufacturing specification data or servicing information to perform other services to the vehicle or provide the vehicle operator with vehicle specific information.

2. (EP0461888) Automatically identifying and providing service to a vehicle and billing the vehicle owner for the service provided.

EP

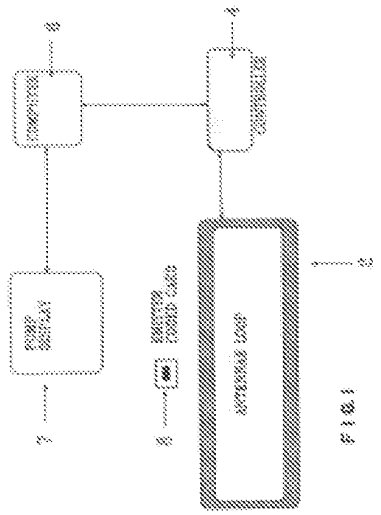


FIG. 1

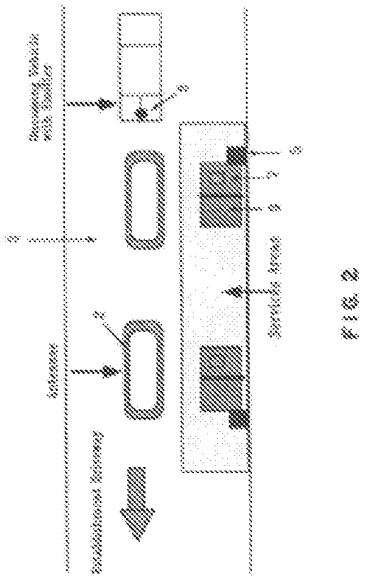


FIG. 2

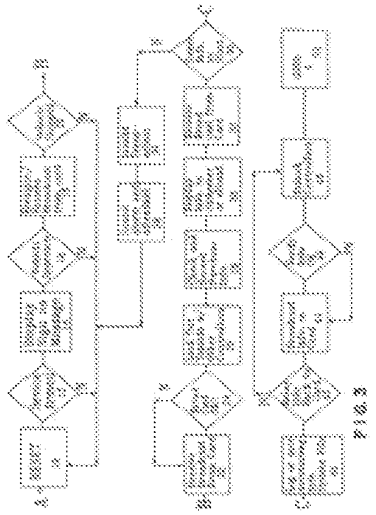


FIG. 3

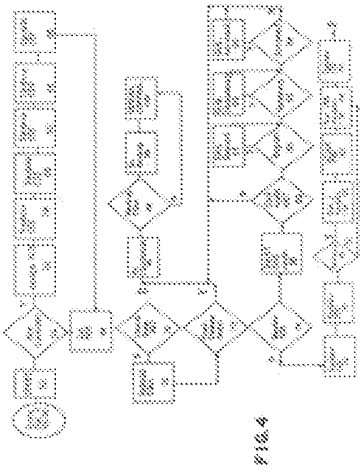


FIG. 4

MENU SEARCH INDEX DETAIL JAPANESE

Please click here for details of Stored Data Information of [DETAIL].

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **10-260241**

(43)Date of publication of application : **29.09.1998**

(51)Int.Cl. **G01S 5/02**

G01C 21/00

G01S 5/14

G08G 1/0969

H04Q 7/34

(21)Application number : **09-064961**

(22)Date of filing : **18.03.1997**

(71)Applicant : **HONDA MOTOR CO LTD**

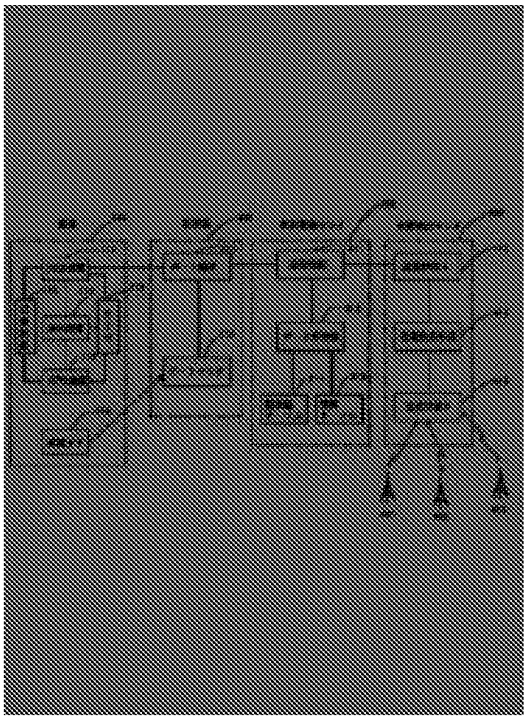
(72)Inventor : **MAKINO HIROAKI**

(54) SYSTEM AND METHOD FOR DETECTING POSITION OF VEHICLE

(57)Abstract:

PROBLEM TO BE SOLVED: To specify a floor where a vehicle is present at a parking lot having a plurality of floors and correctly detect a position, by receiving information of electric field intensities from at least three or more PHS(personal handy phone system) base stations and analyzing the information.

SOLUTION: When a vehicle 100 passes a parking lot gate, a vehicle tug 114 is read. A port terminal 211 transfers a bar code information of the vehicle 100 to a vehicle management center 300. The vehicle management center 300 selects three PHS base stations near the parking lot which receive an ID information emitted from a PHS device 111. A transmitting



CMT Exhibit 1007, Page 109 of 207
CMT v. Sfara - IPR2024-00952

MENU SEARCH INDEX DETAIL JAPANESE

Please click here for details of Stored Data Information of [DETAIL].

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2007-183865**

(43)Date of publication of application : **19.07.2007**

(51)Int.Cl.

G08B	25/08	(2006.01)
B60R	21/01	(2006.01)
B60R	21/00	(2006.01)
G08G	1/09	(2006.01)
G08G	1/13	(2006.01)
B60R	21/16	(2006.01)

(21)Application number : **2006-002408**

(22)Date of filing : **10.01.2006**

(71)Applicant : **DENSO CORP**

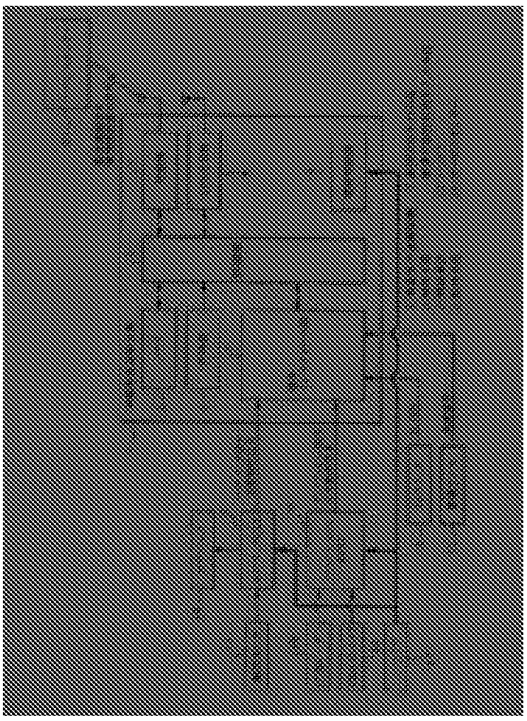
(72)Inventor : **SAKAI HIROSHI**

(54) ON-VEHICLE EMERGENCY NOTIFICATION DEVICE

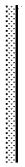
(57)Abstract:

PROBLEM TO BE SOLVED: To perform an emergency notification operation approproately without being made disadvantageous in cost and meager in practicality.

SOLUTION: When a pre-crash signal is input from a pre-crash ECU 10, this on-vehicle emergency notification device 1 transmits an emergency notification signal to a service center 21 even when any air-back signal is not input from an air-back ECU 9. When there is possibility that a vehicle may collide in a status that a power from the battery 17 is normally supplied as an operating power, the emergency notification signal can be transmitted to the service center 21, and the emergency notification operation can be properly executed. In this case, it is not necessary to load any auxiliary battery assuming that power supply from the battery 17 is interrupted. Thus, the on-vehicle emergency notification device is not made disadvantageous in cost and meager in practicality.



CMT Exhibit 1007, Page 111 of 207
CMT v. Sfara - IPR2024-00952



MENU SEARCH INDEX DETAIL JAPANESE

Please click here for details of Stored Data Information of [DETAIL].

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2009-177758**

(43)Date of publication of application : **06.08.2009**

(51)Int.Cl. ***H04M 1/00 (2006.01)***
H04M 1/11 (2006.01)

(21)Application number : **2008-040662**

(22)Date of filing : **24.01.2008**

(71)Applicant : **TAKASHIMA TAKASHI**

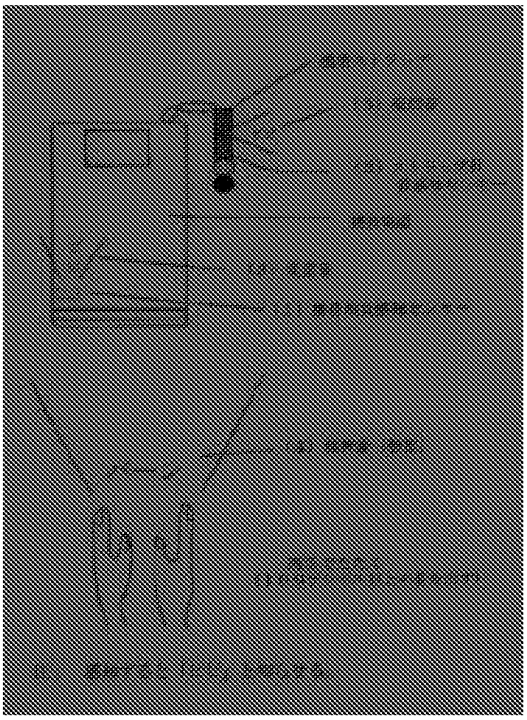
(72)Inventor : **TAKASHIMA TAKASHI**

(54) MOBILE PHONE DETECTOR WITH SOUND-SENSING FUNCTION

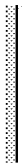
(57)Abstract:

PROBLEM TO BE SOLVED: To provide a mobile phone detector instantly reporting the location of a mobile phone by using a sound sensor.

SOLUTION: A sound-sensitive sensor is mounted on a mobile phone body or a mobile phone strap, and the sound-sensitive sensor is set to sense an external sound at a level above 100 dB. When the sensor senses a sound at a level around not smaller than 100 dB, this mobile phone detector makes a sound for reporting the location of the mobile phone to a person having lost the mobile phone.



CMT Exhibit 1007, Page 113 of 207
CMT v. Sfara - IPR2024-00952



PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK MD 20678 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 07 April 2014 (07.04.2014)
Applicant's or agent's file reference 30302	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2013/076410**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**

Applicant

SIMON, SASCHA

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: 41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 - 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer COMMISSIONER Telephone No. 82-42-481-5875

Form PCT/ISA/220 (July 2010)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for six months(expire date : **2014.10.08**) from the date of mailing of the international search report.

http://www.kipo.go.kr/en/ => PCT Services => PCT Services

ID : PCT international application number
PW : **F6L2H2VV**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: http://www.ipkcenter.com

Email: ipkc@ipkcenter.com

Notes to Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 30302	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2013/076410**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**	(Earliest) Priority Date *(day/month/year)* 21 December 2012 (21.12.2012)

Applicant

SIMON, SASCHA

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of :
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.
2. ☐ **Certain claims were found unsearchable** (See Box No. II)
3. ☐ **Unity of invention is lacking** (See Box No. III)
4. With regard to the **title,**
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 4
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/076410

A. CLASSIFICATION OF SUBJECT MATTER

B60W 50/08(2006.01)i, B60R 25/00(2006.01)i, B60R 16/02(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B60W 50/08; G06K 7/00; F42C 15/00; G06F 17/00; B60R 25/00; G01S 5/02; G01C 21/00; G07C 5/08; B60R 16/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: vehicle, identification, electric, magnetic, field, compare, and mobile

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7138828 B1 (ALLEN et al.) 14 November 2006 See column 4, lines 46-67, column 9, line 31 - column 10, line 47 and figures 1A,2.	1-42
A	WO 03-085276 A1 (CUTTY, DARRYL EDWARD ALBERT) 20 November 2003 See page 7, line 9 - page 8, line 31 and figures 1,2.	1-42
A	JP 10-260241 A (HONDA MOTOR CO., LTD.) 29 September 1998 See paragraphs [0027]-[0030]; and figures 2,3.	1-42
A	US 2003-0029645 A1 (THEPSAN et al.) 13 February 2003 See paragraphs [0012],[0082]; and figure 1.	1-42
A	EP 0461838 A2 (EXXON RESEARCH AND ENGINEERING COMPANY) 18 December 1991 See column 3, lines 16-47; and figure 1.	1-42

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
02 April 2014 (02.04.2014)	**07 April 2014 (07.04.2014)**

Name and mailing address of the ISA/KR	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea	SONG, Ho Keun
Facsimile No. +82-42-472-7140	Telephone No. +82-42-481-5580

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2013/076410

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7136828 B1	14/11/2006	US 2005-0046568 A1	03/03/2005
		US 2005-0134481 A1	23/06/2005
		US 2008-0143555 A1	19/06/2008
		US 2009-0174575 A1	09/07/2009
		US 2009-0174576 A1	09/07/2009
		US 2009-0174778 A1	09/07/2009
		US 2010-0274641 A1	28/10/2010
		US 2011-0013022 A1	20/01/2011
		US 6864804 B1	08/03/2005
		US 7015827 B2	21/03/2006
		US 7071840 B2	04/07/2006
		US 7324015 B1	29/01/2008
		US 7725348 B1	25/05/2010
		US 7734569 B1	08/06/2010
		US 7751975 B2	06/07/2010
		US 7764197 B2	27/07/2010
		US 7925440 B2	12/04/2011
		US 8135614 B2	13/03/2012
		US 8543285 B2	24/09/2013
WO 03-095276 A1	20/11/2003	AU 2003-230075 A1	11/11/2003
JP 10-260241 A	29/09/1998	JP 3235650 B2	04/12/2001
US 2003-0020345 A1	13/02/2003	AU 2003-318557 A8	03/03/2003
		EP 1425542 A2	09/06/2004
		EP 1467216 A2	13/10/2004
		US 2002-0073869 A1	20/06/2002
		US 2004-0244625 A1	09/12/2004
		US 6293931 B1	02/10/2001
		WO 03-003025 A2	09/01/2003
		WO 03-003925 A3	12/03/2003
EP 0461888 A2	18/12/1991	AT 118302 T	15/03/1995
		DE 69107035 D1	06/04/1995
		DE 69107695 T2	29/06/1995
		EP 0461888 A2	26/02/1992
		EP 0461888 B1	01/03/1995
		FI 912810 A0	11/06/1991
		FI 912810 D0	11/06/1991
		IE 67130 B1	06/03/1996
		IE 911976 A1	18/12/1991
		JP 04-233067 A	21/08/1992
		NO 912126 A	13/12/1991
		NO 912126 D0	03/06/1991
		PT 97929 A	31/08/1993
		US 5072380 A	10/12/1991

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK MD 20678 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**07 April 2014 (07.04.2014)**
Applicant's or agent's file reference 30302	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2013/076410	**19 December 2013 (19.12.2013)**	21 December 2012 (21.12.2012)

International Patent Classification (IPC) or both national classification and IPC
B60W 50/08(2006.01)i, B60R 25/00(2006.01)i, B60R 16/02(2006.01)i

Applicant
SIMON, SASCHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	02 April 2014 (02.04.2014)	SONG, Ho Keun Telephone No. +82-42-481-5580

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076410

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed.

   ☐ together with the international application in electronic form.

   ☐ subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076410

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-42	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-42	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-42	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

✓D1: US 7136828 B1 (ALLEN et al.) 14 November 2006
○ D2: WO 03-095276 A1 (COTTY, DARRYL EDWARD ALBERT) 20 November 2003
D3: JP 10-260241 A (HONDA MOTOR CO., LTD.) 29 September 1998
✓D4: US 2003-0029345 A1 (TIERNAN et al.) 13 February 2003
○ D5: EP 0461888 A2 (EXXON RESEARCH AND ENGINEERING COMPANY) 18 December 1991

1. Novelty and Inventive Step

1.1 Independent Claim 1

The subject matter of claim 1 differs from these prior art documents D1-D5 in that a device of claim 1 comprises a field-detecting component and a comparing component, wherein the field-detecting component is operable to detect a second one of an electric field, a magnetic field, and electro-magnetic field and to generate a second detected field signature, and wherein the comparing component is operable to generate a comparison signal based on a comparison of a detected field signature and the second detected field signature. And it is not obvious to a person skilled in the art by the documents D1-D5, taken alone or in combination.

Therefore, claim 1 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

Continued on Supplemental Box

CMT Exhibit 1007, Page 122 of 207
CMT v. Sfara - IPR2024-00952

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Box No. V

1.2 Dependent Claims 2-7

Claims 2-7 are dependent on claim 1 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.3 Independent Claim 8

Claim 8 relates to a method, and it has the same technical features as claim 1. Thus, the same reasoning applies to claim 8. Therefore, claim 8 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.4 Dependent Claims 9-14

Claims 9-14 are dependent on claim 8 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.5 Independent Claim 15

Claim 15 relates to a non-transitory, tangible, computer-readable media having computer-readable instructions stored thereon, and it has the same technical features as claim 1. Thus, the same reasoning applies to claim 15. Therefore, claim 15 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.6 Dependent Claims 16-21

Claims 16-21 are dependent on claim 15 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

1.7 Independent Claim 22

The subject matter of claim 22 differs from these prior art documents D1-D5 in that a device of claim 22 comprises a field-detecting component and a comparing component, wherein the field-detecting component is operable to detect an electric field, a magnetic field, and an electro-magnetic field, and wherein the comparing component is operable to generate a comparison signal based on a comparison of a detected field signature and a first plurality of signatures corresponding to electric fields, a second plurality of signatures corresponding to magnetic fields, and a third plurality of signatures corresponding to electro-magnetic fields. And it is not obvious to a person skilled in the art by the documents D1-D5, taken alone or in combination.

Therefore, claim 22 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.8 Dependent Claims 23-28

Claims 23-28 are dependent on claim 22 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.9 Independent Claim 29

Claim 29 relates to a method, and it has the same technical features as claim 22. Thus, the same reasoning applies to claim 29. Therefore, claim 29 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.10 Dependent Claims 30-35

Claims 30-35 are dependent on claim 29 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

Continued on The Next Page

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of : Previous Page

1.11 Independent Claim 36

Claim 36 relates to a non-transitory, tangible, computer-readable media having computer-readable instructions stored thereon, and it has the same technical features as claim 22. Thus, the same reasoning applies to claim 36. Therefore, claim 36 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1.12 Dependent Claims 37-42

Claims 37-42 are dependent on claim 36 directly or indirectly, and therefore meet the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

2. Industrial Applicability

Claims 1-42 are industrially applicable under PCT Article 33(4).

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK, MD 20678 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing *(day/month/year)*	09 April 2014 (09.04.2014)
Applicant's or agent's file reference 30303	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2013/076426**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**

Applicant
SIMON, SASCHA

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 - 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea	Authorized officer COMMISSIONER
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5875

Form PCT/ISA/220 (July 2010)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for six months(expire date : **2014.10.10**) from the date of mailing of the international search report.

http://www.kipo.go.kr/en/ => PCT Services => PCT Services

ID : PCT international application number
PW : **KXFK2M2H**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: http://www.ipkcenter.com

Email: ipkc@ipkcenter.com

Notes to Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 30303	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2013/076426**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**	(Earliest) Priority Date *(day/month/year)* 21 December 2012 (21.12.2012)

Applicant

SIMON, SASCHA

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.
2. ☐ **Certain claims were found unsearchable** (See Box No. II)
3. ☐ **Unity of invention is lacking** (See Box No. III)
4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 5
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/076426

A. CLASSIFICATION OF SUBJECT MATTER

B60R 25/00(2006.01)i, B60R 25/24(2013.01)i, B60W 50/08(2006.01)i, B60R 16/02(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B60R 25/00; B60R 25/10; G06F 7/00; H04W 16/20; B60Q 1/00; G01R 35/00; B60R 25/24; B60W 50/08; B60R 16/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: database, parameter, detect, geodetic location and network

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0309709 A1 (BEVACQUA et al.) 17 December 2009 See paragraphs [0010],[0039]-[0068],[0090]-[0126] and figure 6.	1-15
A	US 2004-0257208 A1 (HUANG et al.) 23 December 2004 See paragraphs [0010]-[0011] and figure 1.	1-15
A	US 2011-0301785 A1 (FARLING, BRYAN MARC) 08 December 2011 See paragraphs [0004]-[0009] and figure 2.	1-15
A	US 2006-0085153 A1 (GESTERLING et al.) 20 April 2006 See paragraphs [0005]-[0008] and figure 1.	1-15
A	US 2011-0169654 A1 (KETARI, NISSAF) 14 July 2011 See paragraph [0017] and figures 2A-2C.	1-15

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 April 2014 (08.04.2014)	**09 April 2014 (09.04.2014)**

Name and mailing address of the ISA/KR	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea	HAM, Joung Hyun
Facsimile No. +82-42-472-7140	Telephone No. +82-42-481-5458

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2013/076426

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0309709 A1	17/12/2009	EP 2255448 A1	01/12/2010
		EP 2255448 A4	30/05/2012
		US 2012-0139760 A1	07/06/2012
		US 8115656 B2	14/02/2012
		US 8610589 B2	17/12/2013
		WO 2009-108719 A1	03/09/2009
US 2004-0257208 A1	23/12/2004	None	
US 2011-0301795 A1	08/12/2011	US 2011-0298422 A1	08/12/2011
		US 2011-0302078 A1	08/12/2011
US 2006-0085153 A1	20/04/2006	CN 100538312 C	09/09/2009
		CN 1758044 A	12/04/2006
		US 7286047 B2	23/10/2007
US 2011-0169654 A1	14/07/2011	US 8115609 B2	14/02/2012

Form PCT/ISA/210 (patent family annex) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK, MD 20678 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

	Date of mailing *(day/month/year)* **09 April 2014 (09.04.2014)**
Applicant's or agent's file reference 30303	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2013/076426	**19 December 2013 (19.12.2013)**	21 December 2012 (21.12.2012)

International Patent Classification (IPC) or both national classification and IPC

B60R 25/00(2006.01)i, B60R 25/24(2013.01)i, B60W 50/08(2006.01)i, B60R 16/02(2006.01)i

Applicant
SIMON, SASCHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	08 April 2014 (08.04.2014)	HAM, Joung Hyun Telephone No. +82-42-481-5458

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076426

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed.

   ☐ together with the international application in electronic form.

   ☐ subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076426

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-15	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-15	NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2009-0309709 A1 (BEVACQUA et al.) 17 December 2009

1. Novelty and Inventive Step

1.1 Independent Claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a vehicle security system for theft detection and vehicle location awareness and monitoring, comprising: a database of WiFi MAC (medium access control) configured to determine location based on access point MAC addresses visible to a WiFi receiver; a means of comparing locations of the vehicle received from a communication center (130) with stored geo-fence information; and a means of determining that the vehicle has moved beyond a geo-fence defined area (see paragraphs [0068],[0106],[0111] and figure 6).

Claim 1 differs from D1 in that it comprises a parameter-detecting component operable to detect a third parameter, to detect a fourth parameter and to generate a second detected parameter signature based on the third detected parameter and the fourth detected parameter, wherein a comparison component is operable to generate a comparison signal based on a comparison of the detected parameter signature and the second detected parameter signature. However, said feature would be easily conceived from the disclosure of D1 in that a rate of periodic updates of location at boxes (606,610) can depend on a speed of the vehicle (110) and an update rate can be based on the time which it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).

Accordingly, claim 1 would have been obvious over D1.

Therefore, claim 1 lacks an inventive step under PCT Article 33(3).

1.2 Dependent Claims 2-5

1.2.1 Concerning Claim 2

The additional feature of claim 2, characterized in that said parameter-detecting component is operable to detect the third parameter as a function over a period of time, would be easily conceived from the disclosure of D1 in that a rate of periodic updates of location at boxes

Continued on Supplemental Box

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Box No. V

(606,610) can depend on a speed of the vehicle (110) and an update rate can be based on the time it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).
Accordingly, claim 2 would have been obvious over D1.
Therefore, claim 2 lacks an inventive step under PCT Article 33(3).

1.2.2 Concerning Claim 3
The additional feature of claim 3 is identical to the disclosure of D1 in a position location subsystem (230) such as a GPS receiver (see paragraph [0059]).
Accordingly, claim 3 would have been obvious over D1.
Therefore, claim 3 lacks an inventive step under PCT Article 33(3).

1.2.3 Concerning Claim 4
The additional feature of claim 4 is identical to the disclosure of D1 in a communications subsystem (340) to receive data indicative of the location of the vehicle from a monitoring system (105) via a wireless network (125) (see paragraph [0062]).
Accordingly, claim 4 would have been obvious over D1.
Therefore, claim 4 lacks an inventive step under PCT Article 33(3).

1.2.4 Concerning Claim 5
The additional feature of claim 5 is identical to the disclosure of D1 in that a communication center (130) can use data indicative of traffic patterns to predict a likely course for the vehicle being tracked (see paragraph [0126]).
Accordingly, claim 5 would have been obvious over D1.
Therefore, claim 5 lacks an inventive step under PCT Article 33(3).

1.3 Independent Claim 6
D1, which is considered to be the closest prior art to the subject matter of claim 6, discloses a method for theft detection and vehicle location awareness and monitoring, comprising steps of: providing a database of WiFi MAC (medium access control) configured to determine location based on access point MAC addresses visible to a WiFi receiver; detecting a speed of the vehicle (110); detecting the time which it takes the vehicle to move a predetermined distance (110); comparing locations of a vehicle received from a communication center (130) with stored geo-fence information; and determining that the vehicle has moved beyond a geo-fence defined area (see paragraphs [0068],[0106],[0111] and figure 6).
Claim 6 differs from D1 in that it comprises a step of generating, via the parameter-detecting component, a second detected parameter signature based on the third detected parameter and the fourth detected parameter. However, said feature would be easily conceived from the disclosure of D1 in that a rate of periodic updates of location at boxes (606,610) can depend on a speed of the vehicle (110) and an update rate can be based on a time which it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).
Accordingly, claim 6 would have been obvious over D1.

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

Therefore, claim 6 lacks an inventive step under PCT Article 33(3).

1.4 Dependent Claims 7-10
1.4.1 Concerning Claim 7
The additional feature of claim 7, characterized in that detecting a third parameter comprises detecting the third parameter as a function over a period of time, would be easily conceived from the disclosure of D1 in that the rate of periodic updates of location at boxes (606,610) can depend on the speed of the vehicle (110) and the update rate can be based on the time which it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).
Accordingly, claim 7 would have been obvious over D1.
Therefore, claim 7 lacks an inventive step under PCT Article 33(3).

1.4.2 Concerning Claim 8
The additional feature of claim 8 is identical to the disclosure of D1 in a step of providing a position location subsystem (230) such as a GPS receiver (see paragraph [0059]).
Accordingly, claim 8 would have been obvious over D1.
Therefore, claim 8 lacks an inventive step under PCT Article 33(3).

1.4.3 Concerning Claim 9
The additional feature of claim 9 is identical to the disclosure of D1 in a step of providing a communications subsystem (340) to receive data indicative of the location of the vehicle from a monitoring system (105) via a wireless network (125) (see paragraph [0062]).
Accordingly, claim 9 would have been obvious over D1.
Therefore, claim 9 lacks an inventive step under PCT Article 33(3).

1.4.4 Concerning Claim 10
The additional feature of claim 10, concerning steps of generating, via a probability-assessing component, a probability of a vehicle mode based on the comparison signal; and detecting, via the parameter-detecting component, a fifth parameter when the generated probability is greater than a predetermined amount, would be easily conceived from the disclosure of D1 in that the communication center (130) can use data indicative of traffic patterns to predict a likely course for a vehicle being tracked and that the communication center (130) could use traffic analysis applications (see paragraph [0126]).
Accordingly, claim 10 would have been obvious over D1.
Therefore, claim 10 lacks an inventive step under PCT Article 33(3).

1.5 Independent Claim 11
D1, which is considered to be the closest prior art to the subject matter of claim 11, discloses a computer system (300), the computer to perform a method for theft detection and vehicle location awareness and monitoring, the method comprising steps of: providing a database of WiFi MAC (medium access control) configured to determine location based on access point

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

MAC addresses visible to a WiFi receiver; detecting a speed of the vehicle (110); detecting the time which it takes the vehicle to move a predetermined distance (110); comparing locations of a vehicle received from a communication center (130) with stored geo-fence information; and determining that the vehicle has moved beyond a geo-fence defined area (see paragraphs [0040],[0068],[0106],[0111] and figure 6).
Claim 11 differs from D1 in that it comprises a step of generating, via the parameter-detecting component, a second detected parameter signature based on the third detected parameter and the fourth detected parameter. However, said feature would be easily conceived from the disclosure of D1 in that a rate of periodic updates of location at boxes (606,610) can depend on a speed of the vehicle (110) and an update rate can be based on the time which it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).
Accordingly, claim 11 would have been obvious over D1.
Therefore, claim 11 lacks an inventive step under PCT Article 33(3).

1.6 Dependent Claims 12-15
1.6.1 Concerning Claim 12
The additional feature of claim 12, characterized in that detecting a third parameter comprises detecting the third parameter as a function over a period of time, would be easily conceived from the disclosure of D1 in that the rate of periodic updates of location at boxes (606,610) can depend on the speed of the vehicle (110) and the update rate can be based on the time which it takes the vehicle (110) to move a predetermined distance (see paragraph [0065]).
Accordingly, claim 12 would have been obvious over D1.
Therefore, claim 12 lacks an inventive step under PCT Article 33(3).

1.6.2 Concerning Claim 13
The additional feature of claim 13 is identical to the disclosure of D1 in a step of providing a position location subsystem (230) such as a GPS receiver (see paragraph [0059]).
Accordingly, claim 13 would have been obvious over D1.
Therefore, claim 13 lacks an inventive step under PCT Article 33(3).

1.6.3 Concerning Claim 14
The additional feature of claim 14 is identical to the disclosure of D1 in a step of providing a communications subsystem (340) to receive data indicative of the location of the vehicle from a monitoring system (105) via a wireless network (125) (see paragraph [0062]).
Accordingly, claim 14 would have been obvious over D1.
Therefore, claim 14 lacks an inventive step under PCT Article 33(3).

1.6.4 Concerning Claim 15
The additional feature of claim 15, concerning steps of generating, via a probability-assessing component, a probability of a vehicle mode based on the comparison signal, and detecting, via the parameter-detecting component, a fifth parameter when the generated probability is greater

Continued on The Next Page

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of : Previous Page

than a predetermined amount, would be easily conceived from the disclosure of D1 in that the communication center (130) can use data indicative of traffic patterns to predict a likely course for a vehicle being tracked and that the communication center (130) could determine use traffic analysis applications (see paragraph [0126]).
Accordingly, claim 15 would have been obvious over D1.
Therefore, claim 15 lacks an inventive step under PCT Article 33(3).

2. Industrial Applicability

Claims 1-15 are industrially applicable under PCT Article 33(4).

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK MD 20678 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 30304	Date of mailing *(day/month/year)* 09 April 2014 (09.04.2014) **FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2013/076432**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**

Applicant

SIMON, SASCHA

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:

   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

   For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 , 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea	Authorized officer COMMISSIONER
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5875

Form PCT/ISA/220 (July 2016)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for six months(expire date : **2014.10.10**) from the date of mailing of the international search report.

http://www.kipo.go.kr/en/ => PCT Services => PCT Services

ID : PCT international application number
PW : **GC63Y4WE**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: http://www.ipkcenter.com

Email: ipkc@ipkcenter.com

Notes to Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 30304	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2013/076432**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**	(Earliest) Priority Date *(day/month/year)* 21 December 2012 (21.12.2012)

Applicant

SIMON, SASCHA

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of :

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/076432

A. CLASSIFICATION OF SUBJECT MATTER

B60R 25/00(2006.01)i, B60R 25/30(2013.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B60R 25/00; G08B 25/08; B60R 21/01; G06F 7/00; B60R 21/32; H02J 7/00; B60L 1/00; B60R 21/0132; B60R 25/30

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: vehicle, parameter, crash, and signal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2008-0202814 A1 (KAMIYA, SHINJI) 28 August 2008 See paragraphs [0013],[0018]-[0029]; claim 4; and figure 2.	1-3,5-9,11-15 ,17-18 4,10,16
Y	US 2009-0037050 A1 (ERB, YARWICK) 05 February 2009 See abstract and paragraph [0032].	4,10,16
A	US 2012-0125634 A1 (SHIMIZU, TAKASHI) 17 May 2012 See paragraphs [0017]-[0034] and figures 2-4.	1-18
A	JP 2007-188865 A (DENSO CORP.) 19 July 2007 See claims 1-3 and figures 1-2.	1-18
A	US 5785347 A (ADOLFSON et al.) 28 July 1998 See claims 1-5 and figures 3-4.	1-18

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 April 2014 (08.04.2014)	**09 April 2014 (09.04.2014)**

Name and mailing address of the ISA/KR	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	HAM, Jeong Hyun Telephone No. +82-42-481-5458

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2013/076432

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0203814 A1	28/08/2008	JP 04-245050 B2	25/03/2009
		JP 2008-207714 A	11/09/2008
		US 7637374 B2	02/02/2010
US 2009-0037056 A1	05/02/2009	EP 1957320 A1	20/08/2008
		EP 1957320 A4	21/04/2010
		GB 0524887 D0	11/01/2006
		GB 2433345 A	20/06/2007
		US 8155841 B2	10/04/2012
		WO 2007-067120 A1	14/06/2007
US 2012-0123634 A1	17/05/2012	CN 102463982 A	23/05/2012
		JP 05-177586 B2	03/04/2013
		JP 2012-101734 A	31/05/2012
		US 8600623 B2	03/12/2013
JP 2007-183865 A	19/07/2007	JP 4735367 B2	27/07/2011
US 5785347 A	28/07/1998	CN 1240094 A0	05/01/2000
		EP 0932529 A1	10/10/2001
		JP 2001-504770 A	10/04/2001
		KR 10-2000-0052673 A	25/08/2000
		WO 98-17508 A1	30/04/1998

Form PCT/ISA/210 (patent family annex) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN WHELAN

2315 HALLOWING POINT RD PRINCE FREDERICK MD 20678 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**09 April 2014 (09.04.2014)**
Applicant's or agent's file reference: 30304	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2013/076432	**19 December 2013 (19.12.2013)**	21 December 2012 (21.12.2012)

International Patent Classification (IPC) or both national classification and IPC

B60R 25/00(2006.01)i, B60R 25/30(2013.01)i

Applicant
SIMON, SASCHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	08 April 2014 (08.04.2014)	HAM, Joung Hyun Telephone No. +82-42-481-5458

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076432

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form:

   b. (time)

   ☐ in the international application as filed.

   ☐ together with the international application in electronic form.

   ☐ subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076432

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2008-0203814 A1 (KAMIYA, SHINJI) 28 August 2008
D2: US 2009-0037056 A1 (ERB, YANNICK) 05 February 2009
D3: US 2012-0123634 A1 (SHIMIZU, TAKASHI) 17 May 2012
D4: JP 2007-183865 A (DENSO CORP.) 19 July 2007
D5: US 5785347 A (ADOLPH et al.) 28 July 1998

1. Novelty and Inventive Step

1.1 Independent Claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses that an emergency report apparatus for a vehicle comprises a control circuit (2) performing an emergency report operation (see claim 4 and figure 2). This claim differs from D1 in that a device comprises a first detecting component operable to detect a first parameter and to generate a first detector signal based on the first detected parameter and a second detecting component operable to detect a second parameter and to generate a second detector signal based on the second detected parameter. However, this feature would be easily conceived from the disclosure of D1 in that the emergency report operation comprises a collision possibility determining unit determining that there is a possibility that the vehicle will collide with something in a normal operation mode and a collision determining unit to determine whether or not the vehicle has collided with something in a low-power consumption operation mode (see claim 4 and figure 2). Accordingly, this claim would have been obvious over D1. Therefore, claim 1 does not involve an inventive step under PCT Article 33(3).

Continued on Supplemental Box

CMT Exhibit 1007, Page 145 of 207
CMT v. Sfara - IPR2024-00952

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claim 18 is contrary to PCT Rule 6.1(a) because claim 13 includes the subject matter of claim 18.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Box No. V

1.2 Dependent Claims 2-6

1.2.1 Concerning Claim 2

The additional feature of claim 2 would be easily conceived from the disclosure of D1 in that a pre-crash safety ECU (20) is connected with a camera (21), a millimeter wave radar (22), a vehicle speed sensor (23), a steering angle sensor (24), a brake control ECU (25), an air suspension ECU (26), and a seatbelt ECU (27) (see paragraph [0019]). Accordingly, this claim would have been obvious over D1. Therefore, claim 2 does not involve an inventive step under PCT Article 33(3).

1.2.2 Concerning Claim 3

The additional feature of claim 3, characterized in that the first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 in that when an airbag is expanded, the airbag ECU outputs an airbag expansion signal to the control circuit (2) (see paragraphs [0018],[0020]). Accordingly, this claim would have been obvious over D1. Therefore, claim 3 does not involve an inventive step under PCT Article 33(3).

1.2.3 Concerning Claim 4

The additional feature of claim 4, characterized in that the first detecting component is operable to detect, as the first parameter, acceleration along a single axis and to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value, is not disclosed in D1. However, D2 discloses that a comparator (7) is configured to provide the start signal when the acceleration signal first exceeds the predetermined acceleration value (a0) (see paragraph [0052]). Accordingly, this claim would have been obvious over D1 in view of D2. Thus, claim 4 does not involve an inventive step under PCT Article 33(3).

1.2.4 Concerning Claim 5

The additional feature of claim 5 is identical to the feature of D1 in that the control circuit (2) causes a wireless communication device (3) to transmit an emergency report signal to a service center (12) through a radio communication network (see paragraph [0020]). Accordingly, this claim would have been obvious over D1. Therefore, claim 5 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

1.2.5 Concerning Claim 6

The additional feature of claim 6 is identical to the feature of D1 in switching an operation mode between the normal operation mode and the low-power consumption operation mode (see claim 4). Accordingly, this claim would have been obvious over D1. Therefore, claim 6 does not involve an inventive step under PCT Article 33(3).

1.3 Independent Claim 7

The same reasoning as in claim 1 applies to claim 7, which shares the same technical features as claim 1 and differs only in the category of invention. Accordingly, this claim would have been obvious over D1. Therefore, claim 7 does not involve an inventive step under PCT Article 33(3).

1.4 Dependent Claims 8-12

The additional features of claims 8-12 have the same technical features as in claims 2-6 respectively, and differ only in the category of invention.

Accordingly, claims 8-9,11-12 would have been obvious over D1, and claim 10 would have been obvious over D1 in view of D2.

Therefore, claims 8-12 do not involve an inventive step under PCT Article 33(3).

1.5 Independent Claim 13

D1, which is considered to be the closest prior art to the subject matter of claim 13, discloses that an emergency report apparatus for a vehicle comprises a control circuit constructed based on CPU (2) performing an emergency report operation and switching an operation mode between the normal operation mode and the low-power consumption operation mode (see paragraph [0013]; claim 4; and figure 2). This claim differs from D1 in that a non-transitory, tangible, computer-readable media comprises a first detecting component operable to detect a first parameter and to generate a first detector signal based on the first detected parameter and a second detecting component operable to detect a second parameter and to generate a second detector signal based on the second detected parameter. However, this feature would be easily conceived from the disclosure of D1 in that the emergency report operation comprises a collision possibility determining unit determining that there is a possibility that the vehicle will collide with something in a normal operation mode and a collision determining unit to determine whether or not the vehicle has collided with something in a low-power

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

consumption operation mode (see claim 4 and figure 2). Accordingly, this claim would have been obvious over D1. Therefore, claim 13 does not involve an inventive step under PCT Article 33(3).

1.6 Dependent Claims 14-18

The additional features of claims 14-18 have the same technical features as claims 2-6 respectively, and differ only in the category of invention.

Accordingly, claims 14-15,17-18 would have been obvious over D1, and claim 16 would have been obvious over D1 in view of D2.

Therefore, claims 14-18 do not involve an inventive step under PCT Article 33(3).

(Note: claim 13 includes the subject matter of claim 18)

2. Industrial Applicability

Claims 1-18 are industrially applicable under PCT Article 33(4).

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
WHELAN, JOHN

2315 HALLOWING POINT RD PRINCE FREDERICK MD 20678 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing *(day/month/year)* 09 April 2014 (09.04.2014)	
Applicant's or agent's file reference 30305	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2013/076440**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**

Applicant
SIMON, SASCHA

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 , 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer COMMISSIONER Telephone No. 82-42-481-8755

Form PCT/ISA/220 (July 2009)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 30385	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2013/076440**	International filing date *(day/month/year)* **19 December 2013 (19.12.2013)**	(Earliest) Priority Date *(day/month/year)* 21 December 2012 (21.12.2012)

Applicant

SIMON, SASCHA

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of :
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.
2. ☐ **Certain claims were found unsearchable** (See Box No. II)
3. ☐ **Unity of invention is lacking** (See Box No. III)
4. With regard to the **title,**
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract,**
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
   a. the figure of the **drawings** to be published with the abstract is Figure No. **6**
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/076440

A. CLASSIFICATION OF SUBJECT MATTER

G01V 3/08(2006.01)i, H04W 88/02(2009.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G01V 3/08; H04Q 7/00; H04W 4/12; H04Q 7/20; H04W 4/02; H04W 88/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: smartphone, location, detecting, database, signature, field, comparison

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0089153 A1 (SHEYNBLAT, LEONID) 27 April 2006 See abstract, paragraphs [0003], [0004], [0016], [0027]-[0035], claim 1, and figures 4,6.	1-20
A	US 2008-0287143 A1 (BAKS et al.) 20 November 2008 See abstract, paragraphs [0022],[0030]-[0033], claim 1, and figure 2.	1-20
A	US 2001-0052471 A1 (MACIOWAIE et al.) 05 August 2001 See abstract, paragraphs [0042]-[0049], claim 1, and figure 1.	1-20
A	US 2012-0208517 A1 (ZOHAR, TSAHA) 16 August 2012 See abstract, paragraphs [0012]-[0022], and figures 1,2.	1-20
A	JP 2009-177758 A (TAKASHI, TAKASHIMA) 06 August 2009 See abstract, paragraph [0009], and figure 1.	1-20

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 April 2014 (08.04.2014)	**09 April 2014 (09.04.2014)**

Name and mailing address of the ISA/KR	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	SOHN, Byoung Cheol Telephone No. +82-42-481-5489

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/US2013/076440

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006-0089153 A1	27/04/2006	CN 101084696 A0	05/12/2007
		MX 2007005097 A	16/07/2007
		US 7433693 B2	07/10/2008
		WO 2006-047734 A1	04/05/2006
US 2008-0287143 A1	20/11/2008	US 6975873 B1	13/12/2005
		US 7400892 B1	15/07/2008
US 2004-0152471 A1	05/08/2004	AU 2002-307149 A1	21/10/2002
		AU 2002-307149 A8	21/10/2002
		CA 2441764 A1	17/10/2002
		CA 2441764 C	05/06/2012
		CN 1528101 A	08/09/2004
		DE 60232505 D1	16/07/2009
		EP 1384386 A2	28/01/2004
		EP 1384386 B1	03/06/2009
		JP 2005-509136 A	07/04/2005
		JP 2010-1601585	22/07/2010
		KR 10-2004-0008145 A	28/01/2004
		KR 10-2008-0092390 A	15/10/2008
		MX PA03009011 A	17/02/2004
		US 2009-0231299 A1	03/09/2009
		US 2012-094692 A1	19/04/2012
		US 2013-005852 A1	18/04/2013
		US 7519372 B2	14/04/2009
		US 8369870 B2	05/02/2013
		WO 02-082832 A2	17/10/2002
		WO 02-082832 A3	27/02/2003
US 2012-0208517 A1	16/08/2012	US 2009-233589 A1	17/09/2009
		US 2012-231811 A1	13/09/2012
		US 8359001 B2	22/01/2013
		US 8478230 B2	02/07/2013
		US 8588730 B2	19/11/2013
JP 2009-177758 A	06/08/2009	None	

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
WHELAN, JOHN

2315 HALLOWING POINT RD PRINCE FREDERICK, MD 20678 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**09 April 2014 (09.04.2014)**
Applicant's or agent's file reference 30305	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2013/076440	**19 December 2013 (19.12.2013)**	21 December 2012 (21.12.2012)

International Patent Classification (IPC) or both national classification and IPC
G01V 3/08(2006.01)i, H04W 88/02(2009.01)i

Applicant
SIMON, SASCHA

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [x] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	08 April 2014 (08.04.2014)	SOHN, Byoung Cheol Telephone No. +82-42-481-5489

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No
PCT/US2013/076440

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed.

   ☐ together with the international application in electronic form.

   ☐ subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2013/076440

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-20	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2006-0089153 A1 (SHEYNBLAT, LEONID) 27 April 2006
D2: US 2008-0287143 A1 (BANKS et al.) 20 November 2008
D3: US 2004-0152471 A1 (MACDONALD et al.) 05 August 2004
D4: US 2012-0208517 A1 (ZOHAR, TSABA) 16 August 2012
D5: JP 2009-177758 A (TAKASHI, TAKASHIMA) 06 August 2009

1. Novelty and Inventive Step

1.1 Claims 1-7

The subject matter of independent claim 1 differs from these prior art documents D1-D5 in that: the database has stored a plurality of signatures corresponding to a plurality of fields; the accessing component operable to access one of the plurality of signatures, from the database; the field-detecting component operable to generate a detected field signature based on a detected first field; the comparing component operable to generate a comparison signal based on a comparison of the detected field signature and one of the plurality of signatures; and the identifying component operable to identify the first location based on the comparison signal. And it is not obvious to a person skilled in the art by the documents, taken alone or in combination. Therefore, claim 1 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

Claims 2-7 are directly or indirectly dependent on claim 1, and therefore meet the requirements of PCT Article 33(2) and (3).

1.2 Claims 8-14

Continued on Supplemental Box

International application No.
PCT/US2013/076440

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 4, 3 of this application are not numbered consecutively in Arabic numerals. Therefore, claims 4, 3 do not meet PCT Article 6, under PCT Rule 6.1(b).
(Note: This written opinion has been established on the assumption that numbers 4, 3 each are numbers 3, 4 respectively)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box No. V

Independent claim 8, which relates to a method for use with a database having a plurality of signatures stored therein, shares the same technical features with claim 1 and differs only in the category of invention. Thus, the same reasoning applies to claim 8. Therefore, claim 8 is novel and involves an inventive step under PCT Article 33(2) and (3).

Claims 9-14 are directly or indirectly dependent on claim 8, and therefore meet the requirements of PCT Article 33(2) and (3).

1.3 Claims 15-20

Independent claim 15, which relates to a non-transitory, tangible, computer-readable media having computer-readable instructions therein, shares the same technical features with claim 1 and differs only in the category of invention. Thus, the same reasoning applies to claim 15. Therefore, claim 15 is novel and involves an inventive step under PCT Article 33(2) and (3).

Claims 16-20 are dependent on claim 15, and therefore meet the requirements of PCT Article 33(2) and (3).

2. Industrial Applicability

The invention as set forth in claims 1-20 is industrially applicable (PCT Article 33(4)).

Electronic Patent Application Fee Transmittal

Application Number:	14105744
Filing Date:	13-Dec-2013
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Filer:	John T. Whelan
Attorney Docket Number:	APIO-Crash

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	2806	1	90	90
		Total in USD ($)		**90**

Electronic Acknowledgement Receipt

EFS ID:	21077923
Application Number:	14105744
International Application Number:	
Confirmation Number:	1091
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Customer Number:	54671
Filer:	John T. Whelan
Filer Authorized By:	
Attorney Docket Number:	APIO-Crash
Receipt Date:	29-DEC-2014
Filing Date:	13-DEC-2013
Time Stamp:	16:17:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$90
RAM confirmation Number	2674
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	ApioCrashModeNonFinalResponse.pdf	3244301 13cf8949c9f1606be1d1d0725dd9080760ced631	no	10
Warnings:					
Information:					
2	Transmittal Letter	ApioCrashModeIDS.pdf	360537 45c1c24fc49d5693a79290b2ec97f0a7a4ce83fe	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	ApioCrashModeIDSForm.pdf	1572639 210413735119ad79ec8f08abaed90234c2563261	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	Foreign Reference	WO03095276.pdf	4868911 953447499eca9d929e306fc03c231d712c4ade3d	no	7
Warnings:					
Information:					
5	Foreign Reference	EP0461888.pdf	5408315 ca578eb54c17207e87c802e1cd3ec5a1e218872f	no	8
Warnings:					
Information:					
6	Foreign Reference	JP10260241Abs.pdf	303597 0fb876f228b302dd69beeb897cf36931da4ec0e8	no	2
Warnings:					
Information:					
7	Foreign Reference	JP2007183865Abs.pdf	350749 2c27431b9f8f1f9f2e99a855997d84d81b21f76e	no	2
Warnings:					
Information:					

8	Foreign Reference	JP2009177758.pdf	254980 7d7f069066e60e3a2f0cefcff6dcd6b0027156bc	no	2
Warnings:					
Information:					
9	Other Reference-Patent/App/Search documents	SearchReport410.pdf	2114160 a7d23c53591421d36e027e8542a5a02ccfe7a04f	no	11
Warnings:					
Information:					
10	Other Reference-Patent/App/Search documents	SearchReport426.pdf	2576413 f9c65aac9d495ff663952610883374c96a5d6aaf	no	12
Warnings:					
Information:					
11	Other Reference-Patent/App/Search documents	SearchReport432.pdf	2226280 d45e783b6d39635705527d5946f8940dcc6af861	no	12
Warnings:					
Information:					
12	Other Reference-Patent/App/Search documents	SearchReport440.pdf	1672535 dbefd954476663f91bc3f5e9a9a1c13cd974649c	no	10
Warnings:					
Information:					
13	Fee Worksheet (SB06)	fee-info.pdf	30544 5b2764d1f675b89243cb3138421393e3ea13a040	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	24983961		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/105,744	Filing Date 12/13/2013	☐ 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 $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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	12/29/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	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		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ 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.
** 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 number found in the appropriate box in column 1.

LIE
/NICOLLE L. SCRIVNER/

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.

UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

54671 7590 01/28/2015
The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

EXAMINER
PAIGE, TYLER D

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 01/28/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	12/13/2013	Sascha Simon	APIO-CRASH	1091

TITLE OF INVENTION: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	04/28/2015

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 02/11)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (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)

54671 7590 01/28/2015
The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

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

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

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	12/13/2013	Sascha Simon	APIO-CRASH	1091

TITLE OF INVENTION: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	04/28/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
PAIGE, TYLER D	3661	701-031500

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 03-02 or more recent) attached. **Use of a Customer Number is required.**

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

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document 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.

(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. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — 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.
- ❑ 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.

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. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

CMT Exhibit 1007, Page 168 of 207
CMT v. Sfara - IPR2024-00952

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	12/13/2013	Sascha Simon	APIO-CRASH	1091

54671 7590 01/28/2015

The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

EXAMINER	
PAIGE, TYLER D	

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 01/28/2015

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.

PTOL-85 (Rev. 02/11)

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 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, 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 regulation.

Notice of Allowability	Application No. 14/105,744	Applicant(s) SIMON, SASCHA	
	Examiner TYLER PAIGE	Art Unit 3661	AIA (First Inventor to File) Status Yes

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

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

1. ☒ This communication is responsive to *12/29/2014*.
   ☐ 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 *1-18*. 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 12/29/2014
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date *12/8/2014* .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/T. P./ Examiner, Art Unit 3661	/Thomas G Black/ Supervisory Patent Examiner, Art Unit 3661

DETAILED ACTION

Allowable Subject Matter

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

2. Claims 1-18 are allowed.

3. The following is an Examiner's Statement for reasons for allowance. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 1, an apparatus that detects whether it is present in a vehicle and then generates a crash mode signal based upon the in-vehicle detection. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

4. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 7, a method that detects whether an apparatus is present in a vehicle and then generates a crash mode signal based upon the in-vehicle detection. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

5. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 13, a non-transitory computer-readable media that executes a method that detects whether an apparatus is present in a vehicle and then generates a crash mode signal based upon the in-vehicle detection.

This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYLER PAIGE whose telephone number is (571)270-5425. The examiner can normally be reached on 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 571-272-6956. 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.

/T. P./
Examiner, Art Unit 3661

/Thomas G Black/

Supervisory Patent Examiner, Art Unit 3661

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/105,744	SIMON, SASCHA	
	Examiner	Art Unit	
	TYLER PAIGE	3661	

All participants (applicant, applicant's representative, PTO personnel):

(1) *TYLER PAIGE*. (3)_____.

(2) *John Whelan Reg# 32448*. (4)_____.

Date of Interview: *08 December 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1,7 and 13*.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner and applicant's representative John Whelan Reg#32448 along with other counsel discussed the art of record and the independent claim.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/T. P./ Examiner, Art Unit 3661	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	14/105,744
Filing Date	12/13/2013
First Named Inventor	Sascha Simon
Art Unit	3661
Examiner Name	Paige, Tyler D
Attorney Docket Number	APIO-Crash

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US- 2008/0203814 A1	08/28/2008	Kamiya, Shinji	
	AB	US- 2009/0037056 A1	02/05/2009	Erb, Yannick	
	AC	US- 2012/0123634 A1	05/17/2012	Shimizu, Takashi	
	AD	US- 5,785,347 A	07/28/1998	Adolph et al.	
	AE	US- 7,136,828 B1	11/14/2006	Allen et al.	
	AF	US- 2003/0029345 A1	02/13/2003	Tiernan et al.	
	AG	US- 2009/0309709 A1	12/17/2009	Bevacqua et al.	
	AH	US- 2004/0257208 A1	12/23/2004	Huang et al.	
	AI	US- 2011/0301795 A1	12/08/2011	Failing, Bryan	
	AJ	US- 2006/0085153 A1	04/20/2006	Oesterling et al	
	AK	US- 2011/0169654 A1	07/14/2011	Ketari, Nissaf	
	AL	US- 2006/0089153 A1	04/27/2006	Sheynblat, Leonid	
	AM	US- 2008/0287143 A1	11/20/2008	Banks et al.	
	AN	US- 2004/0152471 A1	08/05/2004	Macdonald et al.	
	AO	US- 2012/0208517 A1	08/16/2012	Zohar, Tsaba	
	AP	US- 2014/0180563 A1	06/26/14	Simon, Sascha	
	AQ	US- 2014/0180615 A1	06/26/14	Simon, Sascha	
	AR	US- 2014/0179348 A1	06/26/14	Simon, Sascha	
	AS	US- 2014/0179353 A1	06/26/14	Simon, Sascha	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	AT	JP 2007-183865 A	07/19/2007	Denso Corp.		
	AU	WO 03-095276 A1	11/20/2003	Cotty et al.		
	AV	JP 10-260241 A	09/29/1998	Honda Motor		
	AW	EP 0461888 A2	12/18/1991	Exxon Research		
	AX	JP 2009-177758 A	08/06/2009	Takashi, Takashima		

Examiner Signature	/Tyler Paige/	Date Considered	01/07/2015

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.P./

PTO/SB/08b (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	14/105,744
Filing Date	12/13/2013
First Named Inventor	Sascha Simon
Art Unit	3661
Examiner Name	Paige, Tyler D
Attorney Docket Number	APIO-Crash

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	AY	PCT/US2013/076432 International Search Report and Written Opinion, 04/09/2014, Ham, Joung Hyun.	
	AZ	PCT/US2013/076410 International Search Report and Written Opinion, 04/07/2014, Song, Ho Keun.	
	BA	PCT/US2013/076426 International Search Report and Written Opinion, 04/09/2014, Ham, Joung Hyun.	
	BB	PCT/US2013/076440 International Search Report and Written Opinion, 04/09/2014, Sohn, Byoung Cheol.	

Examiner Signature	/Tyler Paige/	Date Considered	01/07/2015

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 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 2 hours 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, 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 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.P./

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	Art Unit
	TYLER PAIGE	3661

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
701	31.5	11/04/2014	tdp
455	404.2	11/04/2014	tdp
342	70	11/04/2014	tdp

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	11/04/2014	tdp
East Search	11/04/2014	tdp
Plus Search	11/04/2014	tdp
NPL Search	11/04/2014	tdp

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
701	31.5	01/07/2015	tdp
455	404.2	01/07/2015	tdp
342	70	01/07/2015	tdp

/T.P./ Examiner.Art Unit 3661	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	**Art Unit**
	TYLER PAIGE	3661

CPC						
Symbol					**Type**	**Version**
G08G		1	/	205	F	2013-01-01
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

/T.P./ Examiner.Art Unit 3661	01/07/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/THOMAS G BLACK/ Supervisory Patent Examiner.Art Unit 3661	01/12/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	**Art Unit**
	TYLER PAIGE	3661

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
701	31.5

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
455	404.2				
342	70				

INTERNATIONAL CLASSIFICATION											
CLAIMED					**NON-CLAIMED**						
G	0	6	F	7 / 00 (2006.0)							
H	0	4	M	11 / 04 (2006.0)							
G	0	1	S	13 / 00							

/T.P./ Examiner.Art Unit 3661	01/07/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/THOMAS G BLACK/ Supervisory Patent Examiner.Art Unit 3661	01/12/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	**Art Unit**
	TYLER PAIGE	3661

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17												
	2		18												
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														

/T.P./ Examiner.Art Unit 3661	01/07/2015	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/THOMAS G BLACK/ Supervisory Patent Examiner.Art Unit 3661	01/12/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14105744	SIMON, SASCHA
	Examiner	Art Unit
	TYLER PAIGE	3661

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

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

CLAIM		DATE								
Final	Original	11/04/2014	01/07/2015							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
	7	✓	=							
	8	✓	=							
	9	✓	=							
	10	✓	=							
	11	✓	=							
	12	✓	=							
	13	✓	=							
	14	✓	=							
	15	✓	=							
	16	✓	=							
	17	✓	=							
	18	✓	=							

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (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)

54671 7590 01/28/2015
The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

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

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

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	12/13/2013	Sascha Simon	APIO-CRASH	1091

TITLE OF INVENTION: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	04/28/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
PAIGE, TYLER D	3661	701-031500

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 03-02 or more recent) attached. **Use of a Customer Number is required.**

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

(A) NAME OF ASSIGNEE: APIO SYSTEMS, INC.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): WARWICK, NEW YORK

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

4a. The following fee(s) are submitted:
☑ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ Applicant certifying micro entity status. See 37 CFR 1.29
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.
☐ 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.

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 FEBRUARY 9, 2015
Typed or printed name JOHN T. WHELAN Registration No. 32448

PTOL-85 Part B (10-13) Approved for use through 10/31/2013 OMB 0651-0033 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	14105744
Filing Date:	13-Dec-2013
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Filer:	John T. Whelan
Attorney Docket Number:	APIO-CRASH

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**480**

Electronic Acknowledgement Receipt

EFS ID:	21439043
Application Number:	14105744
International Application Number:	
Confirmation Number:	1091
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Customer Number:	54671
Filer:	John T. Whelan
Filer Authorized By:	
Attorney Docket Number:	APIO-CRASH
Receipt Date:	09-FEB-2015
Filing Date:	13-DEC-2013
Time Stamp:	15:02:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	1283
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	ApioCrashIFTransmittal.pdf	92538 2a14ba8c0fad16650dc71e5f40166e973e3839ff	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30299 a5c3852ef1345b7616e543a9e0168b9f9e454b48	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	122837		

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

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/105,744	03/24/2015	8989952	APIO-CRASH	1091

54671 7590 03/04/2015

The Law Office of John T. Whelan, LLC
2315 Hallowing Point Road
Prince Frederick, MD 20678

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):

Sascha Simon, Warwick, NY;

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

PTO/AIA/81A (02-15)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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

PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	8989952
Issue Date	2015-03-24
First Named Inventor	Sascha Simon
Title	System and Method for Detecting Vehicle Crash
Attorney Docket No.	SFARAI-105004US1

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 114903

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Patent Owner

Signature		Date	2020-08-25
Name	Sascha Simon	Telephone	
Title and Company	President, Sfara Inc.		

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. 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.**

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

Electronic Acknowledgement Receipt

EFS ID:	39832660
Application Number:	14105744
International Application Number:	
Confirmation Number:	1091
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Customer Number:	54671
Filer:	Kyle Montgomery Zeller
Filer Authorized By:	
Attorney Docket Number:	APIO-CRASH
Receipt Date:	26-JUN-2020
Filing Date:	13-DEC-2013
Time Stamp:	13:32:37
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	Assignee showing of ownership per 37 CFR 3.73	aia0096_105004US1.pdf	265677 4017f12f8791a2849b7900d81ea6a075e7381a7d	no	4
Warnings:					

Information:					
2	Power of Attorney	aia0081a.pdf	849231 36f0c6c680f406a5bf7a8fdaee41fa19463ca180	no	1
Warnings:					
Information:					
			Total Files Size (in bytes):	1114908	

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Sfara Inc.

Application No./Patent No.: 8989952 Filed/Issue Date: 2015-03-24

Titled: System and Method for Detecting Vehicle Crash

Sfara Inc., a corporation

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

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

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

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

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

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

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

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

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

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

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

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

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

   1. From: Sascha Simon To: Apio Systems Inc.

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

      Reel 034903, Frame 0013, or for which a copy thereof is attached.

   2. From: Apio Systems Inc. To: Driversiti Inc.

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

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

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

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

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: Driversiti Inc. To: Sfara Inc.

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

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

4. From: _____ To: _____

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

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

5. From: _____ To: _____

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

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

6. From: _____ To: _____

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

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

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

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

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

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

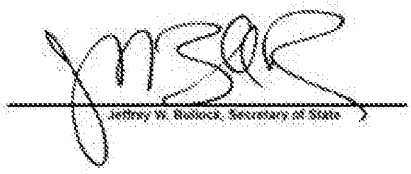
/Kyle Zeller/	2020-06-25
Signature	Date
Kyle Zeller	64748
Printed or Typed Name	Title or Registration Number

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "APIO SYSTEMS INC.", CHANGING ITS NAME FROM "APIO SYSTEMS INC." TO "DRIVERSITI INC.", FILED IN THIS OFFICE ON THE EIGHTEENTH DAY OF OCTOBER, A.D. 2016, AT 2:37 O`CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.





5186994 8100
SR# 20166251451

Authentication: 203179535
Date: 10-18-16

You may verify this certificate online at corp.delaware.gov/authver.shtml

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "DRIVERSITI INC.", CHANGING ITS NAME FROM "DRIVERSITI INC." TO "SFARA INC.", FILED IN THIS OFFICE ON THE SIXTH DAY OF NOVEMBER, A.D. 2017, AT 10:58 O`CLOCK A.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.





5186994 8100
SR# 20176942770

Authentication: 203528317
Date: 11-07-17

You may verify this certificate online at corp.delaware.gov/authver.shtml

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/105,744	12/13/2013	Sascha Simon	SFARAI-105004US1

CONFIRMATION NO. 1091

114903
Zeller IP Group PLLC
155 Water St.
Suite 6-6
Brooklyn, NY 11201

POA ACCEPTANCE LETTER

OC000000118101805

Date Mailed: 07/01/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/26/2020.

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

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

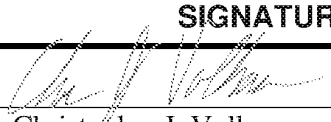
/sleutchit/

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

Note: This form is to be submitted with a Power of Attorney to identify the application to which the Power of Attorney is directed.

Application Number	14/105,744
Filing Date	December 13, 2013
First Named Inventor	Sascha SIMON
Title	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
Art Unit	3661
Examiner Name	TYLER D PAIGE
Attorney Docket Number	S18.12-0011

SIGNATURE of Patent Practitioner

Signature		Date	2022-07-15
Name	Christopher J. Volkmann	Telephone	(952) 467-6088
Registration Number	60,349		

PTO/AIA/80 (07-17)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:

[X] Practitioners associated with Customer Number: 117849

OR

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

Name	Registration Number

Name	Registration Number

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

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

[X] The address associated with Customer Number: 117849

OR

[ ]

Firm or individual name		
Address		
City	State	Zip
Country		
Telephone	Email	

Assignee name and address: Sfara, Inc.
221 River Street, 9th floor, Hoboken, NJ 07030

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

SIGNATURE of Assignee of Record

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

Signature	Date 04/26/2022
Name Sascha Simon	Telephone 201 663 6063 x700
Title President, Founder & CSO	

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

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

PTO/AIA/122 (08-12)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

CHANGE OF CORRESPONDENCE ADDRESS
Application

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

Application Number	14/105,744
Filing Date	December 13, 2013
First Named Inventor	Sascha Simon
Art Unit	3661
Examiner Name	TYLER D PAIGE
Attorney Docket Number	S18.12-0011

Please change the Correspondence Address for the above-identified patent application to:

☒ The address associated with Customer Number: 117849

OR

☐ Firm or Individual Name

Address

City	State	Zip

Country

Telephone	Email

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

I am the:

☐ Applicant

☒ Attorney or agent of record. Registration Number 60349.

☐ Registered practitioner named in the application transmittal papers who acts in a representative capacity under 37 CFR 1.34. See 37 CFR 1.33(a)(1). Registration Number _____.

Signature

Typed or Printed Name Christopher J. Volkmann

Date 07/15/2022 Telephone 952-467-6088

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 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.**

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. 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 regulation.

Doc Code: MFEE.C.AD
Document Description: Maintenance Fee Address Change

PTO/AIA/47 (11-21)
Approved for use through 11/30/2024. OMB 0651-0016
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number.

"FEE ADDRESS" INDICATION FORM

Address to:
Mail Stop Maintenance Fee
Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

-OR-

Fax to:
571-273-6500

INSTRUCTIONS: The issue fee must have been paid for the application(s) listed on this form. In addition, 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.

When to check the first box below: If you have a Customer Number to represent the fee address.

When to check the second box below: If you have no Customer Number representing the desired fee address, in which case a completed Request for Customer Number (PTO/SB/125) must be attached to this form. For more information on Customer Numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

For the following listed application(s), please recognize as the "Fee Address" under the provisions of 37 CFR 1.363 the address associated with:

☑ Customer Number: 117849

OR

☐ The attached Request for Customer Number form (PTO/SB/125)

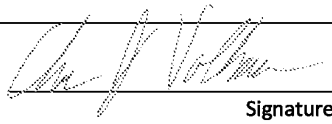
PATENT NUMBER (if known)	APPLICATION NUMBER
8,989,952	14/105,744

Completed by (check one):

☐ Applicant/Inventor

☑ Attorney or Agent of record 60349 (Reg. No.)

☐ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) is enclosed or was filed on _____ (Date)



Signature

Christopher J. Volkmann
Typed or printed name

952-467-6088
Requester's telephone number

07/15/2022
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. If the assignee is a juristic entity, this form must be signed by a patent practitioner (attorney or agent) of record. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted

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 0651-0016. Public burden for this form is estimated to average 5 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.** 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

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) 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)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) 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, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.
https://www.govinfo.gov/content/pkg/FR-2013-03-29pdf/2013-07341.pdf

Electronic Acknowledgement Receipt

EFS ID:	46197353
Application Number:	14105744
International Application Number:	
Confirmation Number:	1091
Title of Invention:	SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH
First Named Inventor/Applicant Name:	Sascha Simon
Customer Number:	114903
Filer:	Christopher James Volkmann/Dawn Rud
Filer Authorized By:	Christopher James Volkmann
Attorney Docket Number:	SFARAI-105004US1
Receipt Date:	15-JUL-2022
Filing Date:	13-DEC-2013
Time Stamp:	13:03:59
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	Power of Attorney	S18-12-0011-POA-2022-07-15.pdf	469341 ddbbc30acb2ad89e19b58f7d6e5403df69964ebb	no	2
Warnings:					

Information:					
2	Change of Address	S18-12-0011-ChangeofCorrespondenceaddressform-2022-07-15.pdf	188869 fe059e03c4422a4ef4f5efbe10692c49e8ef44ee	no	2
Warnings:					
Information:					
3	Maintenance Fee Address Change	S18-12-0011-feeaddressindicationform-2022-07-15.pdf	281301 7c4737cdb980960c5cb788aba90b5e3f78869a1b	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	939511	

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/105,744	12/13/2013	Sascha Simon	S18.12-0011

CONFIRMATION NO. 1091

POWER OF ATTORNEY NOTICE

114903
Zeller IP Group PLLC
Kyle Zeller
247 W 87th ST
10K
New York, NY 10024

OC00000135241787

Date Mailed: 07/19/2022

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/15/2022.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

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

/sltorres/

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/105,744	12/13/2013	Sascha Simon	S18.12-0011

CONFIRMATION NO. 1091

117849
Kelly, Holt & Christenson, P.L.L.C.
141 West 1st Street, Suite 100
Waconia, MN 55387

POA ACCEPTANCE LETTER

OC000000135241818

Date Mailed: 07/19/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/15/2022.

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

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

/sltorres/