FISH.
FISH & RICHARDSON

Street Address
Fish & Richardson P.C.
One Marina Park Drive
Boston, MA 02210-1878

Mail Address
P.O. Box 1022
Minneapolis, MN 55440-1022

617 542 5070 main
877 769 7945 fax

May 6, 2019

Attorney Docket No.: 44355-0046001

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

Inventors: HARI BALAKRISHNAN, WILLIAM BRADLEY, SAMUEL ROSS MADDEN AND JUN-GEUN PARK

Title: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

Enclosed are the following papers, including those required to receive a filing date under 37 CFR 1.53(b):

	Pages
Specification	28
Claims	5
Abstract	1
Drawings	12
Declaration	4

Enclosures:

— Application Data Sheet, 9 pages.
— Power of Attorney, 2 pages.
— Certification and Request for Prioritized Examination (Track I), 1 page

The applicant claims small entity status under 37 CFR 1.27.

Basic Filing Fee	$75
Search Fee	$330
Examination Fee	$380
Publication fee	$0
Track I processing fee	$70

Petitioner Ex 1002, p. 1
Zendrive v. CMT, IPR2023-01440

Track I prioritized examination fee			$2000
Total Claims 30	10 over 20	**10 x $50**	$500
Independent Claims 2	0 over 3	**0 x $230**	$0
Fee for Multiple Dependent claims			$0
Application size fee for each 50 pages over 100 Total Sheets: 46 x .75 - 100/50 = 0 x			$0
Total Filing fee			$3355

Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the attorney docket number shown above.

I hereby authorize the USPTO to communicate in response to email communications from the undersigned and practitioners under Customer No. 26161 in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via email. I understand that a copy of these communications will be made of record in the application file. (MPEP 502.03).

If this application is considered to be incomplete, or if a telephone conference would otherwise be helpful, call the undersigned at (617) 542-5070.

Send all correspondence to:

26161
Customer Number

Respectfully submitted,

/David L. Feigenbaum/

David L. Feigenbaum
Registration No. 30,378

Enclosures

DLF/cao
23892002.doc

Abstract

Among other things, information generated by sensors of a mobile phone and indicative of motion of the mobile phone and state information indicative of a state of operation of the mobile phone are monitored. Based on the monitoring, distraction by a user of the mobile phone who is a driver of a vehicle is determined.

23885513.docx

Petitioner Ex 1002, p. 3
Zendrive v. CMT, IPR2023-01440

Claims

1. A method comprising

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors comprising at least an accelerometer and a gyroscope,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device,

based on the identified physical states, generating discrete events separated in time, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver, and

determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode.

2. The method of claim 1 in which the physical state comprises an operational state of the mobile device.

3. The method of claim 2 in which the operational state comprises a state of locking of the mobile device.

4. The method of claim 3 in which the operational state comprises a state of a phone call.

5. The method of claim 4 in which the operational state comprises a power condition.

6. The method of claim 4 in which the operational state comprises an aspect of a foreground app running on the mobile device.

7. The method of claim 1 in which at least one of the discrete events comprises a possible discrete distraction event during the trip.

8. The method of claim 1 in which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer

Petitioner Ex 1002, p. 4
Zendrive v. CMT, IPR2023-01440

or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode.

9. The method of claim 8 in which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction.

10. The method of claim 9 in which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction.

11. The method of claim 10 in which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

12. A method comprising

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip,

determining a possible distraction episode based on one or more of the physical states, and

based on the received signals, determining that the mobile device is engaged in an active telephone call.

13. The method of claim 12 comprising

based on the received signals, determining whether the mobile device is engaged in an active telephone call using a handset speaker, an internal speaker phone, or an external speaker.

14. The method of claim 12 comprising

based on the received signals, determining a proximity of a user's hand to the mobile device.

Petitioner Ex 1002, p. 5
Zendrive v. CMT, IPR2023-01440

15. The method of claim 12 comprising

based on the received signals, determining whether a display screen of the mobile device is being tapped.

16. The method of claim 12 comprising

based on the received signals, identifying a foreground app running on the mobile device.

17. The method of claim 12 comprising

based on the received signals, determining a behavior of a conveyance being used for the trip.

18. The method of claim 12 in which determining the context of a possible distraction episode comprises:

detecting a rotation of a display screen of the mobile device.

19. The method of claim 18 comprising

detecting a tap on the display screen based on a parameter of the rotation.

20. The method of claim 12 comprising

based on the received signals, determining a frequency of taps on a display screen of the mobile device.

21. The method of claim 12 comprising

based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices.

22. The method of claim 20 comprising

determining an occurrence of a tapping event based on a tapping score based on taps in the sequence and periods of time between successive taps.

23. The method of claim 12 comprising

based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode.

Petitioner Ex 1002, p. 6
Zendrive v. CMT, IPR2023-01440

24. The method of claim 23 comprising

based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode.

25. The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and

the context of the possible distraction episode comprises the mobile device being mounted in the conveyance.

26. The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and

the context of the possible distraction episode is not that the mobile devices mounted.

27. The method of claim 24 in which

the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and

the context of the possible distraction episode comprises the mobile device being held in the vicinity of any year of an occupant of the conveyance.

28. The method of claim 24 in which

the display screen of the mobile device faces generally downwardly, and

the context of the possible distraction episode comprises the mobile device not being used.

29. The method of claim 24 comprising

reporting the distraction context and the possible distraction episode to a user of the mobile device.

30. The method of claim 24 comprising

scoring the possible distraction episode using the distraction context.

Petitioner Ex 1002, p. 8
Zendrive v. CMT, IPR2023-01440

Determining, Scoring, and Reporting Mobile Phone Distraction of a Driver

Background

This description relates to determining and reporting mobile phone distraction of a driver.

Determining and reporting mobile phone distraction of a driver is useful because, among other reasons, driver mobile phone distraction poses a significant crash and accident risk.

In an existing system developed by Cambridge Mobile Telematics serving various safe-driving mobile applications, sensor data from personal mobile devices (e.g., smartphones), in some cases augmented with sensor data from an optional device attached to a vehicle, has been used to measure the quality of driving of drivers with the goal of improving their driving to make roads safer. The sensors available on a mobile phone that are useful in achieving this goal include, but are not limited to, position sensors (e.g., the Global Positioning System, GPS), a three-axis accelerometer to measure the phone's acceleration along three orthogonal axes, and a three-axis gyroscope to measure the phone's angular velocity along the three axes.

We use the term "mobile device" to include, for example, any kind of equipment that can be carried by a user without requiring wired connection to a communication link and is subject to being used, while a user is driving, in a way that can cause distraction of the user from the driving. Mobile devices include mobile phones, for example.

In the existing system, users install a mobile application (app) on the mobile phone and drive with it. The app runs in the background, automatically detecting the start and stop of each trip using information from location and mobile phone activity APIs provided by the iOS and Android operating systems, in some cases augmented with information from the inertial sensors on the phone; or, using wireless signals from an in-vehicle device such as the tag device from Cambridge Mobile Telematics (described in patent application publication US20150312655A1and incorporated here by reference). The mobile app then gathers sensor data from the movement sensors, including position sensors, accelerometer, and gyroscope when the user (of the phone) is driving. This sensor data is analyzed and initially processed on the mobile phone, then sent to servers in the "cloud" via a wireless network (e.g., Wi-Fi, cellular, or any other network providing connectivity to the servers). At the cloud servers, a telematics engine processes the stream of sensor data from the mobile device to accurately estimate both the

dynamics of the vehicle and the movement patterns of the mobile phone within the vehicle. These computations could be run on the mobile device itself without the data being sent to cloud servers.

The estimated vehicle dynamics include map-matched positions (latitude/longitude/altitude), aspects of which are disclosed in US patent 8,457,880, incorporated here by reference. The estimated vehicle dynamics also include the "longitudinal" (in the direction of the vehicle, i.e., the forward acceleration and braking) and "lateral" acceleration (e.g., cornering) of the vehicle, aspects of which are described in US patent 9,228,836, incorporated here by reference. For braking, acceleration, and cornering, the system uses the accelerometer and gyroscope data from the phone—which measures the force the phone is experiencing along three orthogonal axes, typically two axes parallel to the surface (e.g., the surface of the display screen) of the phone and one axis perpendicular to the surface of the mobile phone—and transforms these signals into an estimate of the acceleration of the vehicle, while ensuring that the movement of the phone *relative* to the vehicle itself does not contribute. This process includes estimating and segmenting periods of time when the phone is moving in a reference frame independent of the vehicle, e.g., because the orientation of the phone was changed by the user. As discussed later, the process by which this segmentation of a trip into distinct periods when the phone was being significantly moved within the vehicle is important for the assessment of phone distraction.

The servers in the cloud also compute scores for aspects of the user's driving, taking into account factors such as patterns of hard braking, at-risk speeding, harsh acceleration, harsh cornering, amount of driving, time of driving, and the user's phone distraction. In a version called the DriveWell^{tm} program, the servers also provide an overall score (typically over a rolling time window, such as over one day, two weeks, one month, three months, one year, etc.) and features to engage users and incentivize safer driving, such as personalized driving tips, a leaderboard where users can compare their scores (to their families, friends, neighbors, co-workers, town, state, etc.), and cash prizes for safe driving. A key aspect of the scoring is an assessment of phone distraction.

The server also applies several classifiers to the sensor data captured from the mobile device. One such classifier produces a probability or likelihood estimate as to whether the sensor data represents data from a car or some other vehicle, such as bus, train, bike, etc. Another classifier

Petitioner Ex 1002, p. 10
Zendrive v. CMT, IPR2023-01440

estimates, for car trips, whether the user of the device was a passenger or driver, based on both the sensor data as well as other contextual information, such as the start and end locations of the trip.

A "phone movement" or "phone distraction" classifier determines the locations and times during which a user was using her phone during a trip. Typically, the location information about distraction events are provided as a timestamped sequence of road segments, or more generally, as <start, end> latitude/longitude position tuples together with polylines connecting the start and end positions by way of zero or more intermediate positions (also called "waypoints"). In various versions of the system this feature has been termed "phone movement", "phone motion", "phone use", "phone distraction", or "distraction".

The existing method builds on the approach disclosed in US patent 9,228,836, incorporated here by reference, in which the sensor data obtained from the trip is segmented to demarcate periods during which the phone was deemed to have moved relative to the frame of reference of the vehicle (e.g., it was moved either by a user or for other reasons within a vehicle). This procedure involves the use of accelerometer and/or gyroscope data; when the dynamics of these sensors is above various thresholds, the phone is considered to have "moved".

The movement of a phone does not by itself constitute "distraction"; it is, however, a factor *indicative* of distraction—a necessary but not sufficient condition. To classify whether a particular set of segments of a trip with phone movement indicates distraction, the existing method augments the inference of phone movement with two further factors: (i) was the user likely to be interacting with the device when the phone movement occurred, and (ii) was the vehicle moving at the time of the phone movement. A specific indicator of whether the user was interacting with the phone uses the phone's screen state ("on" signifies interaction) and/or the phone's phone-lock state. With respect to vehicle movement, the existing method considers a threshold vehicle speed below which the distraction is not considered to be occurring (e.g., a user may have pulled over and be looking at their phone or driving slowly).

Thus, three conditions must all hold true for a distraction to be considered risky (and therefore a distraction episode) in the existing method:

A. Phone movement as inferred from gyroscope and/or accelerometer data.

B. User interacting with phone, inferred particularly from phone-screen state and phone-lock state.

C. The vehicle speed during the segment exceeding a threshold; various statistics of the speed over the duration of the distraction can be used, including the mean, median, or maximum.

The user is able to view on their mobile app's trip interface a scored phone distraction episode. as an overlay on a map with the road segments shown in a different color or shade from the rest of the trajectory, and including some additional information (e.g., duration of distraction, speed of vehicle). In addition, by aggregating all distraction episodes for a trip, each trip is given a phone distraction score (typically on a scale of 1 to 5 or 1 to 10). An aggregate distraction score is also computed over a rolling period of time (e.g., past two weeks of driving, or any time period). Figure 13 illustrates this interface in the existing system.

The existing method therefore includes a concept of episodes and severity metrics, logging of periods of phone motion, in particular: duration of phone motion, speed of vehicle, and road type where the distraction occurred. The existing method relies on acceleration, gyro readings, and screen state of the mobile device, as well as acceleration from an external device to detect phone motion. Sensor readings indicating movement of the mobile device must collectively last at least a minimum duration to log a phone motion episode; and movements detected within a set time interval of each other are incorporated into the same episode. These episodes are assessed individually to assign a risk to the event, which is reported to users. The episodes are also assessed collectively in generating a distraction score to display to a user: the distraction scores are assessed per driving trip and per calendar period.

Summary

Here we describe improvements to the existing method developed by Cambridge Mobile Telematics. These enhancements include the following, among others: 1. The construction and use of "distraction episodes" to assess, score, and inform users of phone distraction occurring on a trip. 2. The use of additional factors, termed "distraction context", to identify user interaction with the phone in addition to screen state and phone-lock state, such as the tapping of a phone screen by the user, and processes to measure these additional factors. 3. The use of user feedback to obtain information about whether a particular distraction episode was relevant or not, for

example, whether the user was a passenger, or when the user was a driver and his phone was used by a passenger in the vehicle (e.g., by a child). 4. The use of distraction context to score each phone distraction episode and to score each trip.

We use the term "trip" broadly to include, for example, any continuous period of driving within a car or other conveyance. A trip can begin at a certain starting location and time and end at a certain ending location and time.

We use the term "distraction episode" to include, for example, any occurrence, during a segment of a trajectory of a trip or during a time period of a trip, of a perceptual or other disruption, confusion, diversion, or interruption of the activities of a driver in driving a conveyance.

We use the term "distraction context" broadly to include, for example, one or more circumstances or conditions associated with a distraction episode.

We use the term "conveyance" broadly to include, for example, any vehicle or other transportation device that can be driven on roads during a trip. Conveyances can include cars, trucks, carts, motorcycles, and bicycles to name a few.

In general, in an aspect, signals are received from one or more detectors housed in a mobile device while the mobile device is on a trip. The received signals from the detectors are used to identify one or more physical states of the mobile device during the trip. Based on the identified physical states, discrete events separated in time are generated. A distraction episode is determined that spans two or more of the events during the trip.

Implementations may include one or a combination of two or more of the following features. The detectors include an accelerometer. The detectors include a gyroscope. The physical state includes motion of the mobile device relative to a conveyance used in the trip. The physical state includes an operational state of the mobile device. The operational state includes a state of a display screen of the mobile device. The physical state includes speed of motion of the mobile device along a trajectory of the trip. The operational state includes a state of locking of the mobile device. The operational state includes a state of a phone call. The operational state includes a power condition. The operational state includes an aspect of a foreground app running on the mobile device. At least one of the discrete events includes a possible discrete distraction event during the trip. At least one of the discrete events includes the mobile device being picked

up. At least one of the discrete events includes tapping on the mobile device. At least one of the discrete events includes the mobile device being held or facing in the direction of a driver. At least one of the discrete events includes the mobile device being rotated.

Determining a distraction episode includes determining a start of the distraction episode. Determining a start of the distraction episode includes determining when a first physical state has begun, provided that a second physical state occurs simultaneously with the first physical state within a threshold period after the first physical state began. Determining a distraction episode includes determining an end of the distraction episode. Determining an end of the distraction episode includes determining that a physical state of the mobile device includes no interaction by a user. Determining an end of the distraction episode includes determining that a physical state of the mobile device includes no further motion of the mobile device. Determining that a physical state of the mobile device includes no further motion of the mobile device includes determining that accelerometer or gyroscope values are lower than a threshold. The threshold differs from a threshold used in determining motion of the mobile device at the start of the distraction episode. The end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device is no indication of a continued distraction. Determining an end of the distraction episode includes determining that a context of the mobile device indicates no further distraction. Determining a distraction episode includes determining a possible distraction episode in determining that the possible distraction episode includes a true distraction episode. Determining that the possible distraction episode includes a true distraction episode includes determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

The determined distraction episode is assessed. A score is assigned to the determined distraction episode. Information about a distraction episode is reported to a user of the mobile device or to another party.

In general, in an aspect, signals are received from one or more detectors housed in a mobile device while the mobile device is on a trip. The received signals from the detectors are used to identify one or more physical states of the mobile device during the trip. A possible distraction episode is determined based on one or more of the physical states. A context of the possible distraction episode is determined.

Implementations may include one or a combination of two or more of the following features. Determining the context of the possible distraction episode includes: receiving signals from an operating system of the mobile device or an app running on the mobile device. Based on the received signals, a determination is made that the mobile device is engaged in an active telephone call. Based on the received signals, a determination is made whether the mobile device is engaged in an active telephone call using a handset speaker, an internal speaker phone, or an external speaker. Based on the received signals, a proximity of a user's hand to the mobile device is determined. Based on the received signals, a determination is made whether a display screen of the mobile device is being tapped. Based on the received signals, a foreground app running on the mobile device is identified. Based on the received signals, a behavior of a conveyance being used for the trip is determined.

Determining the context of a possible distraction episode includes: detecting a rotation of a display screen of the mobile device. A tap on the display screen is determined based on a parameter of the rotation. Based on the received signals, a frequency of taps on a display screen of the mobile device is determined. Based on the received signals, temporal parameters of a sequence of taps on a display screen of the mobile device are compared with temporal parameters of known sequences of taps on display screens of mobile devices. An occurrence of a tapping event is determined based on a tapping score based on taps in the sequence and periods of time between successive taps.

Based on the received signals, an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode is determined. Based on the orientation of the mobile device or the display screen of the mobile device, the context of the possible distraction episode is identified. When the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, the context of the possible distraction episode includes the mobile device being mounted in the conveyance. When the display screen of the mobile device faces the back of a conveyance used for the trip and the mobile device is oriented in a direction for normal use by an occupant of a conveyance, the context of the possible distraction episode is not that the mobile devices mounted. When the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, the context of the possible

distraction episode includes the mobile device being held in the vicinity of an ear of an occupant of the conveyance. When the display screen of the mobile device faces generally downwardly, the context of the possible distraction episode includes the mobile device not being used. The distraction context and the possible distraction episode are reported to a user of the mobile device. The possible distraction episode is scored using the distraction context. The user is shown how the user was distracted when the phone distraction episode occurred. The context provides an input for scoring distraction episodes.

In general, in an aspect, signals are received from one or more detectors housed in a mobile device while the mobile device is on a trip. A possible distraction episode is determined based on the received signals. Information is received from a user who was a participant on the trip indicative of a circumstance of the trip. A determination is made that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip.

Implementations may include one or a combination of two or more of the following features. The circumstance of the trip includes the user of the mobile device during the possible distraction episode not being a driver of the trip. Information about the possible distraction episode is presented to a user. The information indicative of the circumstance of the trip is received from the user in response to the presenting of the information about the possible distraction episode.

The user not being a driver of the trip is determined automatically. The user not being a driver of the trip is determined automatically based on previous trips labeled by users. The determining of a possible distraction episode includes varying the rate at which possible distraction episodes are determined based on a parameter, and adjusting the parameter based on information received from users about whether possible distraction episodes were relevant distraction episodes. Two or more such possible distraction episodes are determined based on the received signals, and the possible distraction episodes for a given user are aggregated based on at least one of the following factors: types of possible distraction episodes, speeds associated with possible distraction episodes, types of roads, frequencies of routes traveled, or length of possible distraction episodes. The information about the aggregated possible distraction episodes is reported to the user.

In general, in an aspect, signals are received from one or more detectors housed in a mobile device while the mobile devices on a trip. The received signals are indicative of a possible

distraction episode and of the context of the possible phone distraction episode. A relevant distraction episode is determined from the possible distraction episode, and the relevant distraction episode is scored.

Implementations may include one or a combination of two or more of the following features. The scoring includes accounting for the context including at least one of: speed, time of day, day of week, season, road type, weather conditions, or direction of motion. The scoring includes accounting for the context including at least one of movement or orientation of the mobile device or tapping on a display screen of the mobile device. The result of the scoring is reported to a user. The reporting includes showing the user a location of a relevant distraction episode along a trajectory of the trip. The reporting includes showing the user a score that resulted from the scoring. The reporting includes reporting to a third party. The location information for relevant distraction episodes for two or more trips is aggregated. The contexts of relevant distraction episodes are aggregated. The aggregated contexts are reported with respect to at least one of: speed distribution during relevant distraction episodes, orientations of mobile devices during relevant distraction episodes, and activity state distributions of mobile devices during relevant distraction episodes.

In general, in an aspect, a report is made to a user of a mobile device of an inference that the user was distracted by use of the mobile device during a distraction episode that occurred while the user was driving. Information is received from the user indicative of whether the inference is correct. If incorrect, information is received from the user indicative of why the inference is incorrect.

In general, in an aspect, an extent of distraction of a driver of a vehicle is determined by use of a mobile device for each of two or more distraction episodes that occurred during a trip. The extent of distraction of the driver during the trip is scored based on the determined extents and information from distraction context for the distraction episodes.

In general, in an aspect, operation of a mobile phone is enhanced in connection with a determination of phone distraction of a user of the mobile phone while driving. For a period during a trip that has a start and an end, the mobile phone generates a set of measurements representing angular velocity or acceleration or both of the mobile phone and generates timestamps for each of the measurements, for a period during the trip. The mobile phone

generates a set of phone operational states or changes in phone operational states or both and generates timestamps for each of the phone operational states or changes in the phone operational states. During or after the trip, at least one of the sets of measurements, at least one of the sets of phone operational states, and the corresponding time stamps is provided for analysis at the mobile phone or at a server or a combination of them, to determine at least one phone distraction episode during the trip.

Implementations may include one or a combination of two or more of the following features. The phone operational states include at least one of a screen of the mobile phone being on, the mobile phone being unlocked, a phone call, or another state indicating a possible interaction of the user with the mobile phone. The period includes the entire trip. The period includes a moving time window with respect to the trip.

In general, in an aspect, there is monitoring of information generated by sensors of a mobile phone and indicative of motion of the mobile phone and state information indicative of a state of operation of the mobile phone. Based on the monitoring, distraction by a user of the mobile phone who is a driver of a vehicle is determined.

Implementations may include one or a combination of two or more of the following features. The monitoring of includes monitoring acceleration or angular velocity or both of the mobile phone. The monitoring of information includes detecting movement of the mobile phone. The monitoring of information includes determining a phone operational state or changes of a phone operational state or both. The determining of distraction includes generating a phone distraction episode. The determining of distraction includes determining that motion of the mobile phone lasted longer than a threshold.

In general, in an aspect, determining that distraction includes determining that the magnitude of the motion of the mobile phone exceeds a threshold. Determining the distraction includes determining that motion of the phone has ended. Determining that motion of the phone has ended includes at least one of determining that the change in orientation of the mobile phone relative to gravity has fallen below a threshold; determining that the angular rotation of the mobile phone has fallen below a threshold: determining a volatility of acceleration or angular velocity or both of the mobile phone; and determining that tapping on the screen of the phone has ended.

In general, in an aspect, there is a determination from information about motion of a mobile phone or a state of operation of a mobile phone or both, that a user of the mobile phone is distracted during driving of a vehicle, and a determination of information about at least one of an orientation of the phone, or a direction in which a display of the phone is facing or a state of the operation of the phone information about a context in which the user of the mobile phone was distracted during driving of the vehicle.

Implementations may include one or a combination of two or more of the following features. The context includes at least one of: the mobile phone was mounted on the car; the user was holding the mobile phone and the display was facing the user; and the mobile phone was being held by the user near the user's ear. The state of operation of the mobile phone inherently specifies the context.

In general, in an aspect, information is presented to a user of a mobile phone through a user interface of the mobile phone information about distraction associated with use of the mobile phone while the user was driving a vehicle. The information is presented on a map showing a trajectory of a trip in which the distraction occurred. Feedback is received from the user about accuracy of the information presented on the map.

In general, in an aspect, a time sequence of information about angular velocity of the mobile device is received from the mobile device. Peaks of angular velocity along one or more axes relative to the mobile phone are determined. A determination is made that tapping is occurring on a screen of the mobile device based on the peaks.

Implementations may include one or a combination of two or more of the following features. The peaks include related peaks that occur along two orthogonal axes. The determining includes analyzing a frequency of the tapping. The determining includes comparing the detected peaks with comparison peaks known to be associated with tapping. The states of operation of the mobile phone are determined based on the states of operation.

These and other aspects, features, and implementations can be expressed as methods, apparatus, systems, components, program products, methods of doing business, means or steps for performing a function, and in other ways.

These and other aspects, features, and implementations will become apparent from the following descriptions, including the claims.

Description

Figures 1 and 5 are block diagrams.

Figures 2, 6, 7, 8, and 13 are screenshots.

Figures 3, 4, 11, and 12 are timing graphs.

Figures 9, 10, and 14 are conceptual diagrams.

Among the features of and advantages achieved by various implementations of the technology that we describe here are the following:

1. Distraction episodes: The technology aggregates an intermittent sequence of individual distraction events that may not exist continuously—e.g., whenever the phone is determined to have moved within the vehicle, and the speed exceeds a threshold, and the screen is on and/or phone isn't locked and/or some form of user interaction is occurring—into a single discrete "distraction episode".

2. Distraction context: The technology takes advantage of new ways to assess whether a user is interacting with his phone, including steps to identify phone tapping. Such factors constitute a "distraction context", and are useful to assess the significance of a possible distraction episode and to score its degree of risk accurately.

3. Incorporating user feedback: At least two additional elements of interaction and feedback pertaining to distraction are useful in addition to providing a way for a user to label a trip as a "passenger" or even as a different transport mode (e.g., bus, train, etc.). In some implementations, the first is to allow a user to dispute a flagged distraction episode by interacting with a map overlay of the route where the distraction episodes are specifically highlighted and are "clickable" for feedback to inform the system that the user did not believe there was a relevant distraction episode at the claimed time and location. The second is the common situation in which the user of the phone is in fact the driver, and the dispute is not the existence of a possible distraction episode, but whether the possible distraction episode is a relevant distraction

episode for the user as a driver, given the source of the distraction, such as a passenger in the car and not the driver.

4. Scoring relevant distraction episodes using distraction context: By taking the distraction context into account when scoring a distraction episode, the system is able to provide a score that better captures crash risk than prior approaches to scoring phone distraction.

Some implementations of the technology enhancements that we describe here—for mobile phones, cloud servers, and systems that analyze information from mobile phones—determine, among other things, distractions (e.g., distraction episodes) of drivers associated with uses of mobile phones and report information about the distractions to the drivers (and, in some cases, other parties). The information analyzed and reported can include, for example, when and where the distraction episodes occurred and other aspects of the contexts of the distractions, including the speed, the acceleration or braking, the cornering or swerving or turning, the time-of-day, day-of-week, or month-of-year, the amount of prior driving on the trip, the amount of prior driving during the preceding several hours or the same day, as well as the nature of the user's interaction with the phone. The distraction context is useful in assessing a score, and is intended to capture information indicative of the risk of a crash or accident.

Although the existing system scored distraction by estimating the total amount of time spent distracted while driving, the technology that we describe here provides an approach that may better capture the risk of an accident or crash.

In some implementations of the technology that we describe here, the distraction is determined using data from sensors on a mobile phone. In some cases, the technology focuses on distractions associated with holding or using the mobile phone, such as picking up a phone and talking, using an app in ways that involve moving the phone, or tapping on the screen of the phone, typically without regard to the particular identity of the app. In some instances the technology determines certain kinds of distraction that may occur when the mobile phone is mounted in a fixed position, or when the driver is using the phone hands-free, so as to not adversely count such occurrences toward (or otherwise to reduce their impact on) a distraction score attributable to the driver.

In some cases, the kinds of distractions of a driver that are targets of the technology that we describe here may be perceptual distractions that cause a driver to divert his eyes from the road or other feature in the field of view in the direction of driving, rather than distraction that may

occur with, for example, hands-free calling, which may involve cognitive impact but not necessarily perceptual distraction.

In some implementations of the technology that we describe here, a basic method for detecting phone distraction (e.g., perceptual distraction) during driving proceeds as follows.

As shown in figure 1, from the start of a trip to the end of the trip (a complete trip) or in some cases for a portion of a complete trip, phone sensor measurements 20 and states of operation 22 of the mobile phone 24 (which we sometimes refer to as phone operational states) are gathered. The measurements and states can include, for example, one or more of the following timestamped data: 3-axis accelerometer readings (typically gathered at a rate of 10 Hz or higher) 25; 3-axis gyroscope readings (typically gathered at a rate of 10 Hz or higher) 26; speed measurements (from GPS signals, typically gathered at a rate of 1 Hz or possibly from the vehicle's OBD interface) 30; phone barometer measurements (typically gathered at a rate of 1 Hz or higher) 27; phone magnetometer measurements (typically gathered at a rate of 10 Hz or higher) 29; and phone operational states 32, e.g., <time, state> or <time, new state>. The phone operational state may indicate, for example: screen on/off, device locked/unlocked, call state (e.g., "on phone"), "user activity" as defined by app events (like "launch the app" or "force quit"), the identity and/or nature of the foreground application currently running (if any), whether the phone is plugged in or not, and other raw data useful to compute the distraction context. Typically the phone operational state is recorded as a phone operational event 36 at the start of the trip and whenever the phone operational state changes, rather than being recorded as a periodic or isochronous time series.

The process of gathering measurements and operational states can store all measurements from the beginning of the current trip to the end of the trip (which may be preferable) or can maintain a circular buffer with limited capacity to store a set of most recent measurements for a moving-window time period of a certain duration.

Figure 3 shows an example of typical data from the 3 axes of the gyroscope; time periods when the phone's screen are on are apparent.

Figure 4 shows an example of typical data for the GPS speed. The gray portions 90 indicate regions where the GPS speed was unavailable; when GPS speed is unavailable, the system errs in favor of a driver being undistracted by assuming that the vehicle may be at rest. By focusing on

Petitioner Ex 1002, p. 22
Zendrive v. CMT, IPR2023-01440

regions in which the speed data is available, determinations that the driver has been distracted by his phone during those periods become even more credible.

Among other things, the technology described here (i) constructs distraction episodes including a start and an end for each distraction episode, (ii) constructs the distraction context for each distraction episode, (iii) provides an interface to display the distraction episode and obtain feedback from the user on a mobile app, and (iv) scores each distraction episode and produces an aggregate distraction score for the trip.

Distraction episodes

Distraction episodes are determined based on aggregations of one or more distraction events. A single trip can have zero or more distraction episodes. When both condition A and condition B described in the Background section hold true, the technology determines that a potential distraction event has occurred; if condition C also holds, then the potential distraction event becomes a relevant distraction event.

Because a user may move the phone only intermittently while driving, the accelerometer and gyroscope sensor data will exhibit periods of movement interspersed with periods of no movement often in rapid succession. More generally, one or two of the three conditions A, B, and C may not hold true for some amount of time, as shown for example in figure 14 where within a 30-second interval the three conditions all hold true only during intermittent periods even though the driver's use of the phone was essentially continuous through the entire 30-second period. Each of the intermittent periods when all three conditions hold true can be considered distraction events. Yet the technology avoids treating each of them as a separate distraction episode, a treatment that would be inconsistent with the fact that the driver was effectively engaged in a distraction episode for the entire 30-second period including the intervening periods when fewer than all of the conditions held true.

The technology that we describe here provides a way to define the start and end of a distraction episode to account for such situations.

The technology is arranged to treat a distraction episode as the finest granularity situation for which scoring is done and for which information may be presented to users both for feedback and for informational purposes. Therefore, in the situation described with respect to figure 14,

Petitioner Ex 1002, p. 23
Zendrive v. CMT, IPR2023-01440

the technology does not score each of the distraction events, but instead only scores the distraction episode. For this purpose, the technology applies certain principles, discussed below, to analyze the sensor signals and the timing of the occurrence of various conditions in deciding that a situation should be considered a distraction episode and also in determining when such an episode started and ended.

Sometimes, the start of a distraction episode occurs before conditions A and B simultaneously hold true. For example, a user may pick up his phone from a cup-holder or pocket and a few seconds later turn it on. In that case, the start of the distraction episode will be considered to have occurred when one of the two conditions A and B first holds true, provided that both conditions simultaneously hold true at some time within a threshold period of time after the one of the two conditions first holds true. Conversely, if either A or B holds true, but not both, at some point in time, and the other of A and B does not also hold true within the ensuing threshold period of time, then no distraction episode is deemed to have begun. Typical values for this threshold are between 5 and 30 seconds.

Similarly, a given distraction episode may not end when either condition A or condition B no longer holds true. Instead, the end of a distraction episode can be considered to have occurred only when all of the following conditions hold true:

(i) The distraction context determination described below indicates that there is no further distraction (e.g., there is no more phone tapping by the user).

(ii) The phone-movement detection process determines that there is no further phone movement (condition A), provided that the thresholds for accelerometer and/or gyroscope values that result in a determination of phone movement at the end of a distraction episode can in general be different from the values to determine the start of a distraction episode. When used, such a threshold difference can be useful because a smaller motion such as holding the phone near the ear while engaging in a phone call may justify extending the end of the distraction episode rather than terminating it.

(iii) A refractory period has elapsed during which neither of the above conditions (i) or (ii) holds true. A typical refractory period may be on the order of 30 to 60 seconds. The refractory period can be adjustable using the feedback interface provided to users.

In some implementations, a fourth condition is also required:

(iv) Condition B no longer holds true (i.e., the user is no longer interacting with the phone).

The distraction episodes discussed to this point are considered possible distraction episodes which may require further analysis to determine if they are relevant distraction episodes that should be scored.

In some implementations, a possible distraction episode must typically last at least a certain total amount of time to be considered a relevant distraction episode; a too-brief possible distraction episode is often one not triggered by a user, and may be caused, for example, by a phone screen being on and the vehicle driving over a pothole or speed bump causing the phone movement algorithm to trigger a potential event or episode. Therefore determining phone movement is useful for this purpose and others.

To determine phone movement, the technology monitors either or both of acceleration 104 and angular velocity 106 from the phone sensor data and uses either or both of the following techniques to determine phone movement:

1. If accelerometer measurements are available, the method can measure the change of gravity 110 in the phone's frame of reference. To do this, the method maintains a sliding window of width w around time t, including samples from t - a to t + b, where a + b = w. The method computes two vectors, representing the estimated direction of gravity, from each of the subwindows [t-a, t] and [t, t+b], by summarizing acceleration values within each window. Two typical ways of summarizing acceleration values are (i) computing a mean vector and (ii) computing a (component-wise) median vector. Given two "gravity" vectors, one from the subwindow [t-a, t], g_a, and the other from the subwindow [t, t+b], g_b, the method computes an angle between the two vectors as arccos(g_a dot g_b / |g_a||g_b|). If the angle exceeds a certain threshold (between say 10 and 30 degrees, but other values could work), the phone is considered to have changed its orientation with respect to the direction of gravity. This concept was described in general terms in US patent 9,228,836.
2. If angular velocity measurements from gyroscopes are available, the magnitude of the phone's instantaneous rate of rotation 112 can be computed. In some examples, the magnitude of angular rotation rate is computed as M = sqrt(w_x^2 + w_y^2 + w_z^2). M

Petitioner Ex 1002, p. 25
Zendrive v. CMT, IPR2023-01440

is then generally smoothed (e.g., by convolving with a Hanning window or applying a low-pass filter). If the smoothed value of M exceeds a certain threshold (which may be set from experience or by learning it using a machine-learning classifier based on feedback from users about true versus not true distraction episodes), the phone is considered to be "rotating significantly". In general, this threshold may depend on the make and model of the phone as well as being user-specific. This concept also was described in general terms in US patent 9,228,836.

Distraction context

As noted earlier and detailed below, the scoring of a relevant distraction episode will take into account information about the distraction context. Although we have described rotation of the phone as one factor from which active phone use by the driver can be inferred, other factors may also be relevant to detecting active phone use including one or a combination of two or more of the following (derived from sensors on or the operating system of) the phone: a call state that represents whether the user is currently on a call (which can indicate active phone use); whether call audio is being routed to the handset speaker, the internal speakerphone, or another external speaker (which can indicate whether the active phone use suggests perceptual distraction); proximity of the user's hand to the phone based on data from a proximity sensor (such as may be present on Android phones); the identity of the foreground app (if any) currently running on the phone (although this may be more intrusive on a user's privacy than other factors); whether the phone is moving in a way that is consistent with the user tapping on the screen (e.g., typing or interacting with an application); whether the phone is moving in a way to suggest motion of the vehicle indicative of the driver possibly being distracted, e.g., drifting behavior (as evidenced from the gyroscope signal), or driving substantially below the typical speed for a road, among others.

We describe here two key examples of distraction context: (i) reliably detecting whether a user is interactively tapping on his phone screen, and (ii) combining the phone's orientation and operational states to characterize distraction.

Example distraction context: Phone screen tapping and a tapping detector

Typing to send text messages and typing in social media apps are common forms of phone distraction during driving. It is useful to detect this typing behavior both to provide users with

more targeted feedback about their phone distraction and to assess the degree of risk (e.g., typing may be more risky than, say, briefly swiping in a navigation app to zoom into a map). Here we describe a system for detecting typing behavior using a phone's sensors, without monitoring which app is running in the foreground (information that may either be unavailable or violate the user's privacy expectations).

Typing on a mobile device typically involves tapping on a display screen of the device with the taps occurring in a pattern. Tapping can be recognized by the following process.

When a phone user holds a phone and taps the screen, the phone undergoes a small yet noticeable rotation around its x-y plane, but not much rotation around its z-axis (figure 9, taken from an Android developer guide, illustrates an example arrangement of the three axes 170 relative to the phone.)

The rate of rotation in the x-y plane, induced by a single tap on the screen, is small (e.g., 0.2 - 0.7 radians/s) and lasts only for a short period of time, typically under a few hundred milliseconds. The phone gyroscope captures the rotation as a curve, at a high sampling rate of, for example 100 Hz, or as a single peak at a lower frequency of, for example, 15 Hz. The rotation is also usually followed by a reverting rotation in the reverse direction.

As shown in figure 10, if the screen of the phone is partitioned into four quadrants, the quadrant on which the user taps determines the sign of the rotation signal along the x and y axes.

For example, if the user taps on the lower right quadrant of the screen, the phone briefly rotates along the x-axis by a positive amount and along the y-axis also by a positive amount, assuming a right-handed coordinate system. An example of the gyroscope signal captured by the phone when the user taps on the lower right quadrant several times is shown in figure 11.

As shown, when the user taps on the screen, a pair of synchronized peaks, one for the x-axis (solid line) and the other for y-axis (dash-dot line) appears, which is immediately followed by another peak in the reverse direction.

Another example of tapping is shown in figure 12, where the user taps on the lower left quadrant. In this case, the signs of the x-axis and y-axis peaks are opposite.

Also, when the user taps on the phone in typical phone usage, such as texting or typing in a social networking page, there is a range of plausible tapping frequencies from 5 taps a second to a few seconds per tap.

In some implementations, the tapping detector works as follows given a tri-axial angular velocity measurement stream from a gyroscope in a phone:

1. Detect each tapping event by a technique that may include either or both of the following possibilities:

a. In the input angular velocity data stream, detect occurrences of a pair of peaks, one for the x-axis and another for the y-axis, with peak magnitudes of the rates of angular velocity within a range of magnitude thresholds (e.g., 0.2 - 0.7 radians/s). Then check if each detected pair of peaks is followed by another pair of peaks immediately after, e.g., within a few tens or hundreds of milliseconds, again within a range of thresholds.

i. In a "soft" thresholding version of the algorithm (instead of hard thresholding on a fixed predefined threshold), evaluate how much the peak magnitudes for a pair of pair-of-peaks deviate from a typical peak range for tapping.

ii. Optionally apply an additional constraint for the z-axis (the axis perpendicular to the screen), i.e., determine whether an angular velocity for the z-axis is below a certain threshold.

b. Independently and in advance, curate a collection of actual (known) tapping events (e.g., the occurrence of a single tap) from test users and/or actual users. Given an input temporal signal representing a possible tapping event, a sliding window is applied to the signal and matched to comparable time segments of a collection of known tapping events using, for example, dynamic time warping. If there is a match with any of the known tapping events, the portion of the signal within the window is considered a tapping event. A match is defined as having a low dynamic time warping distance between the input signal and one or more of the signals in the collection; other definitions are also possible.

c. In some implementations, the detector augments its detection of a tapping event using the phone operational state. For instance, the detector may not determine the existence of a tapping event unless the screen is in an active state (e.g., "on" or "unlocked" or both).

2. Given a sequence of tapping events detected from step 1, the detector computes a tapping score, which denotes a likelihood that the sequence of tapping events represents the occurrence of a tapping episode.

a. The scoring starts from the zero score, S = 0.

b. For each determined tapping event, the scorer adds the sum of two terms, one from the tapping event itself (E) and the other from the inter-arrival time between the respective starts of two successive tapping events (I): S = S + (E+I).

i. The tapping event score, E, is a positive number that encodes the closeness of the tapping event to a feature of a model tapping event. For example, the absolute deviation of the peak magnitude from the typical peak magnitude (say 0.5 radians/s) can be used, e.g., E = exp(-| M - 0.5 |). Or, if tapping events were detected by matching their similarities to tapping events of a training set, a function of the similarity can be used.

ii. The inter-arrival time score, I, is evaluated in a way to penalize inter-arrival times that are too short or too long, which are not indicative of typical screen tapping. For example, if the inter-arrival time is smaller than 0.1 sec or larger than 5 sec, I = -1, otherwise I = 0.

c. If the score exceeds a threshold, a tapping episode is determined to have occurred.

d. If the score falls under 0, set it to zero. That is, S = max(0, S + (E+I)). This is to bound the effect of accumulated negative evidence on the existence of a tapping episode.

Example distraction context: combining phone orientation and operational states

The orientation of the phone, the direction in which the phone faces, and phone operational states and combinations of them enable the system to infer how the phone was being used when a phone distraction episode occurred.

Some phone operational states inherently specify a context that existed at the time of the phone distraction episode. For example, one phone operational state may be “active phone call”, which indicates that the user was using his phone.

When such phone operational states are insufficient or missing and even when they are available, the phone’s orientation provides additional information about the context of the distraction. A

Petitioner Ex 1002, p. 29
Zendrive v. CMT, IPR2023-01440

method for determining the orientation has been described in US patent 9,228,836, incorporated by reference. The orientation of the phone's screen with respect to the conveyance (such as a car) in particular reveals information about the context of phone usage at the time of a phone distraction.

In some implementations, the directions in which the phone faces and the orientations of the phone display screen and combinations of them during phone distraction episodes can be organized into one or more of the following groups (states) and others as the basis for determining a phone distraction context:

1. Mounted: The screen of the phone faces generally towards the back of the car and the phone is tilted (oriented) generally vertically with respect to gravity, and the device has not experienced a rotation of more than a few degrees for several minutes or longer.

2. Holding with screen toward the driver: If the screen faces generally towards the back of the car, the phone is tilted in a direction in which people normally use the phone, and the phone is not in the Mounted state.

3. Holding at ear: The screen faces generally to a side of the car, and the top end of the screen points generally upwards (opposite of gravity direction). This may suggest that the driver is on a phone call while holding the phone near her ear.

4. Others: Other orientations may suggest that the driver is not actively engaged with the phone, for example, if the display screen is facing down.

All these are inferred from the direction of the accelerometer and optionally gyroscope vectors whose axes are in the phone's frame of reference.

Each phone distraction episode is annotated with the inferred distraction context, which comprises a vector of attributes capturing the above distraction types, along with the duration of the distraction episode and the location or time (or both) where it occurred.

The inferred distraction context can be used for at least three purposes. First, the context can be used as a variable for further analysis of phone distraction episodes, for example, to study what distraction contexts of phone distraction episodes are correlated highly with the probability of a crash or near-miss. Second, the end-user interface (eg., phone app) can present the inferred distraction context along with the phone distraction episode, showing to the user how the user

was distracted when the phone distraction episode occurred. Third, the context provides an input for scoring distraction episodes.

Example distraction context: weather and ambient conditions. As one example, the context can be the weather, including whether it is raining or snowing, the temperature, position of the sun in the sky, etc. Certain weather conditions (e.g., snow) are known to have a much higher accident risk, and as such distraction during such periods may be more risky.

Example distraction context: time. As another example, distraction context can include time-of-day, day-of-week, and seasonal information. Certain times of day have a higher accident risk (late at night, during rush hour), so understanding this information can be important for risk scoring purposes. Additionally, information such as how much time the driver has already driven during this trip and during the previous 12 or 24 hour period can suggest driver fatigue and reduced attentiveness, which may be relevant to the distraction score.

Example distraction context: vehicle dynamics during episode: As a third example of context, it may include how the vehicle was moving during the distraction episode, for example, whether the vehicle was slowing or accelerating, drifting in the lane, or swerving. These behaviors can indicate the degree of distraction as well as driver inattentiveness. Finally, the relative frequency of certain driving behaviors, e.g., harsh braking, can be compared in a given user's distractedversus undistracted periods, to measure the relative risk of distraction episodes.

User presentation and user feedback

In addition to the features described above, the technology also can collect and leverage user feedback 64 (figure 1) associated with a trip or one or more distraction episodes. For example, when a user looks at a trip's trajectory and notices a region or portion of the trip having a phone distraction episode, the user may indicate that the phone was being used by a passenger, either for this portion of the trip or for the whole trip. The marker for that phone distraction episode will then be removed from the trajectory displayed to the user or the entire trip will be marked as a "passenger" trip, and the user will not be associated with (penalized by) that distraction episode.

It is also useful to be able to detect automatically if a user is the driver or passenger on a trip. Historical user-labeled trips can provide a corpus of examples of passenger trips, which can be

used to evaluate and improve the performance of automated driver-versus-passenger classification. Thus, the feedback gathered as described in the previous paragraph may be used in a machine learning classifier to further improve the accuracy of passenger detection.

Additionally, the user feedback can be used to improve the automatic detection of phone distraction episodes by the technology. The parameter values used in the steps of the process of phone distraction episode detection need not be fixed values, but could vary within ranges. For example, if the settings cause over-reporting of phone distraction episodes, this may be detected by an elevated rate of user feedback indicating phone distraction episodes had not occurred, and used to recalibrate the system to more appropriate parameter values.

After detecting a phone distraction episode, the system may present information about the episode and the phone distraction context to the driver to help her to reduce phone distraction episodes. Sharing phone distraction episode information also provides an opportunity to collect feedback from the user, which can be used to validate the system and the phone distraction episodes and phone distraction contexts that it generates.

In some implementations, information about phone distraction episodes are reported that occur during a single trip. The system can display the trajectory of the single trip and annotate the portions of the trajectory during which phone distraction episodes occurred. The user can select an individual event by tapping on it or scrolling through a list of all episodes on that trip. Selecting an episode provides a pop-up with information about that episode, such as the phone distraction context, the time it occurred, duration, and other measured or inferred contextual information.

An example phone distraction episode is shown in figure 6 as a segment 140 on a trajectory 142 and the time 144 of the episode is shown on a pop up that was triggered by the user invoking the segment of the trajectory.

As shown in figure 7, the user then has the option of providing feedback, for example, to indicate that she was not the driver, but rather a passenger, on the trip. The user may also provide feedback that the trip was not taken in a car, but in a bus, train, bike or other mode of transport, or may indicate that certain portions of the labeled trip data appear incorrectly, i.e., that they were not speeding at a particular location.

If the user selects the link 150 called 'Contact Support' (or equivalent, such as 'Provide Feedback', which could be obtained in a variety of ways), then the user is provided with a field 152 for entering (or voicing) feedback, as shown in Figure 8.

This feedback mechanism allows the user to correct or dispute phone distraction episodes and the properties and context of each episode. It also allows the user to indicate that he was the driver (i.e., the phone belonged to the driver, not a passenger), but for one or more of the distraction episodes in question, the distraction was due to a passenger rather than the driver.

In some implementations, the system can aggregate phone distraction episodes and phone distraction contexts across multiple trips to provide a single user-level summary. For example, the system can measure how the frequency or count of phone distraction episodes varies by:

1. Estimated type of the phone distraction episode (phone call, texting, unlocking, for example).

2. Vehicle speed at the time of the phone distraction episode.

3. Type of road (highway vs. local road).

4. Frequency of route.

5. Length of the phone distraction episode.

Analyzing user-level phone distraction episode trends also enables the system to provide user-customized contextual hints for improving safety, for example, driver-specific advice like "reduce phone usage while driving home", or "do not use phone at high speeds".

Collecting user feedback allows users to feel engaged with the system and correct potential errors in information generated by the system. Feedback from users can also be useful for validating the accuracy of the algorithm.

For example, a particular set of distraction parameters generated by the system may produce a corresponding amount of feedback. The system can use the rate of feedback to estimate how frequently the system misclassifies phone distraction episodes.

By testing different parameters with users and measuring the changes in the amount of feedback, the system can estimate the corresponding misclassification performance for respective parameters. The system can then modify the parameters that are generated to reduce a false positive rate or a false negative rate for those parameters.

Petitioner Ex 1002, p. 33
Zendrive v. CMT, IPR2023-01440

To test different parameters, the system can change the parameters for the whole population of users, for subsets of the population, for individual drivers, or for individual trips, or combinations of two or more of those approaches. Given a large population of drivers, this makes it possible to explore the parameter space rapidly.

Instead of or in addition to providing this information to drivers, it is possible to provide it to third parties (e.g., insurance companies).

Scoring distraction episodes

The scoring of phone distraction episodes is done by taking the distraction context into account. For example, distraction score can depend on speed, time-of-day, day-of-week, season, road type, weather conditions, direction of movement, etc. In addition, the type of distraction can be taken into account: phone movement and light phone tapping may be treated differently in scoring. A phone call with handset to the ear can be scored differently from a hands-free operation that may involve some tapping.

Uses

Phone distraction episode times and durations are typically determined after a trip is completed. The processes discussed above are used to measure that a phone distraction episode occurred; the severity of the episode can be a function of the amount of time distracted, the speed, the road type, or the time-of-day. The distraction episode or the measure of distraction or both can then be used in at least the following ways (and others) and combinations of them:

1. Showing the user where he was distracted 52, for example, by showing the user a map overlaid with a trajectory of her trip. Portions of the trajectory can be marked to correspond to phone distraction episodes, that is, segments in which the phone distraction episodes were detected. These portions can be indicated by a different color in the trajectory overlay. This is done in the existing method.

2. Indicating each phone distraction episode using a marker overlaid on a map. Along with the marker, the context of the phone distraction episode can be displayed, such as duration of the event, vehicle speed, road type, activity state of the phone, and the context of the trip (e.g., “on the way home”). This is done in the existing method.

Petitioner Ex 1002, p. 34
Zendrive v. CMT, IPR2023-01440

3. Providing the user with a distraction score 54. The system can track the number of the user's phone distraction episodes over a short window (e.g., 2 weeks). This time period is chosen to be long enough to include some averaging between trips but short enough that a dedicated driver can see measurable improvement over the course of several days. This score is incorporated in an overall score for the driver, and this overall score can be used to encourage competition for safe driving. For example, the overall scores can be sorted and displayed on a leaderboard. This is done in the existing method.

4. Providing a third party (e.g., an insurance company or a fleet manager/operator) with a phone distraction score 56, for example, the same score that the user sees or a score based on a longer window (e.g., 6 months) that is more appropriate for actuarial purposes. This is done in the existing method.

5. Aggregating the geographic positions of phone distraction episodes across multiple drivers 58. This display can be useful to help understand which intersections or road segments may be dangerous in a city. Such a tool is helpful for civic planners. Figure 2 is an example of a geographic distribution of phone distraction episodes in Miami shown by markers 60, with the color (or another visible attribute) of the marker indicating the number of phone distraction episodes at each location.

6. Phone distraction profile. Various contexts of the phone distraction episodes, including the ones described in Item 2, are aggregated and summarized over an extended period of time (e.g., one year, or over the entire duration for which the user has been on the program). The summary can be represented by graphical representations (plots and maps) as well as text summaries. A few possibilities in the profile summary can include (but are not limited to):

a. Vehicle speed distribution while distracted, a histogram (or equivalently a probability density plot) of vehicle speeds when the user was distracted by phone.

b. Phone orientation distribution during phone distraction episodes, a pie chart (or equivalent) showing a relative proportion of phone orientations and usage while the user was distracted, for example, 20% mounted, 35% holding in front, 30% holding at ear, 15% others.

Petitioner Ex 1002, p. 35
Zendrive v. CMT, IPR2023-01440

c. Phone activity state distribution, a pie chart (or equivalent) showing a relative proportion of various phone activities, for example 40% calling, 30% texting, 15% checking navigation software, 15% unknown.

We have described technology in which the processing to determine phone distraction episodes (and thus the display of information about those events to the user or an insurance company) is done after the trip. Deferring at least the display of such information reduces the chances of adding to driver distraction. However, in some implementations it is possible to determine the phone distraction episodes in real time (that is, while the trip is in progress), and to indicate to the user the occurrence of phone distraction episodes on the phone in real time, through a visual notification (such as a pop-up message), a sound, a vibration, or a combination of two or more of those indicators.

Although in some examples described above, one or more of the processes are executed on servers remote from the mobile device or on mobile devices, the processes can be implemented on either the mobile devices, the servers, or combinations of them.

Other implementations are also within the scope of the following claims.

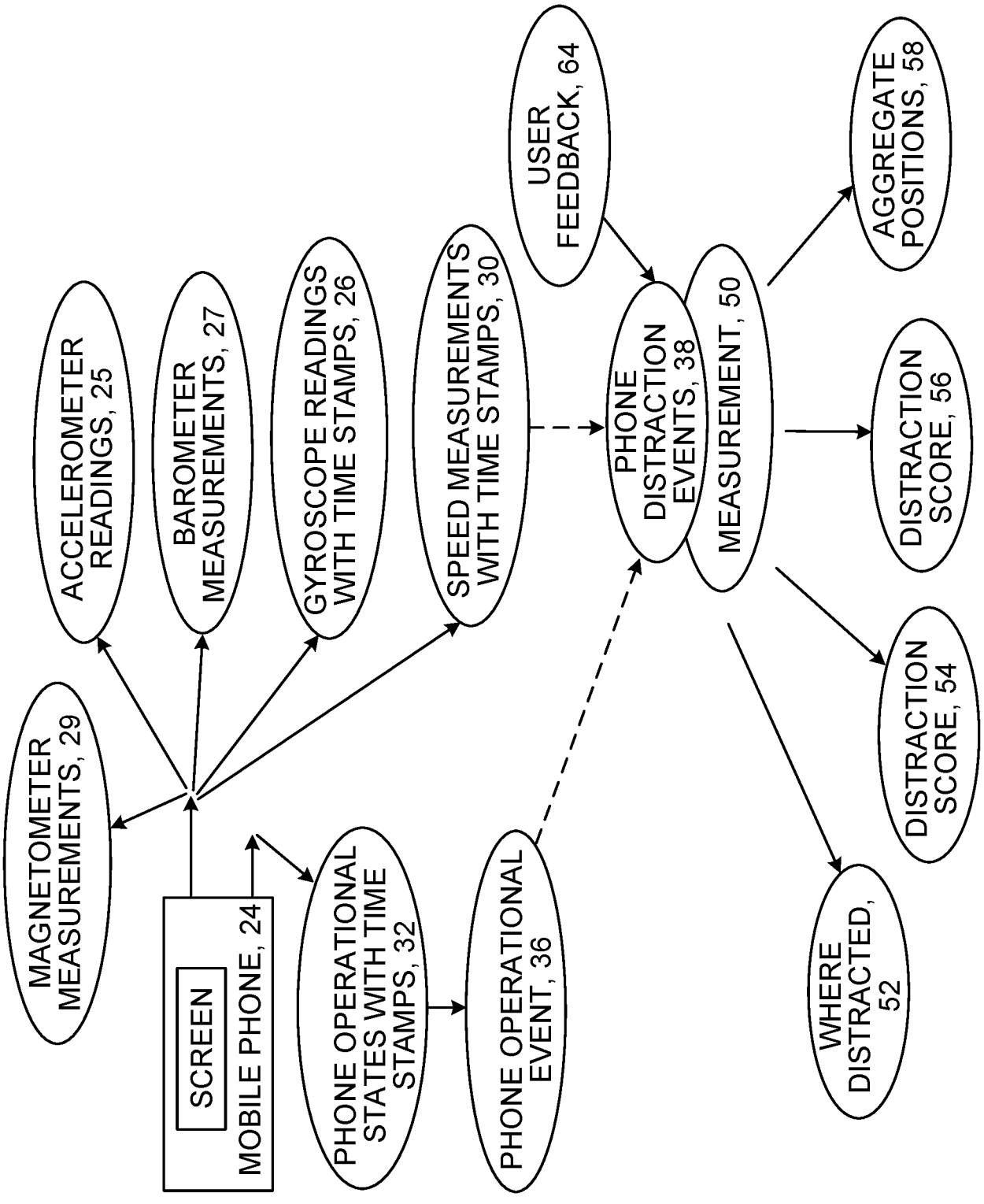
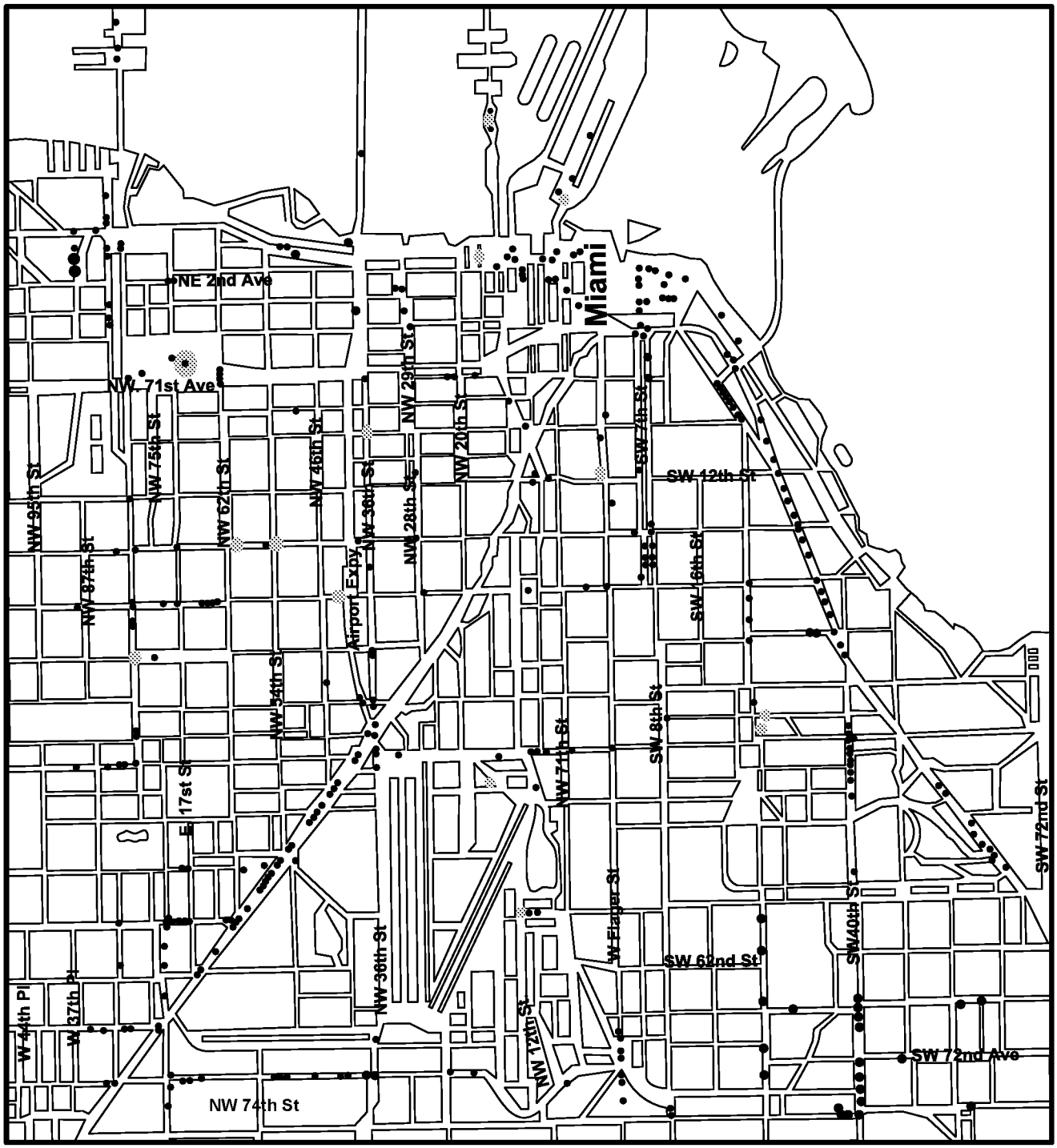

MOBILE PHONE, 24
SCREEN
MAGNETOMETER MEASUREMENTS, 29
ACCELEROMETER READINGS, 25
BAROMETER MEASUREMENTS, 27
GYROSCOPE READINGS WITH TIME STAMPS, 26
SPEED MEASUREMENTS WITH TIME STAMPS, 30
PHONE OPERATIONAL STATES WITH TIME STAMPS, 32
PHONE OPERATIONAL EVENT, 36
USER FEEDBACK, 64
PHONE DISTRACTION EVENTS, 38
MEASUREMENT, 50
AGGREGATE POSITIONS, 58
DISTRACTION SCORE, 56
DISTRACTION SCORE, 54
WHERE DISTRACTED, 52

FIG. 1

FIG. 2


Miami
NE 2nd Ave
NW 71st Ave
NW 95th St
NW 87th St
NW 75th St
NW 62nd St
NW 46th St
NW 36th St
NW 29th St
NW 28th St
NW 20th St
NW 7th St
SW 12th St
SW 6th St
Airport Expy
NW 54th St
E 17st St
NW 74th St
NW 36th St
W 44th Pl
W 37th Pl
NW 12th St
NW 7th St
SW 8th St
W Flagler St
SW 62nd St
SW 40th St
SW 72nd Ave
SW 72nd St

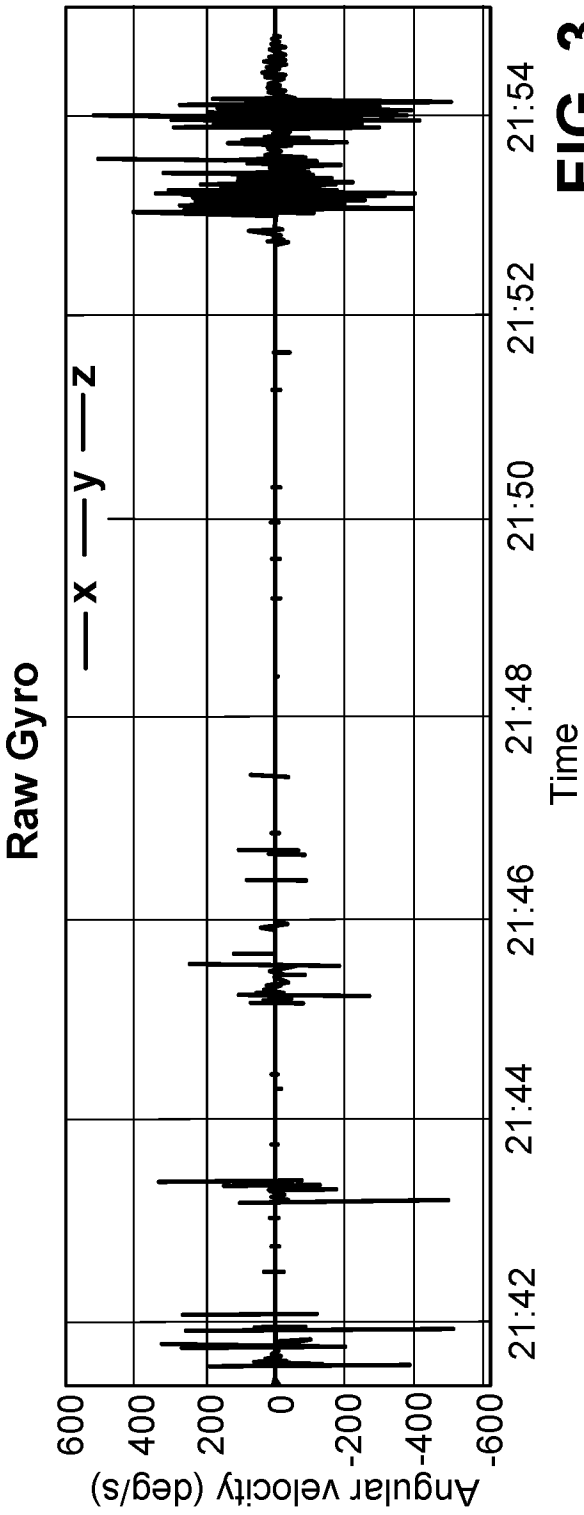

Raw Gyro
x
y
z
600
400
200
0
-200
-400
-600
Angular velocity (deg/s)
21:42
21:44
21:46
21:48
21:50
21:52
21:54
Time

FIG. 3

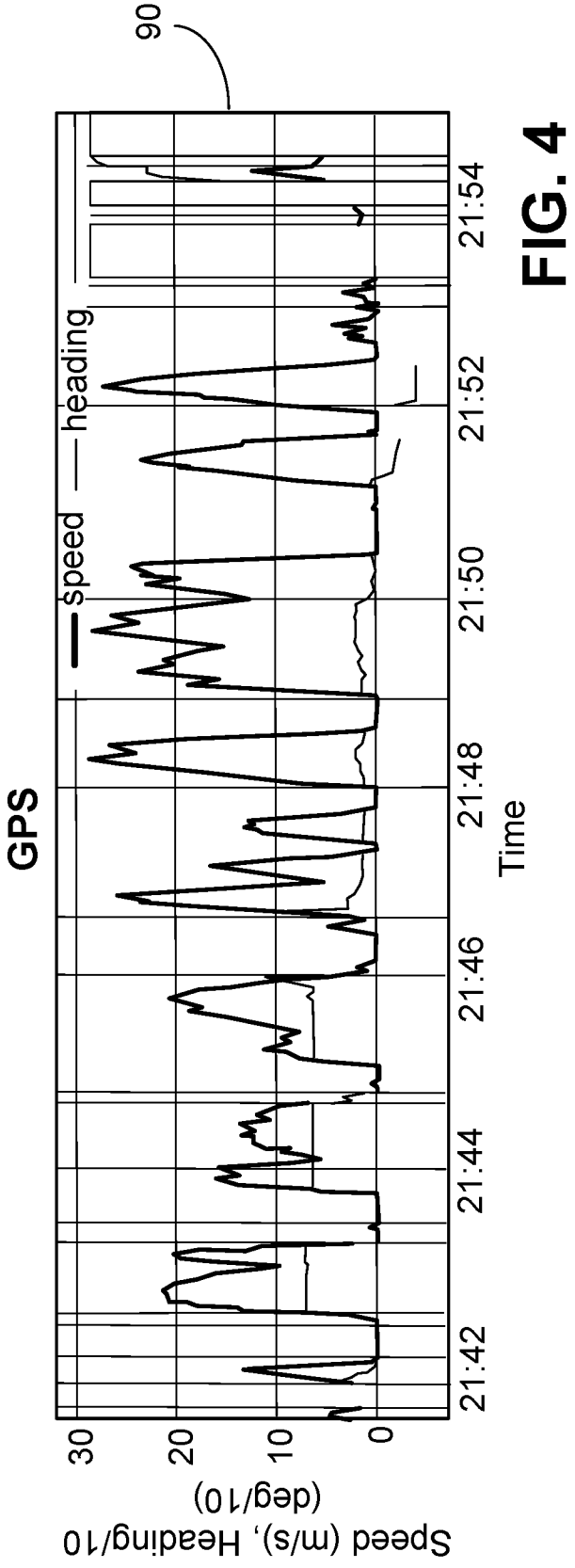

90
GPS
speed
heading
30
20
10
0
Speed (m/s), Heading/10
(deg/10)
21:42
21:44
21:46
21:48
21:50
21:52
21:54
Time

FIG. 4

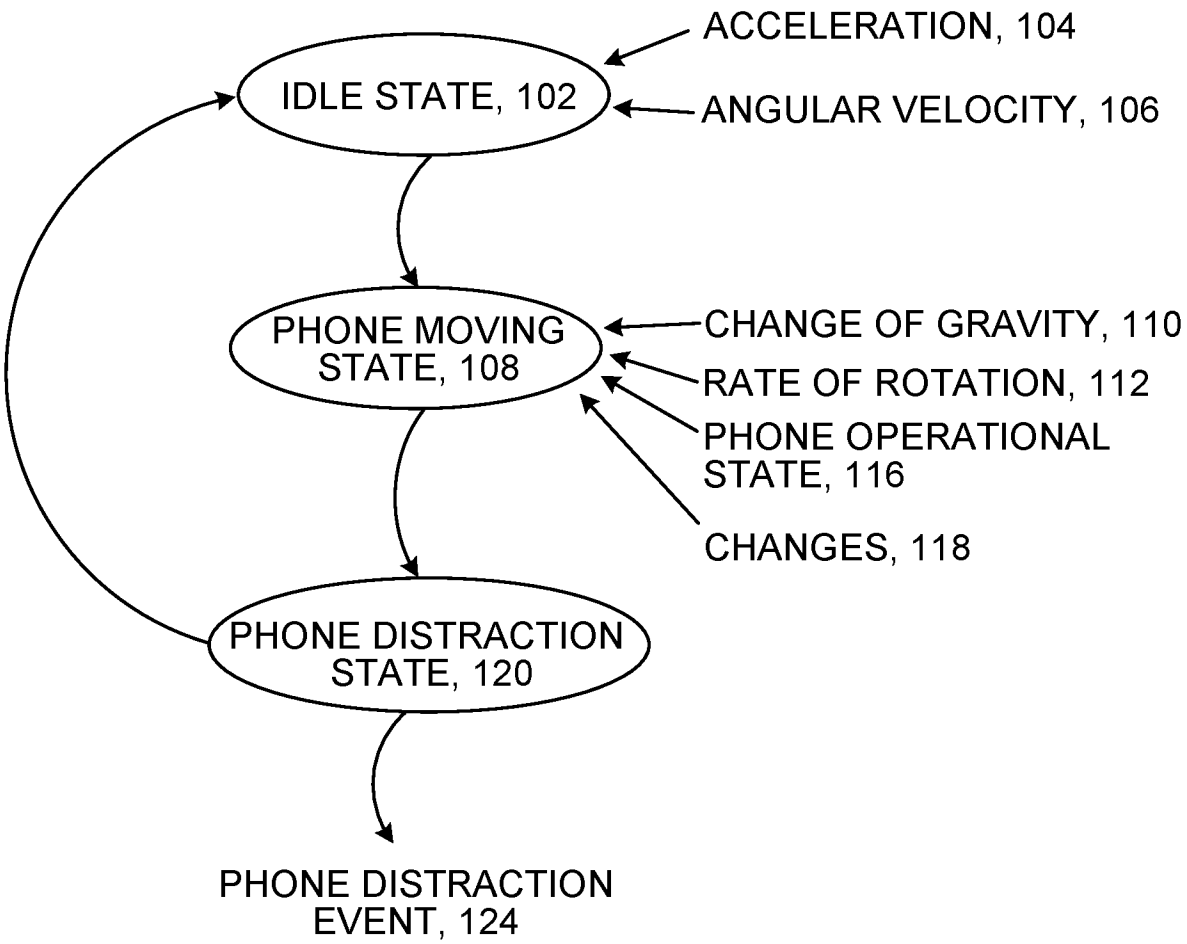

ACCELERATION, 104
IDLE STATE, 102
ANGULAR VELOCITY, 106
PHONE MOVING STATE, 108
CHANGE OF GRAVITY, 110
RATE OF ROTATION, 112
PHONE OPERATIONAL STATE, 116
CHANGES, 118
PHONE DISTRACTION STATE, 120
PHONE DISTRACTION EVENT, 124

FIG. 5

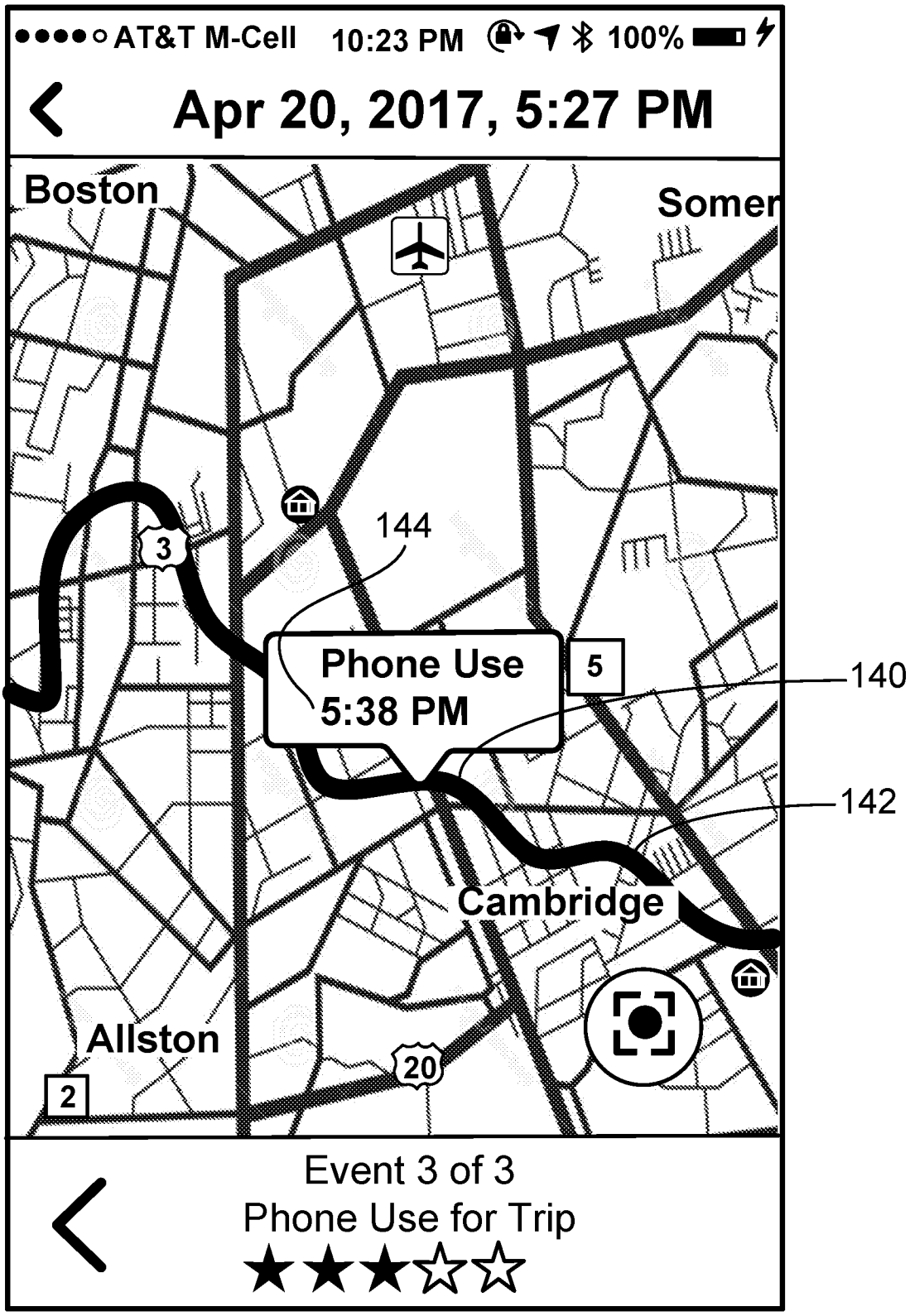

AT&T M-Cell
10:23 PM
100%
Apr 20, 2017, 5:27 PM
Boston
Somer
144
3
Phone Use
5:38 PM
5
140
142
Cambridge
Allston
20
2
Event 3 of 3
Phone Use for Trip

FIG. 6

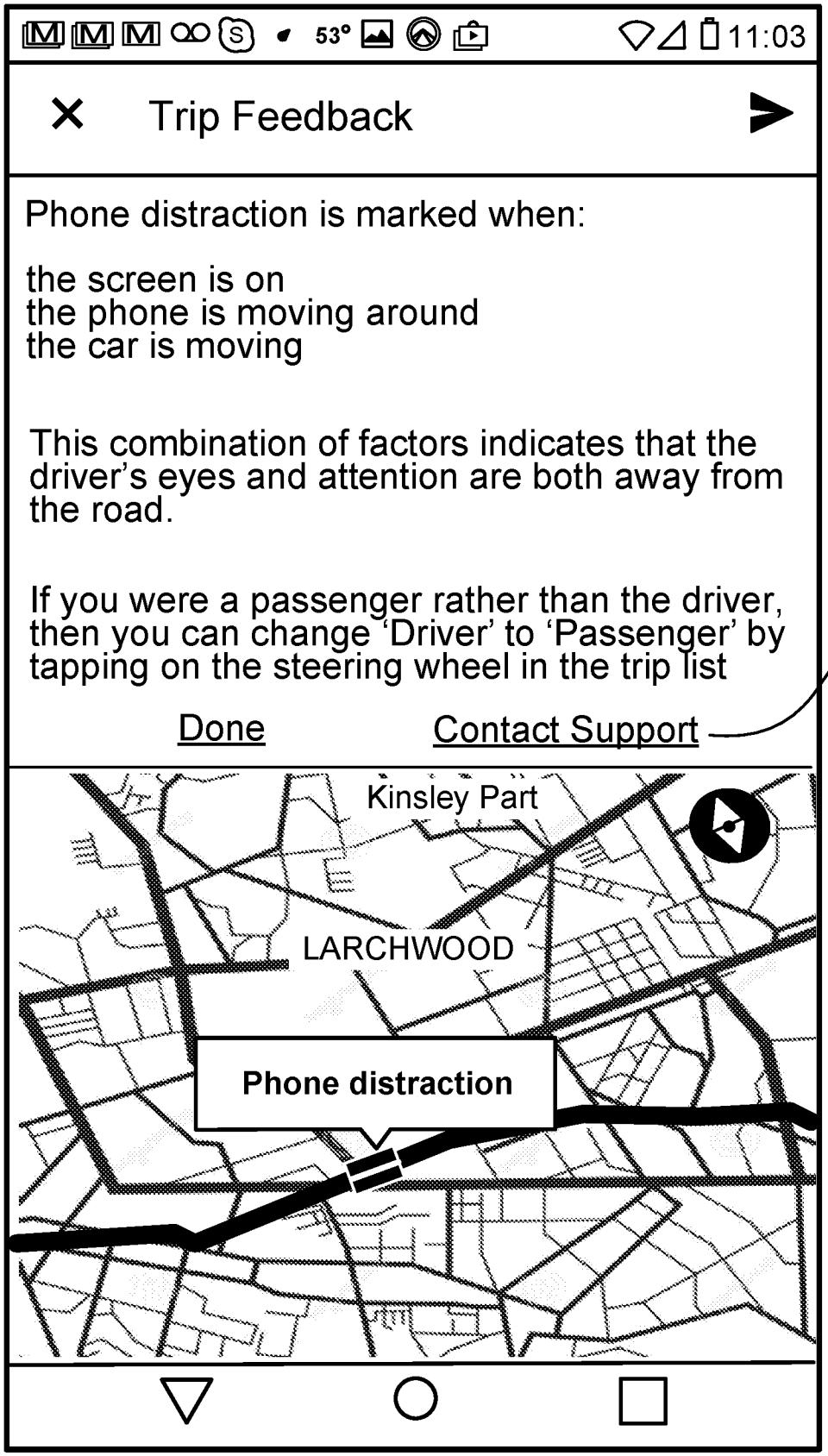

53°
11:03
Trip Feedback
Phone distraction is marked when:
the screen is on
the phone is moving around
the car is moving
This combination of factors indicates that the driver's eyes and attention are both away from the road.
If you were a passenger rather than the driver, then you can change 'Driver' to 'Passenger' by tapping on the steering wheel in the trip list
Done
Contact Support
150
Kinsley Part
LARCHWOOD
Phone distraction

FIG. 7

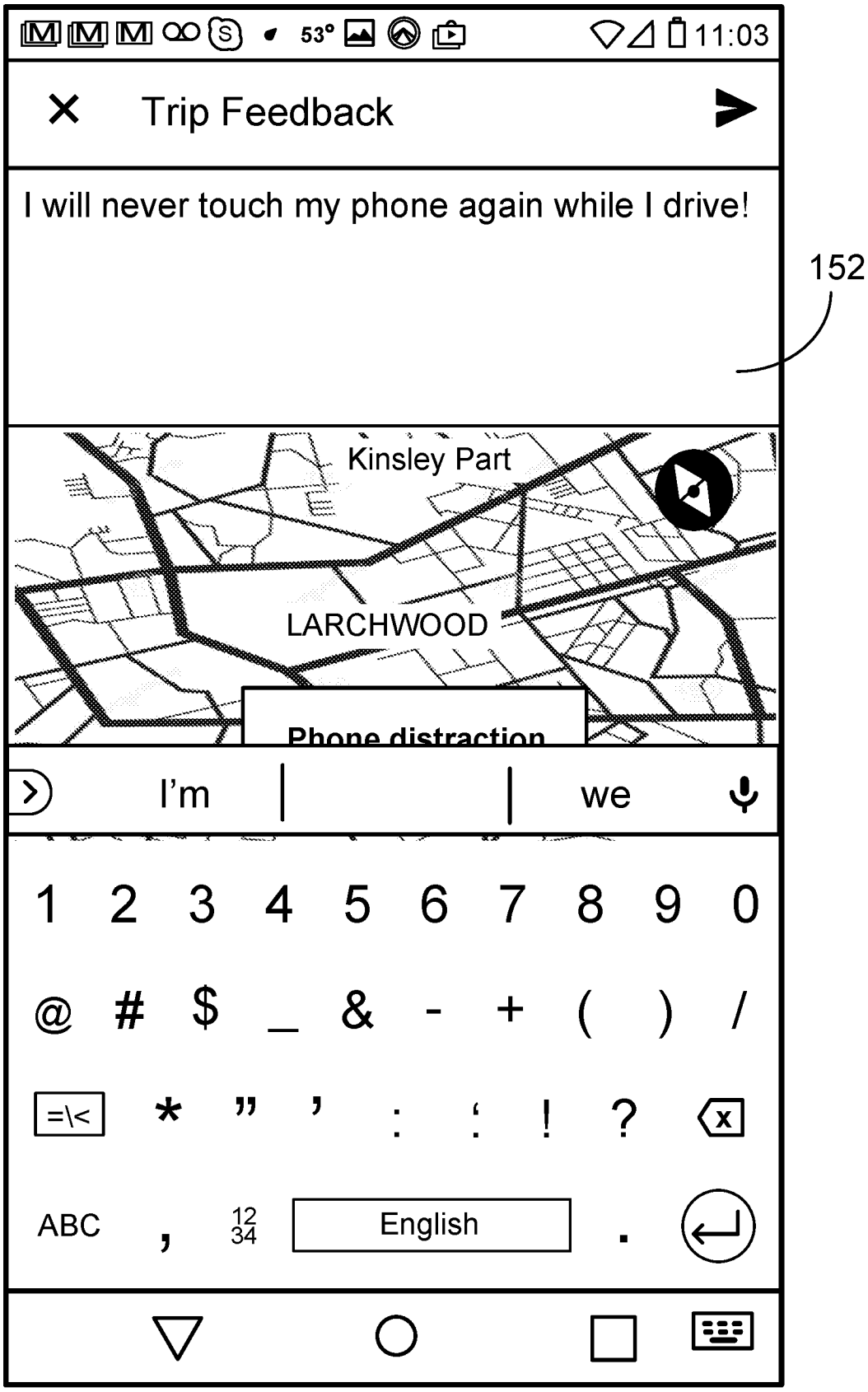

53°
11:03
Trip Feedback
I will never touch my phone again while I drive!
152
Kinsley Part
LARCHWOOD
Phone distraction
I'm
we
1 2 3 4 5 6 7 8 9 0
@ # $ _ & - + ( ) /
=\<
* " ' : ; ! ?
ABC
,
12
34
English
.

FIG. 8

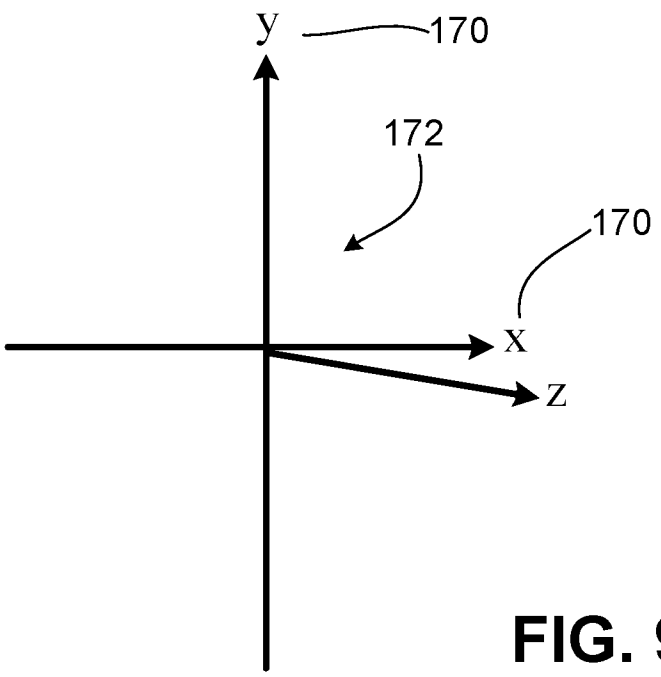


FIG. 9

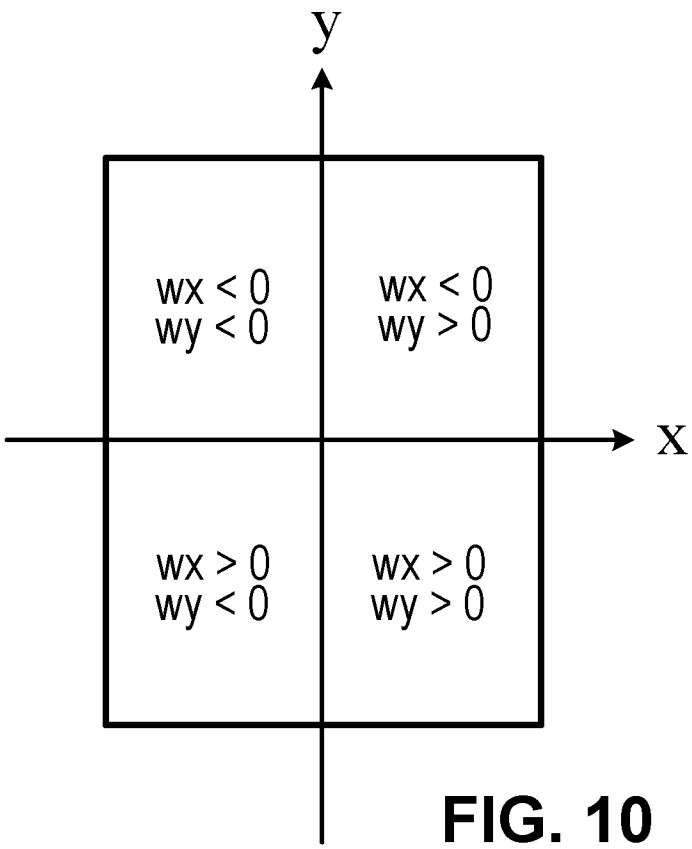


FIG. 10

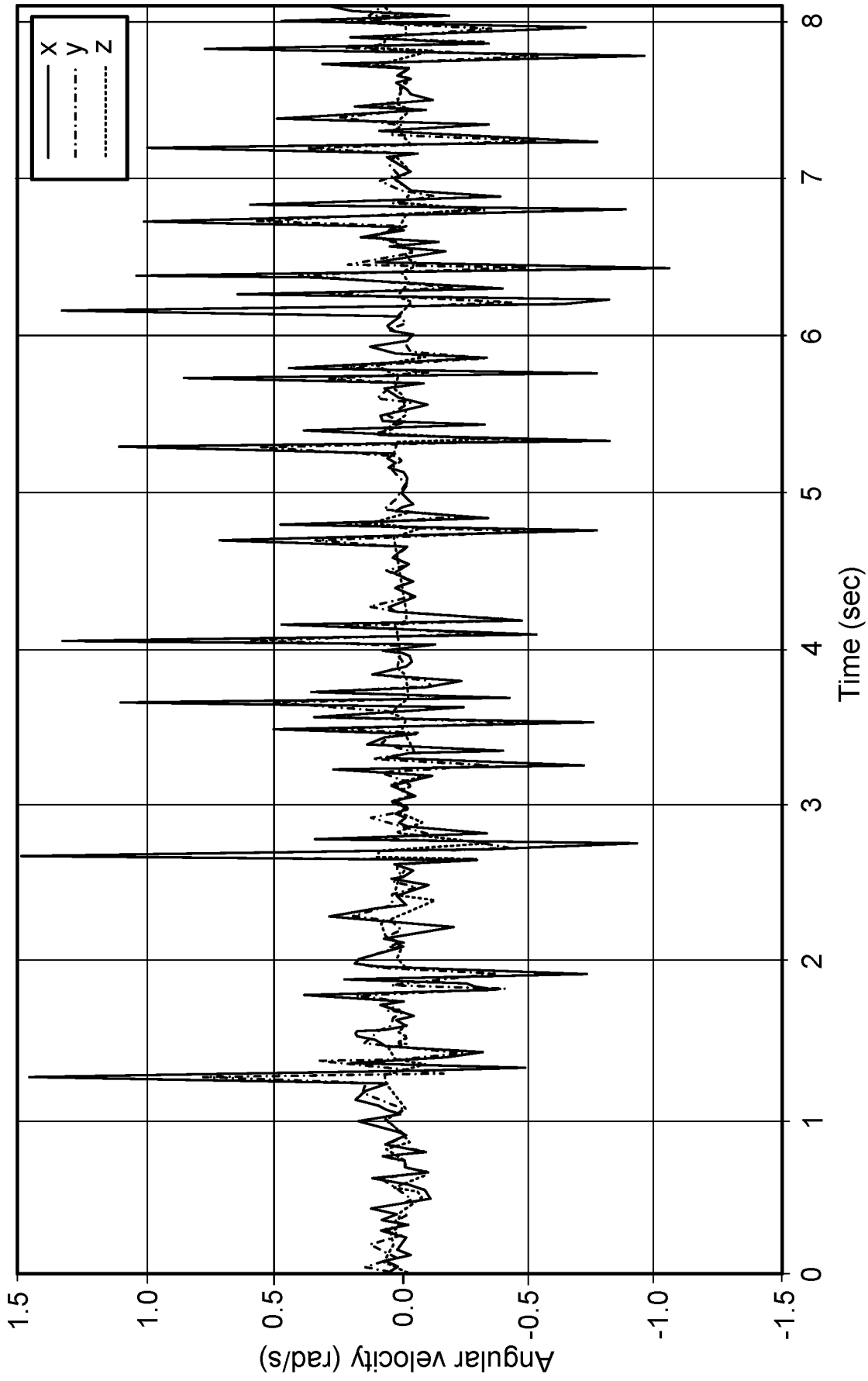

x
y
z
Angular velocity (rad/s)
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
Time (sec)
0
1
2
3
4
5
6
7
8

FIG. 11

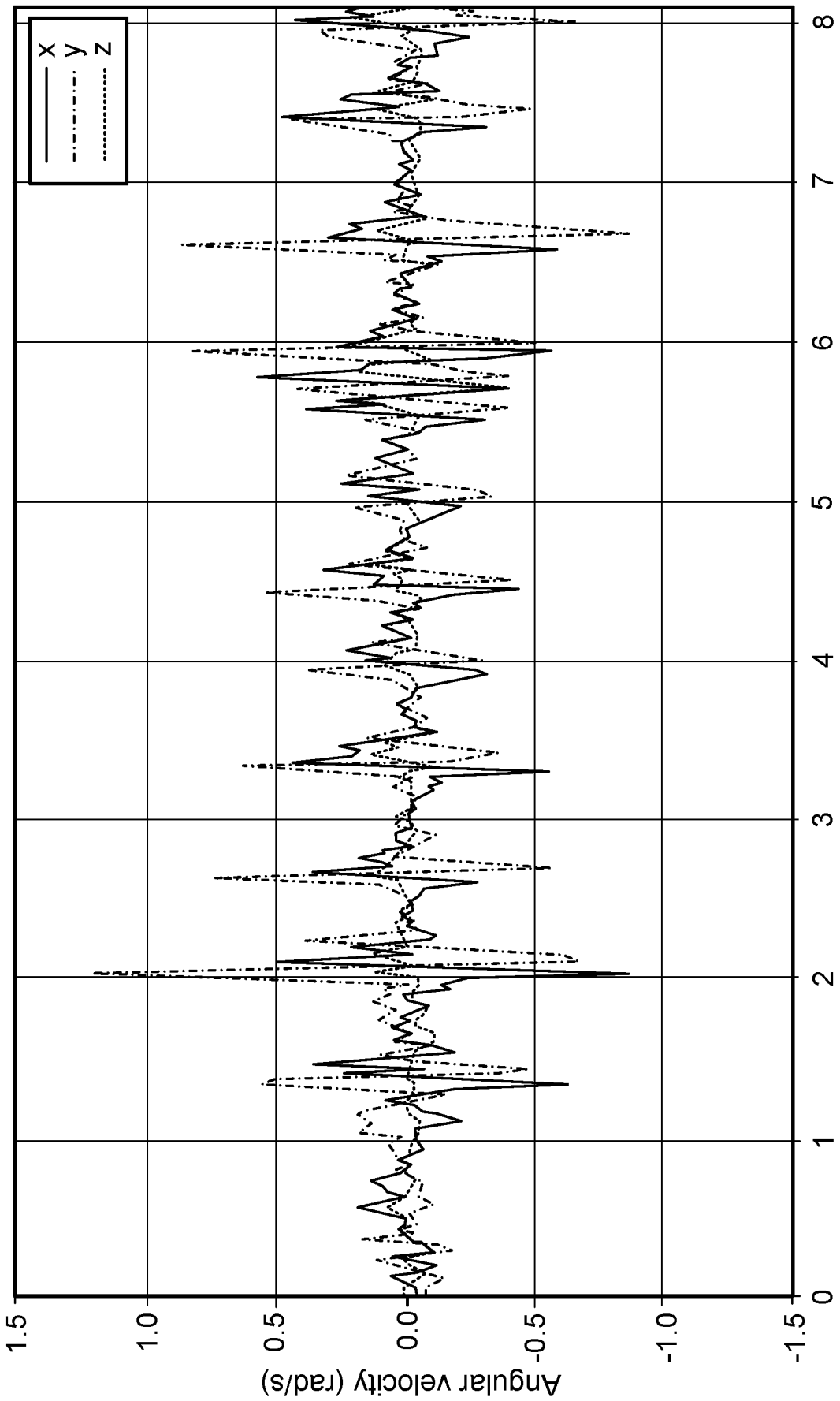

x
y
z
Angular velocity (rad/s)
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
Time (sec)
0
1
2
3
4
5
6
7
8

FIG. 12

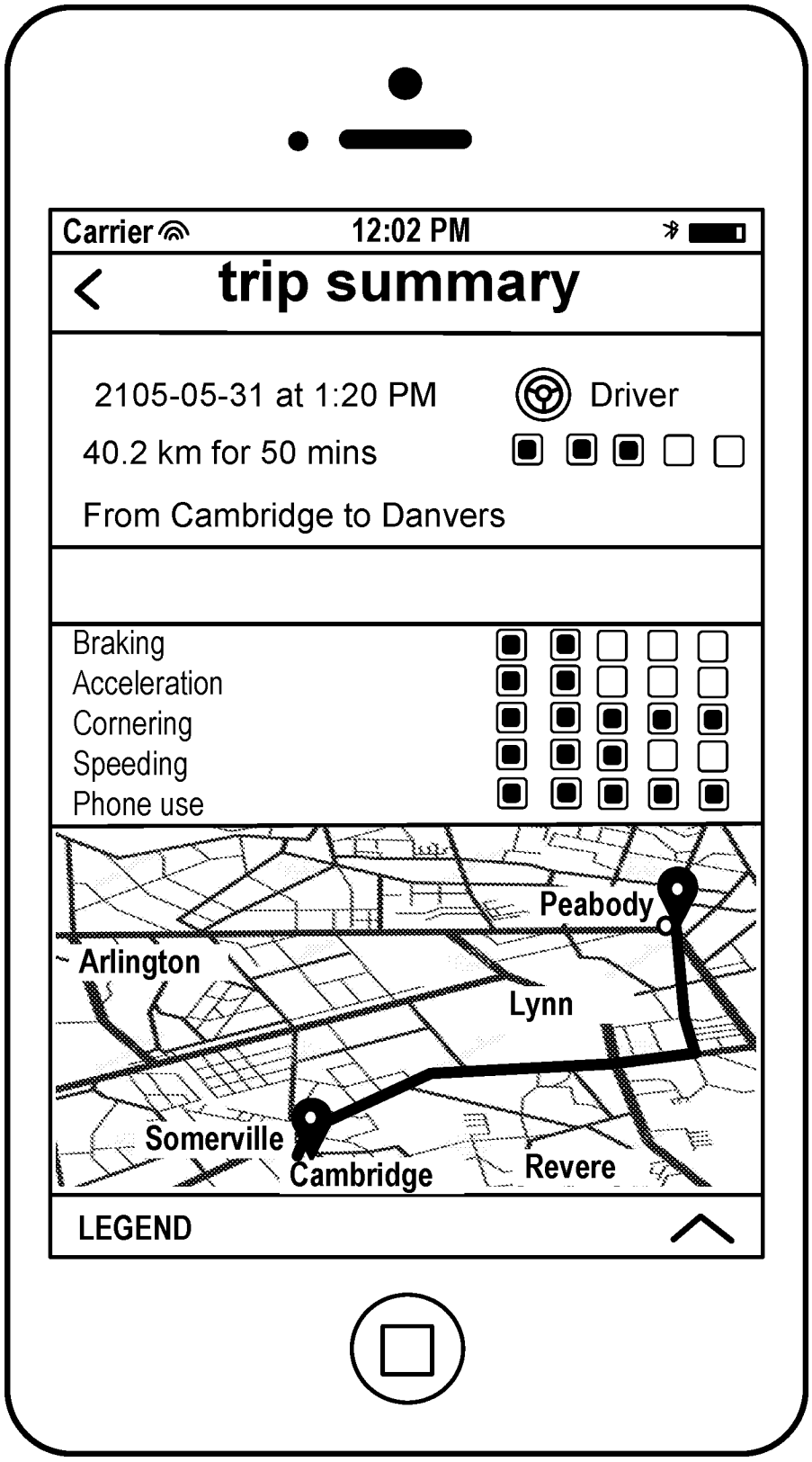

Carrier
12:02 PM
trip summary
2105-05-31 at 1:20 PM
Driver
40.2 km for 50 mins
From Cambridge to Danvers
Braking
Acceleration
Cornering
Speeding
Phone use
Peabody
Arlington
Lynn
Somerville
Cambridge
Revere
LEGEND

FIG. 13

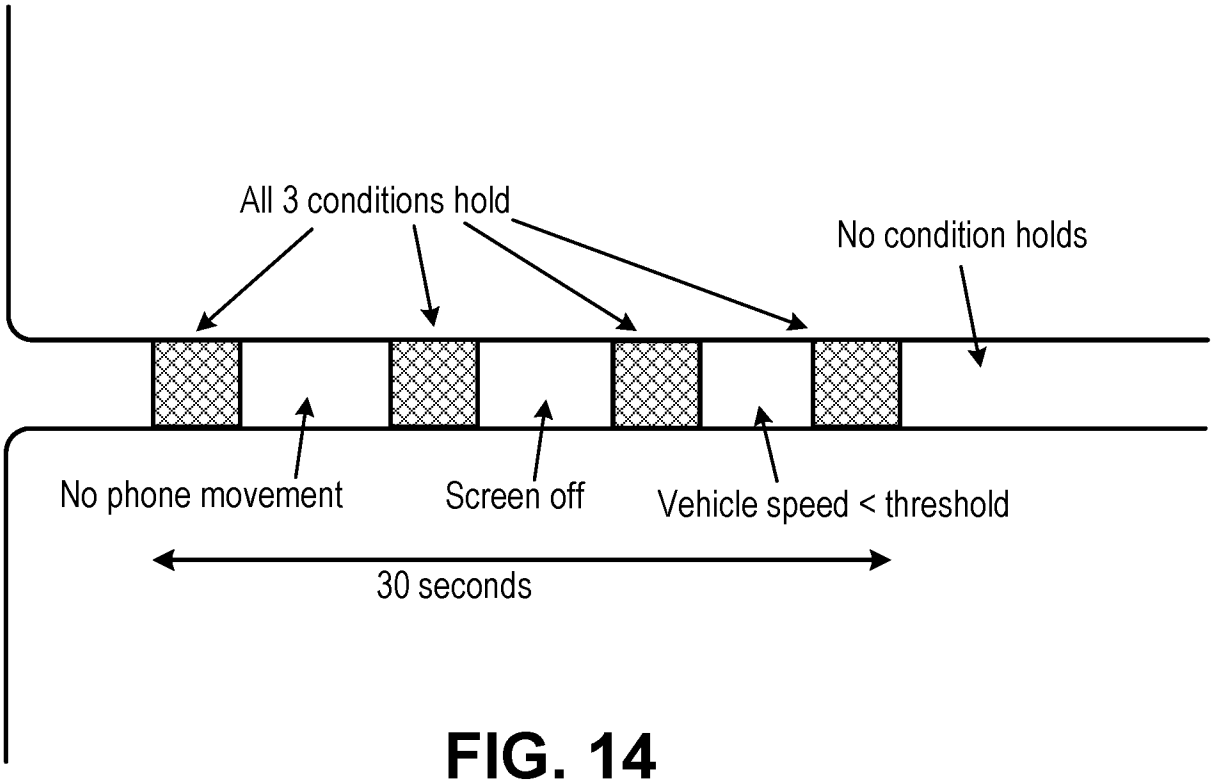

All 3 conditions hold
No condition holds
No phone movement
Screen off
Vehicle speed < threshold
30 seconds

FIG. 14

Attorney Docket No.: 44355-0046001

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	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

As the below named inventor, I hereby declare that:

This declaration is directed to:

[X] 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: Hari Balakrishnan Date (Optional): April 23 2019

Signature: Hari Balakrishnan

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.

Attorney Docket No.: 44355-0046001

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	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

As the below named inventor, I hereby declare that:

This declaration is directed to: [X] 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: William Bradley 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.

Attorney Docket No.: 44355-0046001

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	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

As the below named inventor, I hereby declare that:

This declaration is directed to: [X] 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: Samuel Ross Madden 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.

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	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

As the below named inventor, I hereby declare that:

This declaration is directed to:

[X] 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: Jun-geun Park Date (Optional): Apr. 18, 2019

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.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

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
	Hari		Balakrishnan	

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

City	Belmont	State/Province	MA	Country of Residence	US

Mailing Address of Inventor:

Address 1	9 Preble Gardens Road
Address 2	

City	Belmont	State/Province	MA
Postal Code	02478	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	William		Bradley	

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

City	Arlington	State/Province	MA	Country of Residence	US

Mailing Address of Inventor:

Address 1	19 Lombard Road
Address 2	

City	Arlington	State/Province	MA
Postal Code	02476	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Samuel	Ross	Madden	

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

Petitioner Ex 1002, p. 53
Zendrive v. CMT, IPR2023-01440

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

City	Newton	State/Province	MA	Country of Residence i	US

Mailing Address of Inventor:

Address 1	46 Newbury Street		
Address 2			
City	Newton	State/Province	MA
Postal Code	02459	Country i	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jun-geun		Park	

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

City	Cambridge	State/Province	MA	Country of Residence i	US

Mailing Address of Inventor:

Address 1	1 Whittemore Ave., Unit 307		
Address 2			
City	Cambridge	State/Province	MA
Postal Code	02140	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	26161		
Email Address	apsi@fr.com	Add Email	Remove Email

Application Information:

Title of the Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER		
Attorney Docket Number	44355-0046001	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	12	Suggested Figure for Publication (if any)	

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

Filing By Reference:

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

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

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

Publication Information:

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

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

Representative Information:

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

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	26161		

Domestic Benefit/National Stage Information:

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

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)

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

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

Foreign Priority Information:

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

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.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

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

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

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

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

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

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

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

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. ☒

Organization Name	Cambridge Mobile Telematics Inc.		
Mailing Address Information For Applicant:			
Address 1	101 Main Street, 14th Floor		
Address 2			
City	Cambridge	**State/Province**	MA
Country	US	Postal Code	02142
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 substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

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 or Non-Applicant Assignee is an Organization check here. ☐

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

Mailing Address Information For Assignee including Non-Applicant Assignee:

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

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

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

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

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

Signature	/David L. Feigenbaum/			Date (YYYY-MM-DD)	2019-05-06
First Name	David L.	Last Name	Feigenbaum	Registration Number	30378

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

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. 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	44355-0046001
	Application Number	
Title of Invention	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER	

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 CooperationTreaty.

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.

Petitioner Ex 1002, p. 61
Zendrive v. CMT, IPR2023-01440

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

Application Number	
Filing Date	
First Named Inventor	Hari Balakrishnan
Title	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
Art Unit	
Examiner Name	
Attorney Docket Number	44355-0046001

SIGNATURE of Applicant or Patent Practitioner

Signature	/David L. Feigenbaum/	Date (Optional)	/5/6/19/
Name	David L. Feigenbaum	Registration Number	30,378
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

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

☒ *Total of 1 forms are submitted.

23891998.doc

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on the Transmittal.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter, which may be an application filed after the date of this power of attorney, or identified above:

26161

OR

☐ I hereby appoint Practitioner(s) named in the attached list as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter, which may be an application filed after the date of this power of attorney, or identified above.

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

☐ The address associated with the above-mentioned Customer Number

OR

☒ The address associated with Customer Number: **26161**

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Cambridge Mobile Telematics Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	July 20, 2018
Name	Hari Balakrishnan		
Title	Chief Technology Officer		

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

☒ *Total of 1 forms are submitted.

23788630.doc

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (03-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Hari Balakrishnan	Non provisional Application Number (if known):	
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims.

3. The applicable box is checked below:

I. ☒ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original non provisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original non provisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original non provisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /David L. Feigenbaum/	Date 5/6/19
Name (Print/Typed) David L. Feigenbaum	Practitioner Registration Number 30,378

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.**

☒ *Total of 1 forms are submitted.

23892001.doc

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Filer:	David L Feigenbaum/Cathy O'Brien
Attorney Docket Number:	44355-0046001

Filed as Small Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2000	2000
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	10	50	500
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**3355**

Electronic Acknowledgement Receipt

EFS ID:	35921342
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	David L Feigenbaum/Jennifer MacKenzie
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	44355-0046001
Receipt Date:	06-MAY-2019
Filing Date:	
Time Stamp:	12:26:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$3355
RAM confirmation Number	050619INTEFSW00011569061050
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	Transmittal of New Application	Transmittal.pdf	111310 9a6231fe01b88a07b11dd1d0abd3b98805adeb7f	no	2
Warnings:					
Information:					
2		Application.pdf	199424 ceeef3dfbdc655486e77682d814bb2cc3424c3f5	yes	34

Multipart Description/PDF files in .zip description

Document Description	Start	End
Abstract	34	34
Claims	29	33
Specification	1	28

Warnings:					
Information:					
3	Drawings-only black and white line drawings	Drawings.pdf	3658005 46c3af2665a070e36a3bbb74fb751bd4ac109086	no	12
Warnings:					
Information:					
4	Oath or Declaration filed	Declarations.pdf	2026380 9b1b3b780185754cc604f8c18da441856042e6cc	no	4
Warnings:					
Information:					
5	Application Data Sheet	ADS.pdf	1822622 081f2f2f6e46dc44507a50d985820096cd7ee473	no	9

Warnings:					
Information:					
6	Power of Attorney	POA.pdf	135136 f6975264a442650a165411331a9aeb67483a5691	no	2
Warnings:					
Information:					
7	TrackOne Request	Track1Request.pdf	145173 75ca3781e3d1893de85d5f687091989b68c58de9	no	1
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	40162 cd44a635d94a201295efcacb2c916d18bad37e71	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	8138212		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	Unknown
Application No.	:	16/403,761	Examiner	:	Unknown
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

Copies of United States patent documents will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

US serial number and filing date/ status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449
Appln. No. 16/403,776, filed on 5/6/2019 Pending (Attorney Docket No. 44355-0077001)	Not Assigned	Yes	Yes	Yes

This statement is being filed within three months of the filing date of the application and before the receipt of a first action on the merits. Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: /5/10/19/

/David L. Feigenbaum/
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

61911225.doc

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary)		44355-0046001	16/403,761
		Applicant: Cambridge Mobile Telematics Inc.	
(37 CFR §1.98(b))		Filing Date: May 6, 2019	Group Art Unit

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	8457880	6/4/2013	Malalur et al.			
	2.	9228836	1/5/2016	Girod et al.			
	3.	20150312655	10/29/2015	Balakrishnan et al.			
	4.	20170105098	4/13/2017	Cordova et al.			
	5.	20190116463	4/18/2019	Cordova et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	6.	NAIC "Insurance Company Telematics Rate/Rule Page: Rule UBI-1_NJ," SERFF Filing Access, April 19, 2018, retrieved on May 9, 2019, URL <https://filingaccess.serff.com/sfa/search/filingSummary.xhtml?filingId=131465909>, 1 pages
	7.	USPTO Transaction History and Application as filed in U.S. Appln. No. 16/403,776, retrieved on May 9, 2019, 67pages

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Petitioner Ex 1002, p. 72
Zendrive v. CMT, IPR2023-01440

Electronic Acknowledgement Receipt

EFS ID:	35974359
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	David L Feigenbaum/Nikki Krahler
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	44355-0046001
Receipt Date:	10-MAY-2019
Filing Date:	
Time Stamp:	10:35:33
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	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	74375 bca087ae69746bdb12cf04fb37f7bc8def3dae24	no	2

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Information Disclosure Statement (IDS) Form (SB08)	1449.pdf	127004 af70a39a42ffac1de2ed6a4ca6d544a98ad85564	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	SERFFFilingAccess_NJ-TelematicsRateRulePage.pdf	316488 483e96a6cd50674152c4c50352c2d4d850c17c39	no	4
Warnings:					
Information:					
4	Non Patent Literature	USPTOTRANSHISTORY_16403776_5-9-2019.pdf	2950649 2ccb1d589bb5aa2687cfae68b00e9c7244275c14	no	67
Warnings:					
Information:					
		Total Files Size (in bytes):	3468516		

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	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/403,761	05/06/2019		1285	44355-0046001	30	2

CONFIRMATION NO. 5174

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

FILING RECEIPT

OC000000108223190

Date Mailed: 05/16/2019

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

Hari Balakrishnan, Belmont, MA;
William Bradley, Arlington, MA;
Samuel Ross Madden, Newton, MA;
Jun-geun Park, Cambridge, MA;

Applicant(s)

Cambridge Mobile Telematics Inc., Cambridge, MA;

Power of Attorney: The patent practitioners associated with Customer Number 26161

Domestic Applications for which benefit is claimed - None.
A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Petitioner Ex 1002, p. 75
Zendrive v. CMT, IPR2023-01440

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

If Required, Foreign Filing License Granted: 05/15/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/403,761**

Projected Publication Date: 11/12/2020

Non-Publication Request: No

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

DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

Preliminary Class

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

Petitioner Ex 1002, p. 76
Zendrive v. CMT, IPR2023-01440

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

Petitioner Ex 1002, p. 77
Zendrive v. CMT, IPR2023-01440

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

Petitioner Ex 1002, p. 78
Zendrive v. CMT, IPR2023-01440

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/403,761

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	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10	x 50 =	500	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1285		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	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
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 NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 05/31/2019
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
ART UNIT	PAPER NUMBER

NOTIFICATION DATE	DELIVERY MODE
05/31/2019	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 16/403,761	**Applicant(s)** Balakrishnan et al.	
	Examiner CHERYL P GIBSON BAYLOR	**Art Unit** OPET	**AIA (FITF) Status** Yes

1. THE REQUEST FILED 06 May 2019 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET	

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.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 07/17/2019
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
07/17/2019	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Office Action Summary	Application No. 16/403,761	Applicant(s) Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	AIA (FITF) Status Yes

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

Period for Reply

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

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

Status

1)☑ Responsive to communication(s) filed on 05/20/2019.

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

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

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

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

Disposition of Claims*

5) ☑ Claim(s) 1-30 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) 1-30 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 05/06/2019 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

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

4) ☐ Other: _____.

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. Claims 1-20 are presented for examination on the merits.

Claim Objection

2. Claim 27 recites the term "... the vicinity of any year of an occupant ...." It seems a minor typo to mean "the vicinity of any ear of an occupant." Appropriate correction required.

Double Patenting

3. The non statutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A non statutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi,* 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum,* 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a no statutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1-30** are provisionally rejected on the ground of no statutory obviousness-type double patenting as being unpatentable over **claims 1-20** of US Patent application No. 16/403776. Although the conflicting claims are not identical, they are not patentably distinct from each other because 1) receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, determining a possible distraction episode based on the received signals, 2) presenting information about the possible distraction episode to a user, 3) receiving information from a user who was a participant on the trip indicative of a circumstance of the trip, the information being received in response to the presenting of the information about possible distraction episode, 4) the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip 5) automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, and 6) determining that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed

in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

In view of the above, it is noted that the instant application is broader in every aspect than the US patent document and is therefore an obvious variant thereof, thus, allowing this would result in an unjustified or improper timewise extension of the "right to exclude" granted by a patent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. 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.

6. 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.

7. Claims **1-30** are rejected under 35 U.S.C. 103 as being unpatentable over **Neitzel (US 2016/0006860)** in view of **Cordova (US 2017/0105098)**.

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors read on ¶ 0008, (The mobile wireless device comprises a plurality of sensors for sensing: motion, thermal images in a field of view of a lens, and a side of a vehicle cabin);

b. at least an accelerometer and a gyroscope, using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device read on ¶ 0026, (the gyroscope 108 and accelerometer 106 provide complimentary motion data streams that aid determining a current physical status (e.g., motion speed, orientation) of the mobile wireless device 100);

c. based on the identified physical states, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver read on ¶ 0044 & ¶ 0047, (the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. The probabilistic state-based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/-a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing

towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used);

d. determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode read on Fig. 3, ¶ 0092 – ¶ 0095, (during step 375, after determining the device 100 is in the possession of the driver, the state-based logic 102 implements, by way of example, the following: 1. Disabling application/device functions and/or interfaces based upon operator or government mandated options specified in the limitations definition 104; 2. Maintaining a running log of GPS-based device position changes (for determining an average speed) of the device 100 for a time interval having the time duration tc; and 3. If the average speed is greater than one (1) km/hr over the duration tc of the time interval (indicating that the vehicle is still moving), then maintaining disablement of functions and/or interfaces based upon operator or government mandated options; and returning control of the state-based logic 102 to the "start" of the exemplary set of operations and decisions summarized in FIG. 3 if the average speed over the interval is less than or equal to one (1) km/hr (i.e., the vehicle has effectively "stopped")). Neitzel does not explicitly disclose generating discrete events separated in time.

However, Cordova in track driving behaviors teaches:

e. generating discrete events separated in time read on ¶ 0052, (based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components

and/or performed by different steps/components, processing block 350 has a dotted line to further emphasize the optional nature of this stage).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to detect and assesse distracted drivers and provide the framework for measuring inattentiveness, and accurately predict actual device usage while driving to analyze collected driving data and assign scores based on different criteria.

As to claim 2, Neitzel further discloses:

a. in which the physical state comprises an operational state of the mobile device read on ¶ 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 3, Neitzel further discloses:

a. which the operational state comprises a state of locking of the mobile device read on ¶ 0102, (Screen lock--preventing viewing information/graphics on the display screen).

As to claim 4, Neitzel further discloses:

a. which the operational state comprises a state of a phone call read on ¶ 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications).

As to claim 5, Neitzel further discloses:

a. which the operational state comprises a power condition read on ¶ 0038, (having described the general functionality of the state-based logic 102, attention is now directed to the particular exemplary steps, summarized in FIG. 3, carried out by a particular exemplary embodiment of the state-based logic 102. After power-on of the mobile wireless device 100).

As to claim 6, Neitzel further discloses:

a. which the operational state comprises an aspect of a foreground app running on the mobile device read on ¶ 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 7, Neitzel further discloses:

a. which at least one of the discrete events comprises a possible discrete distraction event during the trip read on ¶ 0020, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 8, Neitzel further discloses:

a. which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values

are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode read on ¶ 0040, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 9, Neitzel further discloses:

a. which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction read on ¶ 0040 & ¶ 0044, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs. If at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315).

As to claim 10, Neitzel further discloses:

a. which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction read on ¶ 0040, (if the analyzed signal characteristics indicate that the device is not within a moving motor vehicle, then control passes to step 310. During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 11, Neitzel further discloses:

a. which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length read on ¶ 0042 – ¶ 0043, (Such GPS signal acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example, a time-ordered sequence of GPS measurements, over a specified time duration (ty), are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty. Moreover, during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device

100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 12, the claim is corresponding to claim 1. Therefore, the claim is rejected for the same rationales set forth for claim 1.

As to claim 13, the claim is corresponding to claim 4. Therefore, the claim is rejected for the same rationales set forth for claim 4.

As to claim 14, Neitzel further discloses:

a. based on the received signals, determining a proximity of a user's hand to the mobile device read on ¶ 0021, (The mobile wireless device, without any aid by a user, determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features)).

As to claim 15, Neitzel further discloses:

a. based on the received signals, determining whether a display screen of the mobile device is being tapped read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 16, the claim is corresponding to claim 6. Therefore, the claim is rejected for the same rationales set forth for claim 6.

As to claim 17, Neitzel further discloses:

a. based on the received signals, determining a behavior of a conveyance being used for the trip read on ¶ 0036, (the exemplary state-based logic summarized in FIG. 3 operates on multiple, conditionally activated/gated, data streams (recorded over a specified time window) from the embedded sensors (e.g., accelerometer, gyroscope, magnetometer, etc.), signal receivers (e.g., GPS signal receiver), and imaging/camera inputs (e.g., infrared fisheye camera/lens). The state-based logic, based upon specified configuration parameters and the conditionally applied data streams, makes a probabilistic determination whether the mobile wireless device 100 is operating in a particular one of multiple potential physical operating environments).

As to claim 18, Neitzel further discloses:

a. which determining the context of a possible distraction episode comprises: detecting a rotation of a display screen of the mobile device read on ¶ 0025 & ¶ 0028, (a gyroscope 108 measures a rate of rotation around a particular axis at an angular rate, and helps maintain orientation. The gyroscope 108, in the exemplary implementation, determines the X, Y, and Z orientations for a device. The mobile wireless device 100 includes, among other things, known data processing functionality that combines accelerometer, gyroscope, and magnetometer data to render a currently sensed orientation of the mobile wireless device 100. Each of these three sensors makes a unique contribution to the overall orientation sensing capabilities of the mobile wireless device 100).

As to claim 19, Neitzel further discloses:

a. detecting a tap on the display screen based on a parameter of the rotation read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period

that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 20, Neitzel further discloses:

a. based on the received signals, determining a frequency of taps on a display screen of the mobile device read on ¶ 0044, (if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335).

As to claim 21, Neitzel further discloses:

a. based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 22, Neitzel further discloses:

a. determining an occurrence of a tapping event based on a tapping based on taps in the sequence and periods of time between successive taps read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

Cordova further teaches:

b. score based on tapping read on ¶ 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current behavior rating, and/or other similar features).

As to claim 23, Neitzel further discloses:

a. based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode read on ¶ 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 24, Neitzel further discloses:

a. based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode read on ¶ 0043, (such usage pattern

may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 25, Neitzel further discloses:

a. the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and the context of the possible distraction episode comprises the mobile device being in the conveyance read on ¶ 0043 & ¶ 0079, (which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera, which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on ¶ 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 26, Neitzel further discloses:

a. which the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and the context of the possible distraction read on ¶ 0069 – ¶ 0074, (if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. If at step 355, the probabilistic state-based logic 102 determines, through thermal image signature matching, that the user of the device 100 is not a front seat occupant, then control passes to step 360 wherein the state-based logic 102 executes in accordance with a "passenger in possession" operating mode. During step 360, while in the possession of a passenger, the state-based logic 102 exhibits the following exemplary behaviors: 1. Allow normal operation for voice, data, and text for a specified "hysteresis" time duration (tb); 2. Maintain a running log of thermal sensor data for a specified time duration (td); 3. Maintain a running log of speed for a specified time duration (tc); and 4. Maintain a running log of device positional data for a

specified time duration (tz)). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on ¶ 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 27, Neitzel further discloses:

a. the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and the context of the possible distraction episode comprises the mobile device being held in the vicinity of any [y]ear of an occupant of the conveyance read on ¶ 0020, ¶ 0045 & ¶ 0050, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver). At step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. This distinction is generally a result of the diffusion of heat on a windshield--as opposed to the back of a front seat where various combinations of obstructions

(e.g. head rests) within the captured field of view of the lens 112 result in greater variances in the upper portion of the lens 112 field of view (when the device 100 is properly oriented during image capture)).

As to claim 28, Neitzel further discloses:

a. the display screen of the mobile device faces generally downwardly, and the context of the possible distraction episode comprises the mobile device not being used read on ¶ 0007, (variety of measures have been implemented to address driver distraction-related accidents arising from mobile wireless device usage by drivers, a superior method and apparatus are described herein that provides a sensor/signal/image based solution to a need to ensure that mobile wireless devices are not used in inappropriate settings).

As to claim 29, Neitzel further discloses:

a. reporting the distraction context and the possible distraction episode to a user of the mobile device read on ¶ 0037, (If the limitations definition 104 calls for a provided application service/functionality to be disabled in the currently determined physical operating environment, then the mobile wireless device 100 takes a prescribed remedial action (e.g., disabling/deactivating the services/functionality, issuing a warning or audible instruction, recording an unsafe usage event, activating a timer to take a further action to limit further usage of a service/functionality, etc.) in accordance with the limitations definition 104 stored within memory on the mobile wireless device 100).

As to claim 30, Cordova further teaches:

a. scoring the possible distraction episode using the distraction context read on ¶ 0056, (once an estimate is completed by some embodiments, a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades

may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving)).

Citation of pertinent Prior Arts

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see PTO-892 Notice of References Cited.

Conclusion

9. If the claimed invention is amended, Applicant is respectfully requested to indicate the portion(s) of the specification, which dictate(s) the structure/description relied upon to assist the Examiner in proper interpretation of the amended language and also to verify and ascertain the metes and bounds of the claimed invention. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fekadeselassie Girma whose telephone number is (571) 270-5886. The examiner can normally be reached on M-F 8:30 am – 5pm. Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Field can be reached on (571) 272-4090. 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.

/FEKADESELASSIE GIRMA/
Primary Examiner, Art Unit 2689

Notice of References Cited	Application/Control No. 16/403,761	Applicant(s)/Patent Under Reexamination Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20120071151-A1	03-2012	Abramson; Dan	H04L67/12	455/418
*	B	US-20160216130-A1	07-2016	Abramson; Dan	G01C21/3626	1/1
*	C	US-20160006860-A1	01-2016	Neitzel; Erik Paul	H04M1/72577	455/419
*	D	US-10029696-B1	07-2018	Ferguson; Dana	B60W40/09	1/1
*	E	US-10349239-B2	07-2019	Demele; Michael P.	H04W4/21	1/1
*	F	US-10097683-B2	10-2018	Okamoto; Katsuhiro	H04M1/72569	1/1
*	G	US-20170105098-A1	04-2017	Cordova; Brad	H04L43/16	1/1
*	H	US-20150312655-A1	10-2015	Balakrishnan; Hari	H04Q9/00	340/870.07
*	I	US-9228836-B2	01-2016	Girod; Lewis D.	G01C15/00	1/1
*	J	US-8457880-B1	06-2013	Malalur; Paresh Govind	G01C21/30	701/410
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

CPC - Searched*		
Symbol	Date	Examiner
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG
See attached EAST search notes	07/11/2019	FG
inventor and assignee search	07/11/2019	FG
fwd and back citation search	07/11/2019	FG

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

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

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Attorney Docket No.: 44355-0046001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	Unknown
Application No.	:	16/403,761	Examiner	:	Unknown
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

Copies of United States patent documents will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

US serial number and filing date/ status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449
Appln. No. 16/403,776, filed on 5/6/2019 Pending (Attorney Docket No. 44355-0077001)	Not Assigned	Yes	Yes	Yes

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G./

Attorney Docket: 44355-0046001

This statement is being filed within three months of the filing date of the application and before the receipt of a first action on the merits. Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: /5/10/19/

/David L. Feigenbaum/
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

61911225.doc

Examiner Signature	Date Considered
/FEKADESELASSIE GIRMA/	07/12/2019

EXAMINER: initials citation considered. Draw Line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G./

Bibliographic Data

Application No: 16/403,761

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /FEKADESELASSIE GIRMA/ Examiner's Signature | Initials

Title: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/06/2019	340	2689	44355-0046001
RULE			

APPLICANTS

Cambridge Mobile Telematics Inc., Cambridge, MA,

INVENTORS

Hari Balakrishnan Belmont, MA, UNITED STATES

William Bradley Arlington, MA, UNITED STATES

Samuel Ross Madden Newton, MA, UNITED STATES

Jun-geun Park Cambridge, MA, UNITED STATES

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

05/15/2019

** SMALL ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022
UNITED STATES

FILING FEE RECEIVED

$3,355

Sheet 1 of 1

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	44355-0046001	16/403,761
	Applicant: Cambridge Mobile Telematics Inc.	
	Filing Date: May 6, 2019	Group Art Unit

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	8457880	6/4/2013	Malalur et al.			
	2.	9228836	1/5/2016	Girod et al.			
	3.	20150312655	10/29/2015	Balakrishnan et al.			
	4.	20170105098	4/13/2017	Cordova et al.			
	5.	20190116463	4/18/2019	Cordova et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	6.	NAIC "Insurance Company Telematics Rate/Rule Page: Rule UBI-1_NJ," SERFF Filing Access, April 19, 2018, retrieved on May 9, 2019, URL <https://filingaccess.serff.com/sfa/search/filingSummary.xhtml?filingId=131465909>, 1 pages
	7.	USPTO Transaction History and Application as filed in U.S. Appln. No. 16/403,776, retrieved on May 9, 2019, 67pages

Examiner Signature	Date Considered
/FEKADESELASSIE GIRMA/	07/12/2019

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G./

Petitioner Ex 1002, p. 109
Zendrive v. CMT, IPR2023-01440

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L2	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L3	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L4	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L5	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L6	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/12 14:24
L7	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
L8	971	L6 or L7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
L9	4	L8 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO;	AND	OFF	2019/07/12 14:24

			DERWENT			
L10	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
L11	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L12	0	L11 L10	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L13	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
L14	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
L15	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
L16	35240	L15 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
L17	17	L15 L11	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
L18	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
L19	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/12 14:24
L20	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/12 14:24
L21	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/12 14:24
L22	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25
L23	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25
S1	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or	US-PGPUB; USPAT;	AND	OFF	2019/07/11 14:48

		velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	FPRS; EPO; JPO			
S2	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:49
S3	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S4	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S6	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:52
S7	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/11 21:25
S8	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun")))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:25
S9	971	S7 or S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S10	4	S9 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S11	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:33
S12	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:33

S13	0	S12 S11	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:33
S14	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:34
S15	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S16	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S17	35240	S16 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S18	17	S16 S12	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S19	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:42
S20	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/11 21:42
S21	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/11 21:45
S22	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/11 21:46

EAST Search History (Interference)

< This search history is empty>

7/12/2019 3:36:22 PM
C:\Users\fgirma\Documents\EAST\Workspaces\16403761 DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

Copies of United States patent documents will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

US serial number and filing date/ status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449

Appln. No. 16/403,761, filed on 5/6/2019 Pending (Attorney Docket No. 44355-0046001)	Fekadeselassie Girma GAU: 2689	No – submitted on 5/10/2019	No – submitted on 5/10/2019	No – submitted on 5/10/2019
Appln. No. 16/403,776, filed on 5/6/2019 Pending (Attorney Docket No. 44355-0077001)	Fekadeselassie Girma GAU: 2689	No – submitted on 5/10/2019	No – submitted on 5/10/2019	No – submitted on 5/10/2019

This statement is being filed within three months of the filing date of the application or before the receipt of a first action on the merits.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: /9/13/19/

/David L. Feigenbaum/
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

62101207.doc

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 44355-0046001	Application No. 16/403,761
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Cambridge Mobile Telematics Inc.	
(37 CFR §1.98(b))		Filing Date May 6, 2019	Group Art Unit 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	5148153	9/15/1992	Haymond			
	2.	20140168057	6/19/2014	Ahuja et al.			
	3.	20140256303	9/11/2014	Jones			
	4.	20140353574	12/29/2014	Hirabayashi			
	5.	20160014262	1/14/2016	Hodges et al.			
	6.	20160044156	2/11/2016	Hodges et al.			
	7.	20160267335	9/15/2016	Hampiholi			
	8.	20170210290	7/27/2017	Cordova et al.			
	9.	20180126901	5/10/2018	Levkova et al.			
	10.	20180167502	6/14/2018	Madhani			
	11.	20180173934	6/21/2018	Zink et al.			
	12.	20190034873	1/31/2019	Boitel et al.			
	13.	20190051305	2/14/2019	Liddell et al.			
	14.	20190096215	3/28/2019	Shahid et al.			
	15.	20190102840	4/3/2019	Perl et al.			
	16.	20190159166	5/23/2019	Aggarwal et al.			
	17.	20190185018	6/20/2019	Tao et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Petitioner Ex 1002, p. 116
Zendrive v. CMT, IPR2023-01440

Electronic Acknowledgement Receipt

EFS ID:	37157071
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	David L Feigenbaum/Mollie Kufner
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	44355-0046001
Receipt Date:	13-SEP-2019
Filing Date:	06-MAY-2019
Time Stamp:	12:12:46
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	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_Transmittal.pdf	74272 698e8358e2e0b48c6bbd84935f49f2def0df4a33	no	2

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_1449.pdf	126416 0f29512b36fb27bdbb2fbc0a21a40a0dda259583	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	200688	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

REPLY TO ACTION OF JULY 17, 2019

Electronic Acknowledgement Receipt

EFS ID:	37484222
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	David L Feigenbaum/Cathy O'Brien
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	44355-0046001
Receipt Date:	17-OCT-2019
Filing Date:	06-MAY-2019
Time Stamp:	12:51:45
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		Reply.pdf	153134 e94bade2d6d46efb80a507aa6c80c400f03abb5e	yes	16

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	6	16
	Claims	2	5
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	153134	

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.

REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (presented in small, boldfaced type and not necessarily in their original order).

2. Claim 27 recites the term "... the vicinity of any year of an occupant .... It seems a minor typo to mean "the vicinity of any ear of an occupant." Appropriate correction required.

Done.

4. Claims 1-30 are provisionally rejected on the ground of no statutory obviousness-type double patenting as being unpatentable over claims 1-20 of US Patent application No. 16/403776. Although the conflicting claims are not identical, they are not patentably distinct from each other because 1) receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, determining a possible distraction episode based on the received signals, 2) presenting information about the possible distraction episode to a user, 3) receiving information from a user who was a participant on the trip indicative of a circumstance of the trip, the information being received in response to the presenting of the information about possible distraction episode, 4) the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip 5) automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, and 6) determining that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

In view of the above, it is noted that the instant application is broader in every aspect than the US patent document and is therefore an obvious variant thereof, thus, allowing this would result in an unjustified or improper timewise extension of the "right to exclude" granted by a patent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Without conceding the examiner's position, the applicant will consider filing a terminal disclaimer once the examiner has identified claims that the examiner considers patentable.

5. Claims 1-30 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel (US 2016/0006860) in view of Cordova (US 2017/0105098).

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors read on 0008, (The mobile wireless device comprises a plurality of sensors for sensing: motion, thermal images in a field of view of a lens, and a side of a vehicle cabin);

b. at least an accelerometer and a gyroscope, using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states

comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device read on 0026, (the gyroscope 108 and accelerometer 106 provide complimentary motion data streams that aid determining a current physical status (e.g., motion speed, orientation) of the mobile wireless device 100);

c. based on the identified physical states, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver read on 0044 & 0047, (the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. The probabilistic state--based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/- a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used);

d. determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode read on Fig. 3, 0092 - 0095, (during step 375, after determining the device 100 is in the possession of the driver, the state-based logic 102 implements, by way of example, the following: 1, Disabling application/device functions and/or interfaces based upon operator or government mandated options specified in the limitations definition 104; 2. Maintaining a running log of UPS-based device position changes (for determining an average speed) of the device 100 for a time interval having the time duration tc; and 3. If the average speed is greater than one (1) km/hr over the duration tc of the time interval (indicating that the vehicle is still moving), then maintaining disablement of functions and/or interfaces based upon operator or government mandated options; and returning control of the state-based logic 102 to the "start" of the exemplary set of operations and decisions summarized in FIG. 3 if the average speed over the interval is less than or equal to one (1) km/hr (i.e., the vehicle has effectively "stopped")).

The applicant respectfully disagrees, as the cited portions of Neitzel did not describe or make obvious "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1. Instead, the cited portions of Neitzel described a process for conditionally "[d]isabling application/device functions and/or interfaces based upon operator or government mandated options" (Fig. 3, ¶ 0092-0093). Neitzel described a series of steps, outlined in Fig. 3, for detecting when to disable device functionality (e.g., after determining the device is in the possession of the driver of a moving vehicle). Once the criteria for disabling the device are met, Neitzel described that the device functions and/or interfaces remain disabled so long as the vehicle is in motion; otherwise, the system returns "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (¶ 0095). In other

words, Neitzel detected a single instance for which the described criteria for disabling the device is met and did not attempt to detect another instance until after the vehicle had stopped and the process was allowed to restart. Thus, even if detecting when to disable device functionality, as in Neitzel, were considered to be determining a distraction episode (which the applicant disputes), Neitzel did not describe or make obvious determining a distraction episode that spans two or more of the discrete distraction events during the trip.

Neitzel does not explicitly disclose generating discrete events separated in time.

As explained above, there are also other features of the applicant's amended claim 1 that were not described by the cited portions of the Neitzel reference

However, Cordova in track driving behaviors teaches:

e. generating discrete events separated in time read on 0052, (based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components and/or performed by different steps/components, processing block 350 has a dotted line to further emphasize the optional nature of this stage).

The applicant respectfully disagrees. The cited paragraph of Cordova merely described that aggravating and/or mitigating factors are identified based on the time frame of the potentially distracting activity (¶ 0052). Identifying aggravating and/or mitigating factors during the same time frame of the potentially distracting activity is not equivalent to generating discrete distraction events separated in time, as recited in claim 1.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to detect and assess distracted drivers and provide the framework for measuring inattentiveness, and accurately predict actual device usage while driving to analyze collected driving data and assign scores based on different criteria.

The applicant respectfully disagrees, as Neitzel, alone or in combination with Cordova, neither described nor would have made obvious at least "determining a distraction episode that spans two or more of the discrete distraction events during the trip."

As described above, the cited portions of Neitzel described detecting a single instance in which criteria for disabling features of a mobile device was met and did not attempt to detect another instance until the vehicle was stopped and the system returned "to the 'start' of the

exemplary set of operations and instructions summarized in Fig. 3" (¶ 0092-0095). Thus, the cited portions of Neitzel did not describe "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1.

Cordova similarly did not describe or make obvious the foregoing limitation of claim 1. For instance, paragraphs 0049-0056 and FIG. 3 of Cordova described that "the activity being performed with the mobile device 101 is estimated" and subsequently used to determine the level of driver inattentiveness and generate a score. Thus, Cordova described identifying a single instance of driver distraction, not "determining a distraction episode that spans two or more of the discrete distraction events during the trip."

As to claim 2, Neitzel further discloses:

a. in which the physical state comprises an operational state of the mobile device read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired. during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 3, Neitzel .the discloses:

a. which the operational state comprises a state of locking of the mobile device read on 0102, (Screen lock—preventing viewing information/graphics on the display screen).

As to claim 4, Neitzel further discloses:

a. which the operational state comprises a state of a phone call read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications).

As to claim 5, N4.4tzel further discloses:

which the operational state comprises a power condition read on 0038, (having described the general functionality of the state-based logic 102., attention is now directed to the particular exemplary steps, summarized in FIG. 3, carried out by a particuiar exemplary embodiment of the state-based logic 102. After power-on of the mobile wireless device 100).

As to claim 6, Neitzel further discloses:

a. which the operational state comprises an aspect of a foreground app running on the mobile device read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 7, Neitzel further discloses:

a. which at least one of the discrete events comprises a possible discrete distraction event during the trip read on 0020 (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

Without conceding to the examiner's position, the applicant has temporarily canceled claim 7.

As to claim 8, Neitzel further discloses:

which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode read on 0040, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 9, Neitzel further discloses:

a. which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction read on 0040 & 0044, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs. If at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315).

As to claim 10, Neitzel further discloses:

a. which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction read on 0040, (if the analyzed signal characteristics indicate that the device is not within a moving motor vehicle, then control passes to step 310. During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary -based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during- step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 11, Neitzel the discloses:

a. which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length read on 9I 0042 --- 0043, (Such GPS signal

acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example a time-ordered sequence of GPS measurements, over a specified time duration (ty) are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty. Moreover, during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 12, the claim is corresponding to claim 1, Therefore, the claim is rejected for the same rationales set forth for claim 1.

The applicant respectfully disagrees. The limitations of claim 12 do not correspond to claim 1. Without conceding the examiner's position, the applicant has amended claim 12 to recite "based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker."

Neither Neitzel nor Cordova described or made obvious at least this feature of amended claim 12. For instance, paragraph 0020 of Neitzel described conditionally limiting "services/functionality of a mobile device," including "device-to-ear (hand-held) voice calls," but made no mention of determining that the mobile device is engaged in an active telephone call, let alone "determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker." Cordova described estimating "that driver 1340 is holding mobile device 101 to her ear, and thus making a phone call without use of a headset" (¶ 0123-0124). However, estimating when a phone call is made without use of a headset, as described in Cordova, does not make obvious "determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker," as recited in amended claim 12.

NOT enough to determine headset use

As to claim 13, the claim is corresponding to claim 4. Therefore, the claim is rejected for the same rationales set forth for claim 4.

Without conceding to the examiner's position, the applicant has temporarily canceled claim 13.

As to claim 14, Neitzel further discloses:

a. based on the received signals, determining a proximity of a user's hand to the mobile device read on 0021. (The mobile wireless device, without any aid by a user, determines

whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features)).

As to claim 15, Neitzel further discloses:

based on the received signals, determining whether a display screen of the mobile device is being tapped read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time. period that, in contrast to a relatively short time period tx for accelerometer reading may last several seconds).

As to claim 16, the claim is corresponding to claim 6. Therefore, the claim is rejected for the same rationales set forth for claim 6.

As to claim 17, Neitzel further discloses:

a. based on the received signals, determining a behavior of a conveyance being used for the trip read on 0036, (the exemplary state-based logic summarized in FIG. 3 operates on multiple, conditionally activated/gated, data streams (recorded over a specified time window) from the embedded sensors e.g., accelerometer, gyroscope, magnetometer, etc.), signal receivers (e.g., GPS signal receiver), at d imaging/camera inputs (e.g., infrared fisheye camera lens). The state based logic, based upon specified configuration parameters and the conditionally applied data streams, makes a probabilistic determination whether the mobile wireless device 100 is operating in a particular one of multiple potential physical operating environments).

As to claim 18, Neitzel further discloses:

a. which determining the context of a possible distraction episode comprises: detecting a rotation of a display screen of the mobile device read on ¶ 0025 & 7 0028, (a gyroscope 108 measures a rate of rotation around a particular axis at an angular rate, and helps maintain orientation. The gyroscope 108, in the exemplary implementation, determines the X, Y, and Z orientations for a device. The mobile wireless device 100 includes, among other things, known data processing functionality that combines accelerometer, gyroscope, and magnetometer data to render a currently sensed orientation of the mobile wireless device 100. Each of these three sensors makes a unique contribution to the overall orientation sensing capabilities of the mobile wireless device 100).

As to claim 19, Neitzel further discloses:

a. detecting a tap on the display screen based on a parameter of the rotation read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 20, Neitzel further discloses:

a. based on the received signals, determining a frequency of taps on a display screen of the mobile device read on 0044, (if at step 330, the movement. orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335).

As to claim 21, Neitze1 further discloses:

a. based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 22, Neitzel further discloses:

a. determining an occurrence of a tapping event based on a tapping based on taps in the sequence and periods of time between successive taps read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as -well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

Cordova further teaches:

b. score based on tapping read on 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current - behavior rating, and/or other similar features).

As to claim 23, Neitzel further discloses:

a. based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may la.st several seconds).

As to claim 24, Neitzel further discloses:

a. based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode read on 0043, (such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time, period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 25, Neitzel further discloses:

a. the display screen of the mobile device faces the back of a conveyance used for the trip, the

mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and the context of the possible distraction episode comprises the mobile device being in the conveyance read or 0043 & 0079, (which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. x for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera -which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 26, Neitzel further discloses:

a. which the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and the context of the possible distraction read on 0069 — 0074, if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from_ a time period specified during step 310). Control then passes to step 315. If at step 355, the probabilistic state-based logic 102 determines, through thermal image signature matching, that the user of the device 100 is not a front seat occupant, then control passes to step 360 wherein the state-based logic 102 executes in accordance with a "passenger in possession" operating mode. During step 360, while in the possession of a passenger, the state-based logic 102 exhibits the following exemplary behaviors: 1. Allow normal operation for voice, data, and text for a specified "hysteresis" time duration (tb); 2. Maintain a running log of thermal sensor data for a specified time duration (td); 3. Maintain a running log of speed for a specified time duration (tc); and 4. Maintain a running log of device positional data for a specified time duration (tz)). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525 it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 27, Neitzel further discloses:

a. the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ear of an occupant of the conveyance read on 0020, 0045 & 0050, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver). At step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. This distinction is generally a result of the diffusion of heat on a windshield—as opposed to the back of a front seat where various combinations of obstructions (e.g. head rests) within the captured field of view of the lens 112 result in greater variances in the upper portion of the lens 112 field of view (when the device 100 is properly oriented during image capture)).

As to claim 28, Neitzel further discloses:

a. the display screen of the mobile device faces generally downwardly, and the context of the possible distraction episode comprises the mobile device not being used read on 0007, (variety of measures have been implemented to address driver distraction-related accidents arising from mobile -wireless device usage by drivers, a superior method and apparatus are described herein that provides a sensor/signal/image based solution to a need to ensure that mobile wireless devices are not used in inappropriate settings).

As to claim 29, Neitzel further discloses:

a, reporting the distraction context and the possible distraction episode to a user of the mobile device read on 0037, (if the .limitations definition 104 calls for a provided application service functionality to be disabled in the currently determined physical operating environment, then the mobile wireless device 100 takes a prescribed remedial action disabling/deactivating the services/functionality, issuing a warning or audible instruction, recording an unsafe usage event, activating a timer to take a further action to limit further usage of a service/functionality, etc.) in accordance with the limitations definition 104 stored within memory on the mobile, wireless device 100).

As to claim 30, Cordova further teaches:

a. scoring the possible distraction episode using the distraction context read on 0056, (once an estimate is completed by some embodiments, a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated.. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving)).

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good

reasons for patentability of those claims and other claims, (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims, or (d) canceled one or more claims does not mean that the applicant disclaims or relinquishes any such claim or any other claim or their features.

The applicant does not relinquish the subject matter of and reserves the right to pursue, in this prosecution and in the prosecution of other patent applications, these claims, other claims not presented in this prosecution (including narrower and broader claims), claims to other features, previously presented claims, and previous versions of presented claims.

Apply any necessary charges or credits to deposit account 06 1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 17, 2019

/Christopher L. Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23947838.doc

List of claims (replacing prior versions)

1. (currently amended) A method comprising

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors comprising at least an accelerometer and a gyroscope,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, ~~and operational state of the mobile device,~~

based on the identified physical states, generating discrete distraction events separated in time, at least one of the discrete distraction events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver, and

determining a distraction episode that spans two or more of the discrete distraction events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode.

2. (original) The method of claim 1 in which the physical state comprises an operational state of the mobile device.

3. (original) The method of claim 2 in which the operational state comprises a state of locking of the mobile device.

4. (original) The method of claim 3 in which the operational state comprises a state of a phone call.

5. (original) The method of claim 4 in which the operational state comprises a power condition.

6. (original) The method of claim 4 in which the operational state comprises an aspect of a foreground app running on the mobile device.

7. (canceled)

8. (original) The method of claim 1 in which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode.

9. (original) The method of claim 8 in which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction.

10. (original) The method of claim 9 in which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction.

11. (original) The method of claim 10 in which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

12. (currently amended) A method comprising

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip,

determining a possible distraction episode based on one or more of the physical states, ~~and~~

based on the received signals, determining that the mobile device is engaged in an active telephone call, and

based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker.

13. (canceled)

14. (original) The method of claim 12 comprising

based on the received signals, determining a proximity of a user's hand to the mobile device.

15. (original) The method of claim 12 comprising

based on the received signals, determining whether a display screen of the mobile device is being tapped.

16. (original) The method of claim 12 comprising

based on the received signals, identifying a foreground app running on the mobile device.

17. (original) The method of claim 12 comprising

based on the received signals, determining a behavior of a conveyance being used for the trip.

18. (currently amended) The method of claim 12 comprising ~~in which~~

determining ~~the~~ a context of a possible distraction episode ~~comprises:~~ based on detecting a rotation of a display screen of the mobile device.

19. (original) The method of claim 18 comprising

detecting a tap on the display screen based on a parameter of the rotation.

20. (original) The method of claim 12 comprising

based on the received signals, determining a frequency of taps on a display screen of the mobile device.

21. (original) The method of claim 12 comprising

based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices.

22. (original) The method of claim 20 comprising

determining an occurrence of a tapping event based on a tapping score based on taps in the sequence and periods of time between successive taps.

23. (original) The method of claim 12 comprising

based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode.

24. (currently amended) The method of claim 23 comprising

based on the orientation of the mobile device or the display screen of the mobile device, identifying ~~the~~ a context of the possible distraction episode.

25. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and

the context of the possible distraction episode comprises the mobile device being mounted in the conveyance.

26. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and

the context of the possible distraction episode is not that the mobile devices mounted.

27. (currently amended) The method of claim 24 in which

the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and

the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ~~year~~ ear of an occupant of the conveyance.

28. (original) The method of claim 24 in which

the display screen of the mobile device faces generally downwardly, and

the context of the possible distraction episode comprises the mobile device not being used.

29. (currently amended) The method of claim 24 comprising

reporting the ~~distraction~~ context and the possible distraction episode to a user of the mobile device.

30. (currently amended) The method of claim 24 comprising

scoring the possible distraction episode using the ~~distraction~~ context.

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 16/403,761	Filing Date 05/06/2019	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/17/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 29	Minus	** 30	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

SUPPLEMENTAL REPLY TO ACTION OF JULY 17, 2019, AND INTERVIEW SUMMARY

List of claims (replacing prior versions)

1. (currently amended) A method comprising

receiving signals from one or more detectors ~~housed in~~ of a mobile device while the mobile device is on a trip in a vehicle, the detectors comprising at least an accelerometer and a gyroscope,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising ~~speed of~~ motion of the mobile device along a trajectory of the trip, ~~and operational state of the mobile device,~~

based on the identified physical states, separately generating two or more discrete distraction events separated in time, at least one of the discrete distraction events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver, and

determining a distraction episode that ~~spans~~ extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle,

the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode.

2. (original) The method of claim 1 in which the physical state comprises an operational state of the mobile device.

3. (original) The method of claim 2 in which the operational state comprises a state of locking of the mobile device.

4. (original) The method of claim 3 in which the operational state comprises a state of a phone call.

5. (original) The method of claim 4 in which the operational state comprises a power condition.

6. (original) The method of claim 4 in which the operational state comprises an aspect of a foreground app running on the mobile device.

7. (canceled)

8. (original) The method of claim 1 in which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode.

9. (original) The method of claim 8 in which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction.

10. (original) The method of claim 9 in which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction.

11. (original) The method of claim 10 in which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

12. (currently amended) A method comprising

receiving signals from one or more detectors ~~housed in~~ of a mobile device while the mobile device is on a trip,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip,

determining a possible distraction episode based on one or more of the physical states, ~~and~~

based on the received signals, determining that the mobile device is engaged in an active telephone call,

based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker, and

determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker.

13. (canceled)

14. (original) The method of claim 12 comprising

based on the received signals, determining a proximity of a user's hand to the mobile device.

15. (original) The method of claim 12 comprising

based on the received signals, determining whether a display screen of the mobile device is being tapped.

16. (original) The method of claim 12 comprising

based on the received signals, identifying a foreground app running on the mobile device.

17. (original) The method of claim 12 comprising

based on the received signals, determining a behavior of a conveyance being used for the trip.

18. (currently amended) The method of claim 12 comprising ~~in which~~

determining ~~the~~ a context of a possible distraction episode ~~comprises:~~ based on detecting a rotation of a display screen of the mobile device.

19. (original) The method of claim 18 comprising

detecting a tap on the display screen based on a parameter of the rotation.

20. (original) The method of claim 12 comprising

based on the received signals, determining a frequency of taps on a display screen of the mobile device.

21. (original) The method of claim 12 comprising

based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices.

22. (original) The method of claim 20 comprising

determining an occurrence of a tapping event based on a tapping score based on taps in the sequence and periods of time between successive taps.

23. (original) The method of claim 12 comprising

based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode.

24. (currently amended) The method of claim 23 comprising

based on the orientation of the mobile device or the display screen of the mobile device, identifying ~~the~~ a context of the possible distraction episode.

25. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and

the context of the possible distraction episode comprises the mobile device being mounted in the conveyance.

26. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and

the context of the possible distraction episode is not that the mobile devices mounted.

27. (currently amended) The method of claim 24 in which

the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and

the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ~~year~~ ear of an occupant of the conveyance.

28. (original) The method of claim 24 in which

the display screen of the mobile device faces generally downwardly, and

the context of the possible distraction episode comprises the mobile device not being used.

29. (currently amended) The method of claim 24 comprising

reporting the ~~distraction~~ context and the possible distraction episode to a user of the mobile device.

30. (currently amended) The method of claim 24 comprising

scoring the possible distraction episode using the ~~distraction~~ context.

REMARKS AND INTERVIEW SUMMARY

The applicant thanks the examiner for the courtesy of the telephonic interview held on October 25, 2019. During the interview, the applicant's representative discussed the language of claims 1 and 12, the distinctions between the cited references and those claims, and possible changes to the claims. The applicant proposed to submit a supplemental reply, and the examiner will do additional searching based on it.

The applicant has made additional amendments to the claims based on the interview in this supplemental reply. The amendments shown in the claims in this supplemental reply are relative to the claims in the reply dated October 17, 2019 to the action dated July 17, 2019.

Below the applicant has reproduced the entire remarks section of the original reply, for reference.

The comments of the applicant below are each preceded by related comments of the examiner (presented in small, boldfaced type and not necessarily in their original order).

2. Claim 27 recites the term "... the vicinity of any year of an occupant .... It seems a minor typo to mean "the vicinity of any ear of an occupant." Appropriate correction required.

Done.

4. Claims 1-30 are provisionally rejected on the ground of no statutory obviousness-type double patenting as being unpatentable over claims 1-20 of US Patent application No. 16/403776. Although the conflicting claims are not identical, they are not patentably distinct from each other because 1) receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, determining a possible distraction episode based on the received signals, 2) presenting information about the possible distraction episode to a user, 3) receiving information from a user who was a participant on the trip indicative of a circumstance of the trip, the information being received in response to the presenting of the information about possible distraction episode, 4) the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip 5) automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, and 6) determining that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

In view of the above, it is noted that the instant application is broader in every aspect than

the US patent document and is therefore an obvious variant thereof, thus, allowing this would result in an unjustified or improper timewise extension of the "right to exclude" granted by a patent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Without conceding the examiner's position, the applicant will consider filing a terminal disclaimer once the examiner has identified claims that the examiner considers patentable.

5. Claims 1-30 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel (US 2016/0006860) in view of Cordova (US 2017/0105098).

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors read on 0008, (The mobile wireless device comprises a plurality of sensors for sensing: motion, thermal images in a field of view of a lens, and a side of a vehicle cabin);

b. at least an accelerometer and a gyroscope, using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device read on 0026, (the gyroscope 108 and accelerometer 106 provide complimentary motion data streams that aid determining a current physical status (e.g., motion speed, orientation) of the mobile wireless device 100);

c. based on the identified physical states, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver read on 0044 & 0047, (the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. The probabilistic state--based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/- a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used);

d. determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode read on Fig. 3, 0092 - 0095, (during step 375, after determining the device 100 is in the possession of the driver, the state-based logic 102 implements, by way of example, the following: 1, Disabling application/device functions and/or interfaces based upon operator or government mandated options specified in the limitations definition 104; 2. Maintaining a running log of UPS-based device position changes (for determining an average speed) of the device 100 for a time interval having the time duration tc; and 3. If the average speed is greater than one (1) km/hr over the duration tc of the time interval (indicating that the vehicle is still moving), then maintaining disablement of functions and/or interfaces based

upon operator or government mandated options; and returning control of the state-based logic 102 to the "start" of the exemplary set of operations and decisions summarized in FIG. 3 if the average speed over the interval is less than or equal to one (1) km/hr (i.e., the vehicle has effectively "stopped")).

The applicant respectfully disagrees, as the cited portions of Neitzel did not describe or make obvious "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1. Instead, the cited portions of Neitzel described a process for conditionally "[d]isabling application/device functions and/or interfaces based upon operator or government mandated options" (Fig. 3, ¶ 0092-0093). Neitzel described a series of steps, outlined in Fig. 3, for detecting when to disable device functionality (e.g., after determining the device is in the possession of the driver of a moving vehicle). Once the criteria for disabling the device are met, Neitzel described that the device functions and/or interfaces remain disabled so long as the vehicle is in motion; otherwise, the system returns "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (¶ 0095). In other words, Neitzel detected a single instance for which the described criteria for disabling the device is met and did not attempt to detect another instance until after the vehicle had stopped and the process was allowed to restart. Thus, even if detecting when to disable device functionality, as in Neitzel, were considered to be determining a distraction episode (which the applicant disputes), Neitzel did not describe or make obvious determining a distraction episode that spans two or more of the discrete distraction events during the trip.

Neitzel does not explicitly disclose generating discrete events separated in time.

As explained above, there are also other features of the applicant's amended claim 1 that were not described by the cited portions of the Neitzel reference

However, Cordova in track driving behaviors teaches:

e. generating discrete events separated in time read on 0052, (based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components and/or performed by different steps/components, processing block 350 has a dotted line to further emphasize the optional nature of this stage).

The applicant respectfully disagrees. The cited paragraph of Cordova merely described that aggravating and/or mitigating factors are identified based on the time frame of the potentially distracting activity (¶ 0052). Identifying aggravating and/or mitigating factors during

the same time frame of the potentially distracting activity is not equivalent to generating discrete distraction events separated in time, as recited in claim 1.

> **Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to detect and assess distracted drivers and provide the framework for measuring inattentiveness, and accurately predict actual device usage while driving to analyze collected driving data and assign scores based on different criteria.**

The applicant respectfully disagrees, as Neitzel, alone or in combination with Cordova, neither described nor would have made obvious at least "determining a distraction episode that spans two or more of the discrete distraction events during the trip."

As described above, the cited portions of Neitzel described detecting a single instance in which criteria for disabling features of a mobile device was met and did not attempt to detect another instance until the vehicle was stopped and the system returned "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (¶ 0092-0095). Thus, the cited portions of Neitzel did not describe "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1.

Cordova similarly did not describe or make obvious the foregoing limitation of claim 1. For instance, paragraphs 0049-0056 and FIG. 3 of Cordova described that "the activity being performed with the mobile device 101 is estimated" and subsequently used to determine the level of driver inattentiveness and generate a score. Thus, Cordova described identifying a single instance of driver distraction, not "determining a distraction episode that spans two or more of the discrete distraction events during the trip."

> **As to claim 2, Neitzel further discloses:**
>
> **a. in which the physical state comprises an operational state of the mobile device read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired. during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).**
>
> **As to claim 3, Neitzel .the discloses:**
>
> **a. which the operational state comprises a state of locking of the mobile device read on 0102,**

(Screen lock—preventing viewing information/graphics on the display screen).

As to claim 4, Neitzel further discloses:

a. which the operational state comprises a state of a phone call read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications).

As to claim 5, N4.4tzel further discloses:

which the operational state comprises a power condition read on 0038, (having described the general functionality of the state-based logic 102., attention is now directed to the particular exemplary steps, summarized in FIG. 3, carried out by a particuiar exemplary embodiment of the state-based logic 102. After power-on of the mobile wireless device 100).

As to claim 6, Neitzel further discloses:

a. which the operational state comprises an aspect of a foreground app running on the mobile device read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 7, Neitzel further discloses:

a. which at least one of the discrete events comprises a possible discrete distraction event during the trip read on 0020 (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

Without conceding to the examiner's position, the applicant has temporarily canceled claim 7.

As to claim 8, Neitzel further discloses:

which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode read on 0040, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 9, Neitzel further discloses:

a. which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction read on 0040 & 0044, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait

state until a triggering event (e.g., the delay period expires) occurs. If at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315).

As to claim 10, Neitzel further discloses:

a. which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction read on 0040, (if the analyzed signal characteristics indicate that the device is not within a moving motor vehicle, then control passes to step 310. During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary -based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during- step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 11, Neitzel the discloses:

a. which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length read on 9I 0042 --- 0043, (Such GPS signal acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example a time-ordered sequence of GPS measurements, over a specified time duration (ty) are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty. Moreover, during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 12, the claim is corresponding to claim 1, Therefore, the claim is rejected for the same rationales set forth for claim 1.

The applicant respectfully disagrees. The limitations of claim 12 do not correspond to claim 1. Without conceding the examiner's position, the applicant has amended claim 12 to recite "based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker."

Neither Neitzel nor Cordova described or made obvious at least this feature of amended claim 12. For instance, paragraph 0020 of Neitzel described conditionally limiting "services/functionality of a mobile device," including "device-to-ear (hand-held) voice calls," but made no mention of determining that the mobile device is engaged in an active telephone call, let alone "determining whether the mobile device is engaged in the active telephone call

using a handset speaker, an internal speaker phone, or an external speaker." Cordova described estimating "that driver 1340 is holding mobile device 101 to her ear, and thus making a phone call without use of a headset" (¶ 0123-0124). However, estimating when a phone call is made without use of a headset, as described in Cordova, does not make obvious "determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker," as recited in amended claim 12.

As to claim 13, the claim is corresponding to claim 4. Therefore, the claim is rejected for the same rationales set forth for claim 4.

Without conceding to the examiner's position, the applicant has temporarily canceled claim 13.

As to claim 14, Neitzel further discloses:

a. based on the received signals, determining a proximity of a user's hand to the mobile device read on 0021. (The mobile wireless device, without any aid by a user, determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features)).

As to claim 15, Neitzel further discloses:

based on the received signals, determining whether a display screen of the mobile device is being tapped read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time. period that, in contrast to a relatively short time period tx for accelerometer reading may last several seconds).

As to claim 16, the claim is corresponding to claim 6. Therefore, the claim is rejected for the same rationales set forth for claim 6.

As to claim 17, Neitzel further discloses:

a. based on the received signals, determining a behavior of a conveyance being used for the trip read on 0036, (the exemplary state-based logic summarized in FIG. 3 operates on multiple, conditionally activated/gated, data streams (recorded over a specified time window) from the embedded sensors e.g., accelerometer, gyroscope, magnetometer, etc.), signal receivers (e.g., GPS signal receiver), at d imaging/camera inputs (e.g., infrared fisheye camera lens). The state based logic, based upon specified configuration parameters and the conditionally applied data streams, makes a probabilistic determination whether the mobile wireless device 100 is operating in a particular one of multiple potential physical operating environments).

As to claim 18, Neitzel further discloses:

a. which determining the context of a possible distraction episode comprises: detecting a rotation of a display screen of the mobile device read on ¶ 0025 & 7 0028, (a gyroscope 108 measures a rate of rotation around a particular axis at an angular rate, and helps maintain

orientation. The gyroscope 108, in the exemplary implementation, determines the X, Y, and Z orientations for a device. The mobile wireless device 100 includes, among other things, known data processing functionality that combines accelerometer, gyroscope, and magnetometer data to render a currently sensed orientation of the mobile wireless device 100. Each of these three sensors makes a unique contribution to the overall orientation sensing capabilities of the mobile wireless device 100).

As to claim 19, Neitzel further discloses:

a. detecting a tap on the display screen based on a parameter of the rotation read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 20, Neitzel further discloses:

a. based on the received signals, determining a frequency of taps on a display screen of the mobile device read on 0044, (if at step 330, the movement. orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335).

As to claim 21, Neitze1 further discloses:

a. based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 22, Neitzel further discloses:

a. determining an occurrence of a tapping event based on a tapping based on taps in the sequence and periods of time between successive taps read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as -well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

Cordova further teaches:

b. score based on tapping read on 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current - behavior rating, and/or other similar features).

As to claim 23, Neitzel further discloses:

a. based on the received signals, determining an orientation of the mobile device or a display

screen of the mobile device during the possible distraction episode read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may la.st several seconds).

As to claim 24, Neitzel further discloses:

a. based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode read on 0043, (such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time, period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 25, Neitzel further discloses:

a. the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and the context of the possible distraction episode comprises the mobile device being in the conveyance read or 0043 & 0079, (which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. x for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera -which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 26, Neitzel further discloses:

a. which the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and the context of the possible distraction read on 0069 — 0074, if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the

device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from_ a time period specified during step 310). Control then passes to step 315. If at step 355, the probabilistic state-based logic 102 determines, through thermal image signature matching, that the user of the device 100 is not a front seat occupant, then control passes to step 360 wherein the state-based logic 102 executes in accordance with a "passenger in possession" operating mode. During step 360, while in the possession of a passenger, the state-based logic 102 exhibits the following exemplary behaviors: 1. Allow normal operation for voice, data, and text for a specified "hysteresis" time duration (tb); 2. Maintain a running log of thermal sensor data for a specified time duration (td); 3. Maintain a running log of speed for a specified time duration (tc); and 4. Maintain a running log of device positional data for a specified time duration (tz)). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525 it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 27, Neitzel further discloses:

a. the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ear of an occupant of the conveyance read on 0020, 0045 & 0050, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver). At step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. This distinction is generally a result of the diffusion of heat on a windshield—as opposed to the back of a front seat where various combinations of obstructions (e.g. head rests) within the captured field of view of the lens 112 result in greater variances in the upper portion of the lens 112 field of view (when the device 100 is properly oriented during image capture)).

As to claim 28, Neitzel further discloses:

a. the display screen of the mobile device faces generally downwardly, and the context of the possible distraction episode comprises the mobile device not being used read on 0007, (variety of measures have been implemented to address driver distraction-related accidents arising from mobile -wireless device usage by drivers, a superior method and apparatus are described herein that provides a sensor/signal/image based solution to a need to ensure that mobile wireless devices are not used in inappropriate settings).

As to claim 29, Neitzel further discloses:

a, reporting the distraction context and the possible distraction episode to a user of the mobile device read on 0037, (if the .limitations definition 104 calls for a provided application service functionality to be disabled in the currently determined physical operating environment, then the mobile wireless device 100 takes a prescribed remedial action

disabling/deactivating the services/functionality, issuing a warning or audible instruction, recording an unsafe usage event, activating a timer to take a further action to limit further usage of a service/functionality, etc.) in accordance with the limitations definition 104 stored within memory on the mobile, wireless device 100).

As to claim 30, Cordova further teaches:

a. scoring the possible distraction episode using the distraction context read on 0056, (once an estimate is completed by some embodiments, a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated.. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving)).

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims, or (d) canceled one or more claims does not mean that the applicant disclaims or relinquishes any such claim or any other claim or their features.

The applicant does not relinquish the subject matter of and reserves the right to pursue, in this prosecution and in the prosecution of other patent applications, these claims, other claims not presented in this prosecution (including narrower and broader claims), claims to other features, previously presented claims, and previous versions of presented claims.

Apply any necessary charges or credits to deposit account 06 1050, referencing the above attorney docket number.

Respectfully submitted,

Date:/10/30/19/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23952775.docx

Electronic Acknowledgement Receipt

EFS ID:	37600298
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	David L Feigenbaum/Cathy O'Brien
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	44355-0046001
Receipt Date:	30-OCT-2019
Filing Date:	06-MAY-2019
Time Stamp:	07:26:40
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		Reply.pdf	160466 d4ebd1d640ea16367140edbe1516e23a54c4c861	yes	17

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	17
Warnings:			
Information:			
	Total Files Size (in bytes):	160466	

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.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 10/30/2019
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
10/30/2019	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Petitioner Ex 1002, p. 157
Zendrive v. CMT, IPR2023-01440

Applicant-Initiated Interview Summary	**Application No.** 16/403,761	**Applicant(s)** Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	**Art Unit** 2689	**AIA (FITF) Status** Yes

All participants (applicant, applicants representative, PTO personnel):

(1) FEKADESELASSIE GIRMA. (3) _____.

(2) Christopher Reilly. (4) _____.

Date of Interview: 25 October 2019.

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.

Identification of prior art discussed: N/A.

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...)

Applicant clarify claim limitation to have two distinct distraction events which each events includes conditions described as in Fig. 3(for example). Applicant will clarify the claim language to reflect the invention..

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

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Petitioner Ex 1002, p. 158
Zendrive v. CMT, IPR2023-01440

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 examiners 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 applicants 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 applicants 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 examiners 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 examiners initials.

Attorney Docket Nos.: 44355-0046001
44355-0077001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application Nos.	:	16/403,761 & 16/403,776	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174 & 2346
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

INTERVIEW AGENDA

The applicant's representatives David Feigenbaum (Reg. No. 30,378) and Christopher Reilly (Reg. No. 74,063) wish to discuss the following:

1. The amendments to the claims and remarks made in the Reply to Action filed in App. No. 16/403,761 on October 17, 2019; and
2. The proposed amendments and remarks made in the enclosed draft Reply to Action in App. No. 16/403,776.

Petitioner Ex 1002, p. 160
Zendrive v. CMT, IPR2023-01440

DRAFT

Proposed amendments to the claims:

1. (currently amended) A method comprising

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip,

determining a possible distraction episode comprising a distraction of a user of the mobile device based on the received signals,

after the trip, presenting information about the possible distraction episode to a user who was a participant on the trip,

receiving from [[a]] the user who was a participant on the trip information expressly input by the user indicative of a circumstance of the trip, the information being received in response to the presenting of the information about the possible distraction episode to the user after the trip,

the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip,

automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, and

determining whether ~~that~~ the possible distraction episode was a relevant distraction episode based on the circumstances of the trip.

2. (original) The method of claim 1 in which the determining of a possible distraction episode comprises varying the rate at which possible distraction episodes are determined based on a parameter, and adjusting the parameter based on information received from users about whether possible distraction episodes were relevant distraction episodes.

3. (original) The method of claim 1 comprising determining two or more such possible distraction episodes based on the received signals, and aggregating the possible distraction episodes for a given user based on at least one of the following factors: types of possible distraction episodes, speeds associated with possible distraction episodes, types of roads, frequencies of roots traveled, or length of possible distraction episodes.

4. (original) The method of claim 3 comprising reporting information about the aggregated possible distraction episodes to the user.

5. (currently amended) A method comprising

Petitioner Ex 1002, p. 161
Zendrive v. CMT, IPR2023-01440

DRAFT

receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the received signals being indicative of a possible distraction episode and of ~~the~~ a context of the possible ~~phone~~ distraction episode,

determining a relevant distraction episode from the possible distraction episode, and

scoring the relevant distraction episode, the scoring comprising accounting for the context, the context including at least one of: speed, time of day, day of week, season, road type, weather conditions, direction of motion, movement or orientation of the mobile device, or tapping on a display screen of the mobile device and

showing ~~the~~ a user a score that resulted from the scoring and a location of a relevant distraction episode along a trajectory of the trip.

6. (canceled)

7. (original) The method of claim 5 comprising aggregating location information for relevant distraction episodes for two or more trips.

8. (original) The method of claim 5 comprising aggregating contexts of relevant distraction episodes.

9. (previously presented) The method of claim 5 comprising reporting aggregated contexts with respect to at least one of: speed distribution during relevant distraction episodes, orientations of mobile devices during relevant distraction episodes, and activity state distributions of mobile devices during relevant distraction episodes

10. (previously presented) A method comprising

reporting to a user of a mobile device an inference that the user was distracted by use of the mobile device during a distraction episode that occurred while the user was driving, and

receiving from the user information expressly input by the user indicative of whether the inference is correct, or, if incorrect, receiving from the user information expressly input by the user indicative of why the inference is incorrect.

11. (canceled)

12. (canceled)

13. (currently amended) The method of claim ~~12~~ 5 in which the context comprises at least one of: the mobile ~~phone~~ device was mounted on ~~the car~~ a vehicle; the user was holding the mobile ~~phone~~ device and the display was facing the user; and the mobile ~~phone~~ device was being held by the user near the user's ear.

Petitioner Ex 1002, p. 162
Zendrive v. CMT, IPR2023-01440

DRAFT

14. (currently amended) The method of claim ~~12~~ 5 in which ~~the~~ a state of operation of the mobile ~~phone~~ device inherently specifies the context.

15. (currently amended) A method comprising

presenting to a user of a mobile ~~phone~~ device through a user interface of the mobile ~~phone~~ device information about distraction associated with use of the mobile ~~phone~~ device while the user was driving a vehicle,

the information being presented on a map showing a trajectory of a trip in which the distraction occurred, and

receiving feedback ~~from~~ expressly input by the user about accuracy of the information presented on the map.

16. (currently amended) A method comprising

receiving from a mobile ~~phone~~ device a time sequence of information about angular velocity of the mobile ~~phone~~ device,

detecting peaks of angular velocity along one or more axes relative to the mobile ~~phone~~ device, the peaks comprising at least a first peak and a second peak, the first peak and the second peak occurring in different directions relative to an axis of the mobile device, and

determining that tapping is occurring on a screen of the mobile device based on the peaks.

17. (original) The method of claim 16 in which the peaks comprise related peaks that occur along two orthogonal axes.

18. (original) The method of claim 16 in which the determining comprises analyzing a frequency of the tapping.

19. (original) The method of claim 16 in which the determining comprises comparing the detected peaks with comparison peaks known to be associated with tapping.

20. (currently amended) The method of claim 16 comprising detecting states of operation of the mobile ~~phone~~ device and in which the determining is based on the states of operation.

DRAFT

DRAFT REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (presented in small, boldfaced type and not necessarily in their original order).

4. Claims 13 and 14 are rejected under 35 U.S.C. 112(b), as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor.

5. Claim 13 and 14 are rejected since they are depending from a cancelled claim "Claim 12." Appropriate correction required.

6. Claim 13 recites the limitations "the context, the mobile phone, the user, the display" in claim 13. There are insufficient antecedent basis for these limitations in the claim.

7. Claim 14 recites the limitations "the state of operation, the context, the mobile phone," in claim 13. There are insufficient antecedent basis for these limitations in the claim.

Fixed.

9. Claims 1-14 are provisionally rejected again on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 16403761. Although the conflicting claims are not identical, they are not patentably distinct from each other because receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, determining a possible distraction episode based on the received signals, presenting information about the possible distraction episode to a user, receiving information from a user who was a participant on the trip indicative of a circumstance of the trip, the information being received in response to the presenting of the information about possible distraction episode, the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip, automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, determining that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip and scoring the relevant distraction episode, the scoring comprising accounting for the context, the context including at least one of: speed, time of day, day of week, season, road type, weather conditions, direction of motion, movement or orientation of the mobile device, or tapping on a display screen of the mobile device. The above listed items are all conventional prior art features as evidences by the general and well known use of such.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter. In view of the above, it is noted that the instant application is broader in every aspect than the US patent application document and is therefore an obvious variant thereof, thus, allowing this would result in an unjustified or improper timewise extension of the "right to exclude" granted by a patent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Without conceding the examiner's position, the applicant will consider filing a terminal disclaimer once the examiner has identified claims that the examiner considers patentable.

12. Claims 13 & 14 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Neitzel (US 2016/0006860).

As to claim 13, Neitzel further discloses:

Petitioner Ex 1002, p. 164
Zendrive v. CMT, IPR2023-01440

DRAFT

a. which the context comprises at least one of: the mobile phone was mounted on the car; the user was holding the mobile phone and the display was facing the user; and the mobile phone was being held by the user near the user's ear read on 0029, (A LASER range finder 114 takes distance readings lateral to the device 100 to facilitate determining a side of a vehicle compartment within which the device 100 is currently being held (when properly oriented for taking a range reading). The device 100 is also equipped with a GPS antenna 116 and associated signal processing for receiving GPS signals and rendering a current geospatial location from the received signals).

As to claim 14, Neitzel further discloses:

a. which the state of operation of the mobile phone inherently specifies the context read on 0055, (based on the analysis of blocks 310-350, an estimate of the level of driver inattentiveness during a particular time period may be estimated. In some embodiments, this estimate is made using approaches described in the Incorporated Applications with respect to other driving behaviors).

Claims 13 and 14 are patentable for at least the reasons given below for claim 5, on which they depend.

15. Claims 1-4 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel (US 2016/0006860) in view of Cordova (US 2017/0105098) and further in view of Becker.

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip read on 0039, (the initial gating condition for limiting driver usage of application services/functionality on the mobile wireless device 100 is whether the device 100 is being used within a moving motor vehicle. Thus, during step 300, the mobile wireless device 100 determines parameter values indicative of motion characteristics of a mobile wireless device. The motion characteristic-related parameter values are acquired by self-contained sensors on the mobile wireless device 100 over a specified time duration (tx) configured in the accelerometer timer duration 200 (e.g. 0.3 seconds));

b. determining a possible distraction episode based on the received signals read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100);

c. receiving from a user who was a participant on the trip indicative of a circumstance of the trip, the information being received in response to the presenting of the information about possible distraction episode, the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip, automatically determining that the user of the mobile device during the possible distraction episode was not the driver of the trip, and determining that the possible distraction episode was a relevant distraction episode based on the circumstances of the trip read on 0079, (two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera, which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle. After satisfactory measurements have been acquired using the LASER range finders to render a useful

Petitioner Ex 1002, p. 165
Zendrive v. CMT, IPR2023-01440

DRAFT

position signature (for identifying one of the potential front seat positions), control then passes to step 370).

The applicant respectfully disagrees. The cited paragraph of Neitzel described "using embedded LASERs on the mobile wireless device 100 to render a set of lateral LASER range determinations" to determine "if the device is in the possession of the driver" (¶ 0079). Thus, Neitzel described receiving information from LASERs embedded on a mobile device, not "receiving from the user who was a participant on the trip information expressly input by the user indicative of a circumstance of the trip."

Also, even if the cited portions of Neiztel were to describe receiving information expressly input by the user (which the applicant disputes), at no point did the cited portions of Neitzel describe that the information is "received in response to the presenting of the information about the possible distraction episode to the user after the trip," as recited in the applicant's claim 1 (emphasis added). Instead, paragraph 0079 of Neitzel described that the information is received in response to "the probabilistic state-based logic 102 determin[ing] that the user of the device 100 is in a front seat."

Neitzel does not explicitly disclose presenting information about the possible distraction episode to a user.

As explained above, there are also other features of the applicant's amended claim 1 that were not described by the cited portions of the Neitzel reference.

However, Cordova in tracking and evaluating the inattention of drivers teaches:

d. presenting information about the possible distraction episode to a user read on 0033 & 0062, (notification block 140 reports the results of analysis of sensor data performed by the data processing block 120 to a user of the mobile device 101 via a display. An alert can be generated to the user regarding the filtered device usage movements. For example, an audio alert or textual notification can be made to the user regarding the length of time the user was using the device during the trip).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to provide a systems and methods for detecting and assessing distracted drivers in a framework for measuring inattentiveness and informing and reports the results of analysis using easy-to-understand rating for different levels of distraction.

Yet the cited portions of Cordova, much like the cited portions of Neitzel, did not describe or make obvious at least "receiving from the user who was a participant on the trip information expressly input by the user indicative of a circumstance of the trip, the information being received in response to the presenting of the information about the possible distraction episode to the user after the trip."

DRAFT

Neitzel in view of Cordova does not explicitly disclose presenting information about distraction after the trip and information expressly input by the user.

As explained above, there are also other features of the applicant's amended claim 1 that were not described by the cited portions of the Neitzel and Cordova references.

However, Becker further in detecting distracted driver patterns for safe vehicle navigation teaches:

e. presenting information about distraction after the trip read on 0011, (vehicle 100 can be driving autonomously and can automatically take steps to avoid getting near vehicle 104 (e.g., without driver input). For example, vehicle 100 can automatically move into lane 110, slow down to create further distance with the other vehicle, safely drive past vehicle 104, stay out of vehicle 104's blind spots, notify the driver or any third party, or allow the driver to take over driving operations);

The applicant respectfully disagrees. The cited portions of Becker described actions that a vehicle (100) can take during a trip once it is determined that another vehicle (104) is being driven by a distracted or unsafe driver (¶ 0011). In contrast, the applicant's claim 1 requires that information about the possible distraction episode be presented to the user "after the trip." Thus, the cited portions of Becker did not describe and would not have made obvious at least this claimed feature.

f. expressly input by the user indicative of why the inference is correct/incorrect read on 0010 & 0015, (the driver of vehicle 100 can provide feedback to the vehicle's automated distracted driver classifications during driving operations to enhance the system's accuracy in identifying distracted drivers. For example, the driver can confirm or reject a distracted driver classification for additional machine learning. In some examples, the driver can enter this feedback through a control system such as buttons, a touch screen, a computer, a smart phone, or any device or system that allows user input to be entered. In some examples, the driver can manually classify another vehicle has being driven by a distracted driver. In some examples, the known distracted driver patterns can be updated through system updates. The known patterns of drivers performing distracted activities can be expanded through system updates and/or further fine-tuned through user feedback (e.g., through machine learning as described with reference to FIG. 1). For example, the user can confirm or reject that an image (or video) of another driver shows that the other driver is distracted. In some examples, the vehicle can track, without driver input, the number of distracted driver indications, or any other indications that a driver is distracted or otherwise dangerous for each vehicle in the vicinity at 204 (e.g., by counting the indications, measuring the duration of the indications, measuring the frequency of the indications, etc.).

The applicant respectfully disagrees. Claim 1 recites, in part, that "information expressly input by the user indicative of a circumstance of the trip" is received "in response to the presenting of the information about the possible distraction episode after the trip" (emphasis added). In contrast, the cited portions of Becker described that "the driver of vehicle 100 can provide feedback to the vehicle's driver classifications during driving operations to enhance the system's accuracy in identifying distracted drivers" (emphasis added). Thus, unlike the

DRAFT

applicant's claim 1 in which information is expressly input by the user after the trip, the cited portions of Becker only described user input during driving operations.

Also, claim 1 recites that the information expressly input by the user is "indicative of a circumstance of the trip," which comprises "the user of the mobile device during the possible distraction episode not being a driver of the trip." However, the cited portions of Becker described that the user can input feedback to aid the system in classifying another vehicle as being driven by a distracted driver ("[f]or example, the user can confirm or reject that an image (or video) of another driver shows that the other driver is distracted"). At no point did the cited portions of Becker describe "receiving from the user information expressly input by the user indicative of a circumstance of the trip" as recited in claim 1.

> **Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the distracted driver detection, classification, warning, avoidance system of Becker into Hampihol in order to provide a precautionary actions after determining that vehicle is being driven by a distracted or unsafe driver and drive the vehicle autonomously and can automatically take steps to avoid getting an accident.**

Even if it had been obvious to incorporate the noted features of Becker and Cordova into Neitzel, as presumably suggested by the examiner, the combination of features recited in the applicant's claim 1 could not have been obvious because the following feature was not described in the cited portions of any of the three references:

> "after the trip, presenting information about the possible distraction episode to a user who was a participant on the trip,
> receiving from the user who was a participant on the trip information expressly input by the user indicative of a circumstance of the trip, the information being received in response to the presenting of the information about the possible distraction episode to the user after the trip,
> the circumstance of the trip comprising the user of the mobile device during the possible distraction episode not being a driver of the trip."

> **16. Claim 5 and 7-9 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel in view of Cordova and further in view of Sathyanarayana (US 2018/0075309).**
>
> **As to claim 5, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:**
>
> **a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the received signals being indicative of a possible distraction episode and of the context of the possible phone distraction episode, determining a relevant distraction episode from the possible distraction episode read on 0019, (during a vehicle motion detection (first) stage, the device uses on-device sensors (accelerometers) to detect that the mobile wireless device is within a moving vehicle. After detecting the device operation within a moving vehicle, the mobile device enters a speed detection (second) stage wherein external signals, such as Global Positioning System (GPS) signals, are analyzed to render a vehicle**

DRAFT

speed value (e.g., average speed) over an interval. If the (average) speed value is sufficiently high, then the mobile wireless device invokes operations associated with yet another operating environment detection (third) stage wherein the mobile wireless device determines whether the mobile wireless device is currently in the physical possession of the vehicle driver. Such environment detection is based, for example, upon image scan profile data acquired by an imaging element (e.g., infrared camera) embedded within the mobile wireless device. If the mobile wireless device concludes, based upon the acquired image scan profile data, that the device is in the possession of the vehicle driver, then the mobile wireless device enters a driver-in-possession operating mode).

Cordova further teaches

b. scoring the relevant distraction episode, the scoring comprising accounting for the context, the context including at least one of: speed, time of day, day of week, season, road type, weather conditions, direction of motion, movement or orientation of the mobile device, or tapping on a display screen of the mobile device and showing the user a score that resulted from the scoring read on 0058, (the movements of the device are classified as device usage movements based on characteristics of the device movements. Device usage movements as used herein refer to movements of the device that are indicative of usage of the device by the user. Exemplary characteristics include changes in angle of the device with respect to gravity. Alternatively or additionally, the device movements may be classified as device usage movements based on a comparison of the device movements to stored movements that are known or confirmed to be device usage movements. Alternatively or additionally, the device movements may be classified as device usage movements if the number of device movements is above a threshold number. For example, if the device moves 10 times in 30 seconds, the movements may be classified as device usage movements, because the probability of the device moving that many times in that time period without usage is low).

Neitzel in view of Cordova does not explicitly disclose a location of a relevant distraction episode along a trajectory of the trip.

However, Sathyanarayana in near-crash detection in the automotive analysis field

c. location of a relevant distraction episode along a trajectory of the trip read on 0031, (determining a risk map for a vehicle S100 functions to determine a collision risk for each of a plurality of sub-regions (e.g., locations, positions) within a physical region proximal the vehicle (e.g., monitored region). The risk map (e.g., Safety Assessment Map.TM. or SAM) is preferably dynamically generated or updated in real-time, near-real time, at a predetermined frequency, or at any other suitable time, but can be predetermined (e.g., static) and retrieved based on a driving parameter value (e.g., driver identifier, vehicle identifier, geographic location, refresh frequency, etc.), or otherwise determined. The risk map is preferably determined by a computing system onboard the vehicle (e.g., a vehicle ECU, vehicle processor, auxiliary processor on the vehicle, etc.), but can alternatively be determined by a remote computing system, a local user device, or by any other suitable system, wherein the sampled sensor signals can be transmitted to the remote system for analysis).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the system and methods for near-crash determination of Sathyanarayana into Neitzel in view of Cordova in order to determine the risk metric for the monitored region.

The applicant respectfully disagrees. Paragraph 0031 of Sathyanarayana described generating a "risk map" for a vehicle. However, at no point did the cited portions of Sathyanarayana describe that the "risk map" shows the user "a location of a relevant distraction episode along a trajectory of the trip," as recited in the applicant's claim 5. Instead, the cited

Petitioner Ex 1002, p. 169
Zendrive v. CMT, IPR2023-01440

DRAFT

portions of Sathyanarayana described that the risk map "functions to determine a collision risk for each of a plurality of sub-regions…within a physical region proximal the vehicle." Thus, even if it had been obvious to incorporate the noted features of Sathyanarayana and Cordova into Neitzel, as suggested by the examiner, the combination of features recited in the applicant's claim 5 could not have been obvious because none of the references described "showing a user a score that resulted from the scoring and a location of a relevant distraction episode along a trajectory of the trip."

17. Claims 10 is rejected under 35 U.S.C. 103 as being unpatentable over Hampiholi (US 2016/0267335) in view of Becker (US 2018/0144636).

As to claim 10, Hampiholi discloses in driver distraction detection system having claimed

a. reporting to a user of a mobile device an inference that the user was distracted by use of the mobile device during a distraction episode that occurred while the user was driving, and receiving from the user information indicative of whether the inference is correct, or, if incorrect, receiving from the user information indicative of why the inference is incorrect read on 0057, (at 412, the method checks if the calculated severity rank R is within a first range. The first range may be a value of severity rank R that indicates a relatively low level of severity of the driver distraction. For example, the first range may correspond to an indication of driver distraction while the vehicle is not in any immediate danger of collision, an indication of driver distraction that is predicted to be short-lived, etc. If the severity rank is in the first range (e.g., "YES" at 412), then the method proceeds to 414, where the head unit instructs a display device to present a visual warning. A visual warning may include, but is not limited to, a warning displayed on the heads up display or on the main infotainment screen. If the severity rank R is not within the first range, then the method proceeds to 416, where the system determines if R is in the second range. For example, the second range may correspond to a relatively medium level of severity of driver distraction. An example medium level of severity may include a serious driver distraction (e.g., droopy eyes indicating sleepiness) while the vehicle is in an otherwise safe environment (e.g., no objects within a trajectory/path of the vehicle, driving at a low speed, etc.). If the severity rank R is within the second range (e.g., "YES" at 416), then the method proceeds to 418, where the head unit instructs an audio playback device to present an audio warning. In one example, an audio warning may be played on all the available audio zones in the system. If at 416, it is determined that R is not within the second range, then the method proceeds to 420, where the system checks if R is within the third range. The third range may correspond to a relatively high level of severity of driver distraction. An example high level of severity of driver distraction may include any driver distraction while an object in a vehicle environment is on a colliding course with the vehicle (e.g., an estimated trajectory of the object intersects with an estimated trajectory of the vehicle). If the severity ranking R is within the third range (e.g., "YES" at 420), then the method proceeds to 422, where the head unit instructs a vehicle system to perform engine control operations or other vehicle control operations).

Hampiholi does not explicitly disclose expressly input by the user.

However, Becker in detecting distracted driver patterns for safe vehicle navigation teaches:

b. expressly input by the user indicative of why the inference is correct/incorrect read on 0010 & 0015, (the driver of vehicle 100 can provide feedback to the vehicle's automated distracted driver classifications during driving operations to enhance the system's accuracy in identifying distracted drivers. For example, the driver can confirm or reject a distracted driver classification for additional machine learning. In some examples, the driver can enter this feedback through a control system such as buttons, a touch screen, a computer, a smart

Petitioner Ex 1002, p. 170
Zendrive v. CMT, IPR2023-01440

DRAFT

> **phone, or any device or system that allows user input to be entered. In some examples, the driver can manually classify another vehicle has being driven by a distracted driver. In some examples, the known distracted driver patterns can be updated through system updates. The known patterns of drivers performing distracted activities can be expanded through system updates and/or further fine-tuned through user feedback (e.g., through machine learning as described with reference to FIG. 1). For example, the user can confirm or reject that an image (or video) of another driver shows that the other driver is distracted. In some examples, the vehicle can track, without driver input, the number of distracted driver indications, or any other indications that a driver is distracted or otherwise dangerous for each vehicle in the vicinity at 204 (e.g., by counting the indications, measuring the duration of the indications, measuring the frequency of the indications, etc.).**

The applicant respectfully disagrees. The cited portions of Becker described that "the driver of vehicle 100 can provide feedback to the vehicle's driver classifications during driving operations to enhance the system's accuracy in identifying distracted drivers." In particular, Becker described that a user "can confirm or reject a distracted driver classification for additional machine learning" (¶ 0010). However, at no point did the cited portions of Becker describe "receiving from the user information expressly input by the user indicative of *why* the inference is incorrect," as recited in claim 10 (emphasis added).

Also, claim 10 recites that the inference that is the subject of the user information expressly input by the user is "an inference that the user was distracted by use of the mobile device." However, the cited portions of Becker described that the user can input feedback to aid the system in classifying *another* vehicle as being driven by a distracted driver ("[f]or example, the user can confirm or reject that an image (or video) of another driver shows that the other driver is distracted"). Thus, the user input described in Becker relates to the distraction of another driver, not "an inference that the user was distracted by use of the mobile device during a distraction episode that occurred while the user was driving," as recited in claim 10.

> **Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the distracted driver detection, classification, warning, avoidance system of Becker into Hampihol in order to provide a precautionary actions after determining that vehicle is being driven by a distracted or unsafe driver and drive the vehicle autonomously and can automatically take steps to avoid getting an accident.**

Even if it had been obvious to incorporate the noted features of Becker into Hampiholi, as suggested by the examiner, the combination of features recited in the applicant's claim 10 could not have been obvious because the following feature was not described in the cited portions of either reference:

> "receiving from the user information expressly input by the user indicative of whether the inference is correct, or, if incorrect, receiving from the user

Petitioner Ex 1002, p. 171
Zendrive v. CMT, IPR2023-01440

DRAFT

information expressly input by the user indicative of why the inference is incorrect."

18. Claim 15 is rejected under 35 U.S.C. 103 as being unpatentable over Levkova (US 2018/0126901) in view of Aggarwal (US 2019/0159166).

As to claim 15, Levkova discloses in system and method for driver distraction determination having claimed:

a. presenting to a user of a mobile phone through a user interface of the mobile phone information about distraction associated with use of the mobile phone while the user was driving a vehicle, the information being presented on a map showing a trajectory of a trip in which the distraction occurred read on Fig. 4 & 0006, (FIG. 4 is a schematic representation of an example route associated with a plurality of determined driver distraction scores for each of a plurality of locations traversed by the vehicle along the route, as determined for a driving session. Identifying the distraction event based on the distraction factor values (e.g., the imminent, occurring, or previously occurred distraction event) can all be performed by the onboard system, while distraction event verification and application to other processes (e.g., postprocessing into a distraction heat map, filtering driving routes for optimal routes, etc.) can be performed by the remote computing system. In this variation, the on-board system can transmit sensor measurements associated with the distraction event (e.g., sensor measurements recorded before, during, and/or after the distraction event), derivative information associated with the distraction event (e.g., derivative information generated from one or more sensor or other input types), distraction event parameter values (e.g., time, driver, location, severity, etc.), or any other suitable information to the remote computing system).

Levkova does not explicitly disclose receiving feedback from the user about accuracy of the information presented on the map.

However, Aggarwal in human-to-computer dialogs with interactive software teaches:

b. receiving feedback from the user about accuracy of the information presented on the map read on 0001, (the automated assistant may reiterate the received input from the user to ensure the accuracy of the received input. When such interactions take place while the user is engaged in an activity, such as driving a vehicle, the user can become distracted, thereby creating a dangerous situation for the user).

The applicant respectfully disagrees and, without conceding the examiner's position, has added the phrase "expressly input by the user" in claim 15. In contrast, the cited portion Aggarwal described that the *automated assistant* reiterated the received input to ensure the accuracy of the received input. Thus, the cited portions of Aggarwal did not describe and would not have made obvious receiving feedback "expressly input by the user" as recited in amended claim 15.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the dynamically adapting provision of notification output to reduce user distraction and/or mitigate usage of computational resources of Aggarwal into Kelly in order to provide feedback to a vehicle service providers regarding their vehicles and/or their services and improve their product accuracy.

The cited portions of neither of the two references, Levkova or Aggarwal, described receiving feedback "expressly input by the user about accuracy of information presented on a map." Therefore, even if it had been obvious to have combined features of the references (which

Petitioner Ex 1002, p. 172
Zendrive v. CMT, IPR2023-01440

DRAFT

the applicant disputes), the result could not have been the combination of features recited in the applicant's claim 15.

> **19. Claims 16, 17, 19 & 20 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel (US 2016/0006860) in view of Ahuja (US 2014/0168057).**
>
> **As to claim 16, Neitzel further discloses:**
>
> **a. receiving from a mobile phone a time sequence of information about angular velocity of the mobile device read on 0026, (incorporated into the mobile wireless device 100 are sufficiently sensitive and responsive to facilitate record minute changes within very short time frames--e.g., vibrations attributable to wheeled vehicle movement. The data stream rendered by the gyroscope 108 indicates an angular change/rate, whereas each data stream from the accelerometer 106 indicates a linear acceleration in a given direction).**
>
> **Neitzel does not explicitly disclose detecting peaks of angular velocity along one or more axes relative to the mobile phone, and determining that tapping is occurring on a screen of the mobile device based on the peaks.**
>
> **However, Ahuja in frequently process the incoming sensor data to provide an enhanced user experience teaches:**
>
> **b. detecting peaks of angular velocity along one or more axes relative to the mobile phone, and determining that tapping is occurring on a screen of the mobile device based on the peaks read on 0093, (TDM 805 monitors the tap start time and outputs a result to tap direction module 820. TDM 805 may use the early rise of the jerk or angular acceleration peak in order to determine tap direction (e.g., left from right, top from bottom). TDM 805 can seek to find not only the signal resembling a tap start).**
>
> **Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the Gyro Aided Tap Gesture Detection of Ahuja into Neitzel in order to provide an enhanced user experience and for accurate gesture reading and prevent false positives.**

Without conceding the examiner's position, the applicant has amended claim 16 to include the phrase "the peaks comprising at least a first peak and a second peak, the first peak and the second peak occurring in different directions relative to an axis of the mobile device." This feature was not described and would not have been obvious from the cited portions of the Neitzel and Ahuja references, as neither of these references described detecting peaks of angular velocity along one or more axes relative to the mobile phone device, the peaks comprising at least a first peak and a second peak, the first peak and the second peak occurring in different directions relative to an axis of the mobile device.

> **As to claim 2, Cordova further teaches:**
>
> **a. which the determining of a possible distraction episode comprises varying the rate at which possible distraction episodes are determined based on a parameter, and adjusting the parameter based on information received from users about whether possible distraction episodes were relevant distraction episodes read on 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As**

Petitioner Ex 1002, p. 173
Zendrive v. CMT, IPR2023-01440

DRAFT

described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current behavior rating, and/or other similar features)).

As to claim 3, Neitzel further discloses:

a. determining two or more such possible distraction episodes based on the received signals, and aggregating the possible distraction episodes for a given user based on at least one of the following factors: types of possible distraction episodes, speeds associated with possible distraction episodes, types of roads, frequencies of roots traveled, or length of possible distraction episodes read on 0019, (During a vehicle motion detection (first) stage, the device uses on-device sensors (accelerometers) to detect that the mobile wireless device is within a moving vehicle. After detecting the device operation within a moving vehicle, the mobile device enters a speed detection (second) stage wherein external signals, such as Global Positioning System (GPS) signals, are analyzed to render a vehicle speed value (e.g., average speed) over an interval. If the (average) speed value is sufficiently high, then the mobile wireless device invokes operations associated with yet another operating environment detection (third) stage wherein the mobile wireless device determines whether the mobile wireless device is currently in the physical possession of the vehicle driver. Such environment detection is based, for example, upon image scan profile data acquired by an imaging element (e.g., infrared camera) embedded within the mobile wireless device).

As to claim 4, Neitzel further discloses:

a. reporting information about the aggregated possible distraction episodes to the user read on 0056, (As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current behavior rating, and/or other similar features)).

As to claim 7, Neitzel further discloses:

a. aggregating location information for relevant distraction episodes for two or more trips read on 0042, (During step 320 the probabilistic state-based logic 102 activates GPS signal acquisition/processing for rendering a geospatial location (and speed) based on a stream of signals provided from the GPS antenna 116 on the device 100 and uses a subsequently received GPS signal data stream to resolve speed and direction of movement of the mobile wireless device 100. Such GPS signal acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example, a time-ordered sequence of GPS measurements, over a specified time duration (ty), are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty).

As to claim 8, Neitzel further discloses:

a. aggregating contexts of relevant distraction episodes read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds. In the case of spatial/temporal patterns, the sensing of multiple deliberate touches at different locations within a short period of time may be interpreted to be consistent with text or gaming input. A data input determined to be a recognized word would indicate use of a text interface. Other ways to detect usage of the device 100 in a way requiring the user to view the display of the device are also contemplated).

DRAFT

As to claim 9, Neitzel further discloses:

a. reporting aggregated contexts with respect to at least one of: speed distribution during relevant distraction episodes, orientations of mobile devices during relevant distraction episodes, and activity state distributions of mobile devices during relevant distraction episodes read on 0024, (sensors to acquire motion-related information sufficient to enable the decision logic of the mobile wireless device to determine whether the device is currently moving at a sustained speed exceeding a prescribed threshold speed. An accelerometer 106 measures the gravitational pull (acceleration) on three axes: x, y, and z. The accelerometer 106 gauges an orientation of a stationary platform relative to the Earth's surface. If the device 100 is in free fall, then acceleration measured by the accelerometer 106 will be shown to be zero).

As to claim 17, Ahuja further teaches:

a. which the peaks comprise related peaks that occur along two orthogonal axes read on 0086, (if the highest jerk or angular acceleration magnitude is recorded along the X-axis, and two lower magnitude jerks or angular acceleration are recorded along the Y-axis and the Z-axis, a determination may be made that the tap occurred on the X-axis even if the Y-axis and Z-axis may each individually meet their respective minimum signal thresholds).

As to claim 19, Ahuja further teaches:

a. which the determining comprises comparing the detected peaks with comparison peaks known to be associated with tapping read on 0034, (Accelerometers are useful for their low power use characteristics. However, factors such as accelerometer sensor placement in the device 100, orientation of the device and sensitivity to user behavior may affect the accuracy of an accelerometer used to detect a tap. Therefore, in one embodiment, the addition of a gyroscope along with the accelerometer can improve the detection of a tap).

As to claim 20, Ahuja further teaches:

a. detecting states of operation of the mobile phone and in which the determining is based on the states of operation read on 0007, (the method may comprise determining an occurrence of a tap at a mobile device based on the results of the processing).

20. Claim 18 is rejected under 35 U.S.C. 103 as being unpatentable over Neitzel in view of Ahuja and further in view of Cordova.

As to claim 18, Neitzel in view of Ahuja does not explicitly disclose which the determining comprises analyzing a frequency of the tapping.

However, Cordova in tracking and evaluating the inattention of drivers teaches:

a. which the determining comprises analyzing a frequency of the tapping read on 0063, (Device touch movements as used herein are movements of the device indicative of touching the device by the user. For example, when a user interface of the device is repeatedly tapped by a driver, it can cause a frequency vibration in some degree that may be detectable by movements sensors, such as an accelerometer or gyroscope. In one example, an alert can be generated to the user regarding the device touch movements).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in view of Ahuja in order to provide a systems and methods for detecting and assessing distracted drivers in a framework for measuring inattentiveness and informing and reports the results of analysis using easy-to-understand rating for different levels of distraction.

All of the dependent claims are patentable for at least similar reasons as those given for the claims on which they depend.

Petitioner Ex 1002, p. 175
Zendrive v. CMT, IPR2023-01440

DRAFT

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims, or (d) canceled one or more claims does not mean that the applicant disclaims or relinquishes any such claim or any other claim or their features. The applicant does not concede the correctness or appropriateness of any of the examiner's comments including interpretations or constructions of claim language, interpretations of portions or all of cited references, or statements about legal doctrines or applicable law.

The applicant does not relinquish the subject matter of and reserves the right to pursue, in this prosecution and in the prosecution of other patent applications, these claims, other claims not presented in this prosecution (including narrower and broader claims), claims to other features, previously presented claims, and previous versions of presented claims.

Petitioner Ex 1002, p. 176
Zendrive v. CMT, IPR2023-01440

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 16/403,761	Filing Date 05/06/2019	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/30/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 28	Minus	** 30	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

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

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

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

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.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 11/04/2019
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
11/04/2019	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Petitioner Ex 1002, p. 178
Zendrive v. CMT, IPR2023-01440

Office Action Summary	Application No. 16/403,761	Applicant(s) Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	AIA (FITF) Status Yes

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

Period for Reply

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

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

Status

1)☑ Responsive to communication(s) filed on 10/17/2019.

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

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

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

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

Disposition of Claims*

5) ☑ Claim(s) 1-6,8-12 and 14-30 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) 1-6,8-12 and 14-30 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 _____ 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

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. Claims **1-6, 8-12 and 14-30** are presented for examination on the merits.

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. Claims **1-6, 8-12 and 14-30** are rejected under 35 U.S.C. 103 as being unpatentable over **Neitzel (US 2016/0006860)** in view of **Cordova (US 2017/0105098)**.

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors read on ¶ 0008, (The mobile wireless device comprises a plurality of sensors for sensing: motion, thermal images in a field of view of a lens, and a side of a vehicle cabin);

b. at least an accelerometer and a gyroscope, using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device read on ¶ 0026, (the gyroscope 108 and accelerometer 106 provide complimentary motion data streams that aid determining a current physical status (e.g., motion speed, orientation) of the mobile wireless device 100);

c. based on the identified physical states, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver read on ¶ 0044 & ¶ 0047, (the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. The probabilistic state-based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/-a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used);

d. determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode

and determining that the possible distraction episode comprises a true distraction episode read on Fig. 3, ¶ 0092 – ¶ 0095, (during step 375, after determining the device 100 is in the possession of the driver, the state-based logic 102 implements, by way of example, the following: 1. Disabling application/device functions and/or interfaces based upon operator or government mandated options specified in the limitations definition 104; 2. Maintaining a running log of GPS-based device position changes (for determining an average speed) of the device 100 for a time interval having the time duration tc; and 3. If the average speed is greater than one (1) km/hr over the duration tc of the time interval (indicating that the vehicle is still moving), then maintaining disablement of functions and/or interfaces based upon operator or government mandated options; and returning control of the state-based logic 102 to the "start" of the exemplary set of operations and decisions summarized in FIG. 3 if the average speed over the interval is less than or equal to one (1) km/hr (i.e., the vehicle has effectively "stopped")). Neitzel does not explicitly disclose generating discrete events separated in time.

However, Cordova in track driving behaviors teaches:

e. generating discrete events separated in time read on ¶ 0052, (based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components and/or performed by different steps/components, processing block 350 has a dotted line to further emphasize the optional nature of this stage).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to detect and assesse distracted drivers and

provide the framework for measuring inattentiveness, and accurately predict actual device usage while driving to analyze collected driving data and assign scores based on different criteria.

As to claim 2, Neitzel further discloses:

a. in which the physical state comprises an operational state of the mobile device read on ¶ 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 3, Neitzel further discloses:

a. which the operational state comprises a state of locking of the mobile device read on ¶ 0102, (Screen lock--preventing viewing information/graphics on the display screen).

As to claim 4, Neitzel further discloses:

a. which the operational state comprises a state of a phone call read on ¶ 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications).

As to claim 5, Neitzel further discloses:

a. which the operational state comprises a power condition read on ¶ 0038, (having described the general functionality of the state-based logic 102, attention is now directed to the

particular exemplary steps, summarized in FIG. 3, carried out by a particular exemplary embodiment of the state-based logic 102. After power-on of the mobile wireless device 100).

As to claim 6, Neitzel further discloses:

a. which the operational state comprises an aspect of a foreground app running on the mobile device read on ¶ 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 8, Neitzel further discloses:

a. which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode read on ¶ 0040, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 9, Neitzel further discloses:

a. which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction read on ¶ 0040 & ¶ 0044, (During step 310 a configurable delay period timer is set (for executing a next

iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs. If at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315).

As to claim 10, Neitzel further discloses:

a. which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction read on ¶ 0040, (if the analyzed signal characteristics indicate that the device is not within a moving motor vehicle, then control passes to step 310. During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 11, Neitzel further discloses:

a. which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length read on ¶ 0042 – ¶ 0043, (Such GPS signal

acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example, a time-ordered sequence of GPS measurements, over a specified time duration (ty), are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty. Moreover, during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 12, Neitzel further discloses:

a. based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker read on ¶ 0020 & ¶ 0021, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver. Thus illustrative examples of the conditionally restricted mobile wireless device functionality only apply conditional service/function restrictions to a driver/operator of a moving vehicle. Determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or

more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features). On the other hand, if the device determines that the device is in the physical possession of a user positioned in a passenger seat, the device will allow full service/functional feature access by the passenger).

As to claim 14, Neitzel further discloses:

a. based on the received signals, determining a proximity of a user's hand to the mobile device read on ¶ 0021, (The mobile wireless device, without any aid by a user, determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features)).

As to claim 15, Neitzel further discloses:

a. based on the received signals, determining whether a display screen of the mobile device is being tapped read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 16, the claim is corresponding to claim 6. Therefore, the claim is rejected for the same rationales set forth for claim 6.

As to claim 17, Neitzel further discloses:

a. based on the received signals, determining a behavior of a conveyance being used for the trip read on ¶ 0036, (the exemplary state-based logic summarized in FIG. 3 operates on multiple,

conditionally activated/gated, data streams (recorded over a specified time window) from the embedded sensors (e.g., accelerometer, gyroscope, magnetometer, etc.), signal receivers (e.g., GPS signal receiver), and imaging/camera inputs (e.g., infrared fisheye camera/lens). The state-based logic, based upon specified configuration parameters and the conditionally applied data streams, makes a probabilistic determination whether the mobile wireless device 100 is operating in a particular one of multiple potential physical operating environments).

As to claim 18, Neitzel further discloses:

a. which determining the context of a possible distraction episode comprises: detecting a rotation of a display screen of the mobile device read on ¶ 0025 & ¶ 0028, (a gyroscope 108 measures a rate of rotation around a particular axis at an angular rate, and helps maintain orientation. The gyroscope 108, in the exemplary implementation, determines the X, Y, and Z orientations for a device. The mobile wireless device 100 includes, among other things, known data processing functionality that combines accelerometer, gyroscope, and magnetometer data to render a currently sensed orientation of the mobile wireless device 100. Each of these three sensors makes a unique contribution to the overall orientation sensing capabilities of the mobile wireless device 100).

As to claim 19, Neitzel further discloses:

a. detecting a tap on the display screen based on a parameter of the rotation read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 20, Neitzel further discloses:

a. based on the received signals, determining a frequency of taps on a display screen of the mobile device read on ¶ 0044, (if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335).

As to claim 21, Neitzel further discloses:

a. based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 22, Neitzel further discloses:

a. determining an occurrence of a tapping event based on a tapping based on taps in the sequence and periods of time between successive taps read on ¶ 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

Cordova further teaches:

b. score based on tapping read on ¶ 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may

provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current behavior rating, and/or other similar features).

As to claim 23, Neitzel further discloses:

a. based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode read on ¶ 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 24, Neitzel further discloses:

a. based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode read on ¶ 0043, (such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial,

temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 25, Neitzel further discloses:

a. the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and the context of the possible distraction episode comprises the mobile device being in the conveyance read on ¶ 0043 & ¶ 0079, (which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera, which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on ¶ 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle

during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 26, Neitzel further discloses:

a. which the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and the context of the possible distraction read on ¶ 0069 – ¶ 0074, (if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. If at step 355, the probabilistic state-based logic 102 determines, through thermal image signature matching, that the user of the device 100 is not a front seat occupant, then control passes to step 360 wherein the state-based logic 102 executes in accordance with a "passenger in possession" operating mode. During step 360, while in the possession of a passenger, the state-based logic 102 exhibits the following exemplary behaviors: 1. Allow normal operation for voice, data, and text for a specified "hysteresis" time duration (tb); 2. Maintain a running log of thermal sensor data for a specified time duration (td); 3. Maintain a running log of speed for a specified time duration (tc); and 4. Maintain a running log of device positional data for a specified time duration (tz)). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on ¶ 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 27, Neitzel further discloses:

a. the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and the context of the possible distraction episode comprises the mobile device being held in the vicinity of any [y]ear of an occupant of the conveyance read on ¶ 0020, ¶ 0045 & ¶ 0050, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver). At step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. This distinction is generally a result of the diffusion of heat on a windshield--as opposed to the back of a front seat where various combinations of obstructions (e.g. head rests) within the captured field of view of the lens 112 result in greater variances in the upper portion of the lens 112 field of view (when the device 100 is properly oriented during image capture)).

As to claim 28, Neitzel further discloses:

a. the display screen of the mobile device faces generally downwardly, and the context of the possible distraction episode comprises the mobile device not being used read on ¶ 0007, (variety of measures have been implemented to address driver distraction-related accidents arising from mobile wireless device usage by drivers, a superior method and apparatus are described herein that provides a sensor/signal/image based solution to a need to ensure that mobile wireless devices are not used in inappropriate settings).

As to claim 29, Neitzel further discloses:

a. reporting the distraction context and the possible distraction episode to a user of the mobile device read on ¶ 0037, (If the limitations definition 104 calls for a provided application service/functionality to be disabled in the currently determined physical operating environment, then the mobile wireless device 100 takes a prescribed remedial action (e.g., disabling/deactivating the services/functionality, issuing a warning or audible instruction, recording an unsafe usage event, activating a timer to take a further action to limit further usage of a service/functionality, etc.) in accordance with the limitations definition 104 stored within memory on the mobile wireless device 100).

As to claim 30, Cordova further teaches:

a. scoring the possible distraction episode using the distraction context read on ¶ 0056, (once an estimate is completed by some embodiments, a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving)).

Response to Arguments

5. Applicant's arguments with respect to claims 1-6, 8-12 and 14-30 have been considered but they are not persuasive.

a. Applicant argues:

The applicant respectfully disagrees, as the cited portions of Neitzel did not describe or make obvious "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1. Instead, the cited portions of Neitzel described a process for conditionally "[disabling application/device functions and/or interfaces based upon operator or government mandated options" (Fig. 3,]} 0092-0093). Neitzel described series of steps, outlined in Fig. 3, for detecting when to disable device functionality (e.g., after determining the device is in the possession of the driver of a moving vehicle). Once the criteria for disabling the device are met, Neitzel described that the device functions and/or interfaces remain disabled so long as the vehicle is in motion; otherwise, the system returns "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3". words, Neitzel detected a single instance for which the described criteria for disabling the device is met and did not attempt to detect another instance until after the vehicle had stopped and the process was allowed to restart. Thus, even if detecting when to disable device functionality, as in Neitzel, were considered to be determining a distraction episode (which the applicant disputes), Neitzel did not describe or make obvious determining a distraction episode that spans two or more of the discrete distraction events during the trip.

Examiner reply:

Neitzel discloses in ¶ 0042 as "the analyzed signal characteristics indicate that the device is within a moving motor vehicle, then control passes to step 320. During step 320, the mobile wireless device 100 commences reading and processing GPS readings to determine a current speed of the mobile wireless device 100." And ¶ 0043 as "Moreover, during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds." Fig. 3 also discloses the steps of several (more than two) distraction events including the mobile wireless is in the moving motor vehicle, determining GPS to determine if the mobile device speed, spatial/temporal patterns, the sensing of multiple deliberate touches at different locations within a short period of time may be interpreted to be consistent with text or gaming input and/or the device 100 in a way requiring the user to view the display of the device are also contemplated. Neitzel discloses the second distracted episode in ¶ 0045-¶ 0047 as "at step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. If the device 100 is traveling at an average speed insufficient to invoke device use limitations (e.g., average speed does not exceed 2 miles per hour), then control passes

to step 345. During step 345, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310 or during step 335). Control then passes to step 315. If however, at step 340 the sensed average speed of the device 100 is sufficient to invoke limiting usage of application services/functionality on the device 100, then control passes to step 350 wherein further processing steps are conditionally invoked to determine whether the device 100 is being used by a driver or a passenger in the moving motor vehicle. Use limitations are invoked only upon determination that the device 100 is currently being used by the driver of the moving vehicle, and thus further steps are taken to determine an actual physical position of the mobile wireless device 100 within the moving vehicle. During step 350, the mobile device 100 determines a device profile using a passive infrared camera for purposes of determining whether the device 100 is in the possession of a person in a front seat of a passenger cabin of the moving motor vehicle. During step 350, the probabilistic state-based logic 102 commences infrared thermal capture via the IRFPA camera/fisheye lens 112 that acquires passive infrared energy radiated from physical structures within a field of view. The capturing/logging of thermal image data, acquired at selected positions within a field of view, lasts for a time interval having a duration to (e.g. 2 seconds). In an exemplary embodiment, the fisheye lens 112 must be held at a particular location to facilitate capturing a proper set of thermal image data points for comparison to driver and passenger (distinct for front and back) profiles maintained within the thermal view signature database 118 of the mobile wireless device 100. Such proper positioning is determined, for example, by the processor 105 and logic 102 analyzing the data streams rendered by the accelerometer 106, gyroscope 108, and magnetometer 110. The probabilistic state-based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid

position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/-a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used. Other constraints and tolerances may be employed. Additionally and/or alternatively, the thermal image data point set acquired by the device 100 during step 350 may be used to determine proper orientation.

b. Applicant further argues:

The applicant respectfully disagrees. The cited paragraph of Cordova merely described that aggravating and/or mitigating factors are identified based on the time frame of the potentially distracting activity 0052). Identifying aggravating and/or mitigating factors during the same time frame of the potentially distracting activity is not equivalent to generating discrete distraction events separated in time, as recited in claim 1. The applicant respectfully disagrees, as Neitzel, alone or in combination with Cordova, neither described nor would have made obvious at least "determining a distraction episode that spans two or more of the discrete distraction events during the trip." As described above, the cited portions of Neitzel described detecting a single instance in which criteria for disabling features of a mobile device was met and did not attempt to detect another instance until the vehicle was stopped and the system returned "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (]} 0092-

0095). Thus, the cited portions of Neitzel did not describe "determining a distraction episode that spans two or more of the discrete distraction events during the trip," as recited in claim 1.

Examiner reply:

Neithzel further discloses in ¶ 0045 & ¶ 0046 as "If the device 100 is traveling at an average speed insufficient to invoke device use limitations (e.g., average speed does not exceed 2 miles per hour), then control passes to step 345. During step 345, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310 or during step 335). Control then passes to step 315. If however, at step 340 the sensed average speed of the device 100 is sufficient to invoke limiting usage of application services/functionality on the device 100, then control passes to step 350 wherein further processing steps are conditionally invoked to determine whether the device 100 is being used by a driver or a passenger in the moving motor vehicle." Time period/delay (item 310, 335 and 345). a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs. The triggering event could be a user requesting a service/functionality identified in the limitations definition 104. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. If the device 100 is traveling at an average speed insufficient to invoke device use limitations (e.g., average speed does not exceed 2 miles per hour), then control passes to step 345. During step 345, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310 or during step 335). Control then passes to step 315.

c. Applicant further argues:

Cordova similarly did not describe or make obvious the foregoing limitation of claim 1. For instance, paragraphs 0049-0056 and FIG. 3 of Cordova described that "the activity being performed with the mobile device 101 is estimated" and subsequently used to determine the level of driver inattentiveness and generate a score. Thus, Cordova described identifying a single instance of driver distraction, not "determining a distraction episode that spans two or more of the discrete distraction events during the trip."

Examiner reply:

Cordova further discloses in ¶ 0052 as "based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components and/or performed by different steps/components, processing block 350 has a dotted line to further emphasize the optional nature of this stage. This stage should not be interpreted to be more or less optional than other figure elements that do not have dotted lines." The potential mitigating factors include, but are not limited to: the slow speed of the vehicle at the time of the event, the experience of the driver, the lack of traffic on the road, and the like.

d. Applicant further argues:

As to claim 12, the claim is corresponding to claim 1, Therefore, the claim is rejected for the same rationales set forth for claim 1. The applicant respectfully disagrees. The limitations of claim 12 do not correspond to claim 1. Without conceding the examiner's position, the applicant

has amended claim 12 to recite "based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker." Neither Neitzel nor Cordova described or made obvious at least this feature of amended claim 12. For instance, paragraph 0020 of Neitzel described conditionally limiting "services/functionality of a mobile device," including "device-to-ear (hand-held) voice calls," but made no mention of determining that the mobile device is engaged in an active telephone call, let alone "determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker." Cordova described estimating "that driver 1340 is holding mobile device 101 to her ear, and thus making a phone call without use of a headset" (]} 0123-0124). However, estimating when a phone call is made without use of a headset, as described in Cordova, does not make obvious "determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker," as recited in amended claim 12.

Examiner reply:

Neitzel discloses in ¶ 0020 and ¶ 0021, as "Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver. Thus illustrative examples of the conditionally restricted mobile wireless device functionality only apply conditional service/function restrictions to a driver/operator of a moving vehicle. Determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device

disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features). On the other hand, if the device determines that the device is in the physical possession of a user positioned in a passenger seat, the device will allow full service/functional feature access by the passenger."

The examiner has considered the remark/presentation of claims in view of the disclosure and the present state of the prior art, and it is the examiner's position that the claims 1-22 are currently rejected for the reasons set forth in the above argument and this Office action.

For the above reasons, it is believed that the rejections should be sustained.

Citation of pertinent Prior Arts

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see PTO-892 Notice of References Cited.

Conclusion

7. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fekadeselassie Girma whose telephone number is (571) 270-5886. The examiner can normally be reached on M-F 8:30 am – 5pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Field can be reached on (571) 272-4090. 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.

/FEKADESELASSIE GIRMA/
Primary Examiner, Art Unit 2689

Notice of References Cited	Application/Control No. 16/403,761	Applicant(s)/Patent Under Reexamination Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20120071151-A1	03-2012	Abramson; Dan	H04L67/12	455/418
*	B	US-20160216130-A1	07-2016	Abramson; Dan	G01C21/3626	1/1
*	C	US-20160006860-A1	01-2016	Neitzel; Erik Paul	H04M1/72577	455/419
*	D	US-10029696-B1	07-2018	Ferguson; Dana	B60W50/14	1/1
*	E	US-10349239-B2	07-2019	Demele; Michael P.	H04W4/21	1/1
*	F	US-10097683-B2	10-2018	Okamoto; Katsuhiro	H04M1/72569	1/1
*	G	US-20170105098-A1	04-2017	Cordova; Brad	H04L43/16	1/1
*	H	US-20150312655-A1	10-2015	Balakrishnan; Hari	G07C5/008	340/870.07
*	I	US-9228836-B2	01-2016	Girod; Lewis D.	G01C15/00	1/1
*	J	US-8457880-B1	06-2013	Malalur; Paresh Govind	G01C21/30	701/410
*	K	US-20110145863-A1	06-2011	Alsina; Thomas M.	G06F3/0482	725/44
*	L	US-20110265003-A1	10-2011	Schubert; Emily Clark	G06F3/048	715/716
*	M	US-20020090981-A1	07-2002	Bae, Hyon S.	H04M1/15	455/575.5

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

CPC - Searched*		
Symbol	Date	Examiner
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG
Updated search	10/29/2019	FG

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG
See attached EAST search notes	07/11/2019	FG
inventor and assignee search	07/11/2019	FG
fwd and back citation search	07/11/2019	FG
Updated search	10/29/2019	FG

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

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

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

Copies of United States patent documents will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

US serial number and filing date/ status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G./

Appln. No. 16/403,761, filed on 5/6/2019 Pending (Attorney Docket No. 44355-00460001)	Fekadeselassie Girma GAU: 2689	No – submitted on 5/10/2019	No – submitted on 5/10/2019	No – submitted on 5/10/2019
Appln. No. 16/403,776, filed on 5/6/2019 Pending (Attorney Docket No. 44355-00770001)	Fekadeselassie Girma GAU: 2689	No – submitted on 5/10/2019	No – submitted on 5/10/2019	No – submitted on 5/10/2019

This statement is being filed within three months of the filing date of the application or before the receipt of a first action on the merits.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: /9/13/19/_____ /David L. Feigenbaum/_____

David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

62101207.doc

EXAMINER SIGNATURE			
Examiner Signature	/FEKADESELASSIE GIRMA/	Date Considered	10/26/2019

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

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G./

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	22	("20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" | "20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:18
L2	22	("20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" | "20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:18
L3	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/29 20:24
L4	30864	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:24
L5	37685	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:24
L6	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/10/29 20:25
L7	987	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO;	AND	OFF	2019/10/29 20:25

			DERWENT			
L8	987	L6 or L7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/10/29 20:25
L9	4	L8 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/10/29 20:25
L10	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/29 20:27
S1	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:48
S2	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:49
S3	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S4	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S6	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:52
S7	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/11 21:25
S8	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO;	AND	OFF	2019/07/11 21:25

			DERWENT			
S9	971	S7 or S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S10	4	S9 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S11	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:33
S12	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:33
S13	0	S12 S11	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:33
S14	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:34
S15	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S16	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S17	35240	S16 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S18	17	S16 S12	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S19	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:42

S20	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/11 21:42
S21	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/11 21:45
S22	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/11 21:46
S23	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S24	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S25	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S26	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S27	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S28	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/12 14:24
S29	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S30	971	S28 or S29	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S31	4	S30 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24

S32	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S33	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S34	0	S33 S32	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S35	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S36	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S37	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S38	35240	S37 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S39	17	S37 S33	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S40	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S41	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S42	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S43	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S44	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25
S45	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25

S46	23	driv$4 same (telephon$3 near4 call) same (headset2 or handset2 or speaker$2) same distraction$2	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 01:27
S47	4	("20160006860" | "20170105098").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 09:54
S48	2	("20180075309").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 10:41
S49	0	"16403761"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/28 14:36

EAST Search History (Interference)

< This search history is empty>

10/29/2019 8:28:06 PM
C:\Users\fgirma\Documents\EAST\Workspaces\16403761 DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER_1.wsp

Sheet 1 of 1

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	44355-0046001	16/403,761
	Applicant: Cambridge Mobile Telematics Inc.	
	Filing Date: May 6, 2019	Group Art Unit: 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	5148153	9/15/1992	Haymond			
	2.	20140168057	6/19/2014	Ahuja et al.			
	3.	20140256303	9/11/2014	Jones			
	4.	20140353574	12/29/2014	Hirabayashi			
	5.	20160014262	1/14/2016	Hodges et al.			
	6.	20160044156	2/11/2016	Hodges et al.			
	7.	20160267335	9/15/2016	Hampiholi			
	8.	20170210290	7/27/2017	Cordova et al.			
	9.	20180126901	5/10/2018	Levkova et al.			
	10.	20180167502	6/14/2018	Madhani			
	11.	20180173934	6/21/2018	Zink et al.			
	12.	20190034873	1/31/2019	Boitel et al.			
	13.	20190051305	2/14/2019	Liddell et al.			
	14.	20190096215	3/28/2019	Shahid et al.			
	15.	20190102840	4/3/2019	Perl et al.			
	16.	20190159166	5/23/2019	Aggarwal et al.			
	17.	20190185018	6/20/2019	Tao et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered
/FEKADESELASSIE GIRMA/	10/29/2019

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G/

Petitioner Ex 1002, p. 215
Zendrive v. CMT, IPR2023-01440

PTO/SB/30 (11-17)
Approved for use through 11/30/2020. 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.

Request for Continued Examination (RCE) Transmittal

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

Application Number	16/403,761
Filing Date	May 6, 2019
First Named Inventor	Hari Balakrishnan
Art Unit	2689
Examiner Name	Fekadeselassie Girma
Attorney Docket Number	44355-0046001

This is a Request for Continued Examination (RCE) under 37 CFR 1 .114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☒ Enclosed

      i. ☒ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☒ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
   The Director is hereby authorized to charge the following fees any underpayment of fees, or credit any overpayments to

   a. ☒ Deposit Account No. 06-1050.

      i. ☒ RCE fee required under 37 CFR 1.17(e)

      ii ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii ☒ Other any deficiencies

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

   d. ☒ Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	/Christopher Reilly/	Date	January 31, 2020
Name (Print/Type)	Christopher L. Reilly	Registration No.	74,063

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.

Signature	/Cathy A. O'Brien/		
Name (Print/Type)	Cathy A. O'Brien	Date	January 31, 2020

This collection of information is required by 37 CFR 1.114. 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: Mail Stop RCE, 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:	16403761
Filing Date:	06-May-2019
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Filer:	Christopher Leo Reilly/Cathy O'Brien
Attorney Docket Number:	44355-0046001

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($)
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	650	650
		Total in USD ($)		**650**

Electronic Acknowledgement Receipt

EFS ID:	38455414
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	Christopher Leo Reilly/Cathy O'Brien
Filer Authorized By:	Christopher Leo Reilly
Attorney Docket Number:	44355-0046001
Receipt Date:	31-JAN-2020
Filing Date:	06-MAY-2019
Time Stamp:	11:00:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$650
RAM confirmation Number	E20201UB01072681
Deposit Account	061050
Authorized User	Cathy O'Brien

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

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Reply_44355-0046001.pdf	161324 3a99473234dfadf3c9d09fdc8465005c85315d04	yes	17
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	17	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	RCE.pdf	89071 e66e2c2ee91adcbdf36ddd9337a4226b6b426831	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30533 660a5d8bf599cd9020f19d98b9dd73e13550ee28	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	280928		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

Mail Stop AF
Commissioner for Patents
P.O. Box 1450f
Alexandria, VA 22313-1450

REPLY TO ACTION OF NOVEMBER 4, 2019

List of claims (replacing prior versions)

1. (currently amended) A method comprising

receiving signals from one or more detectors ~~housed in~~ of a mobile device while the mobile device is on a trip in a vehicle, ~~the detectors comprising at least an accelerometer and a gyroscope,~~

using the received signals from the one or more detectors to identify one or more physical states of the mobile device during the trip, the one or more physical states comprising ~~speed of~~ motion of the mobile device along a trajectory of the trip,

based on the identified one or more physical states, separately generating two or more discrete distraction events separated in time, ~~at least one~~ each of the discrete distraction events comprising concurrent motion of the mobile device and interaction with the mobile device by an occupant of the vehicle ~~being picked up, rotated, held by, tapped on, or facing in the direction of a driver~~, and

determining a distraction episode that ~~spans~~ extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle, the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode.

2. (currently amended) The method of claim 1 in which the one or more physical ~~state~~ states comprises an operational state of the mobile device.

3. (original) The method of claim 2 in which the operational state comprises a state of locking of the mobile device.

4. (original) The method of claim 3 in which the operational state comprises a state of a phone call.

5. (original) The method of claim 4 in which the operational state comprises a power condition.

6. (original) The method of claim 4 in which the operational state comprises an aspect of a foreground app running on the mobile device.

7. (canceled)

8. (original) The method of claim 1 in which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode.

9. (original) The method of claim 8 in which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction.

10. (original) The method of claim 9 in which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction.

11. (original) The method of claim 10 in which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

12. (currently amended) A method comprising

receiving signals from one or more detectors ~~housed in~~ of a mobile device while the mobile device is on a trip in a vehicle,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip in the vehicle,

determining a possible distraction episode based on one or more of the physical states,

based on the received signals, determining that the mobile device is engaged in an active telephone call, ~~and~~

based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker, and

after the possible distraction episode is determined, determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker.

13. (canceled)

14. (original) The method of claim 12 comprising

based on the received signals, determining a proximity of a user's hand to the mobile device.

15. (original) The method of claim 12 comprising

based on the received signals, determining whether a display screen of the mobile device is being tapped.

16. (original) The method of claim 12 comprising

based on the received signals, identifying a foreground app running on the mobile device.

17. (original) The method of claim 12 comprising

based on the received signals, determining a behavior of a conveyance being used for the trip.

18. (previously presented) The method of claim 12 comprising

determining a context of a possible distraction episode based on detecting a rotation of a display screen of the mobile device.

19. (original) The method of claim 18 comprising

detecting a tap on the display screen based on a parameter of the rotation.

20. (original) The method of claim 12 comprising

based on the received signals, determining a frequency of taps on a display screen of the mobile device.

21. (original) The method of claim 12 comprising

based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices.

22. (original) The method of claim 20 comprising

determining an occurrence of a tapping event based on a tapping score based on taps in the sequence and periods of time between successive taps.

23. (original) The method of claim 12 comprising

based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode.

24. (previously presented) The method of claim 23 comprising

based on the orientation of the mobile device or the display screen of the mobile device, identifying a context of the possible distraction episode.

25. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and

the context of the possible distraction episode comprises the mobile device being mounted in the conveyance.

26. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and

the context of the possible distraction episode is not that the mobile devices mounted.

27. (previously presented) The method of claim 24 in which

the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and

the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ear of an occupant of the conveyance.

28. (original) The method of claim 24 in which

the display screen of the mobile device faces generally downwardly, and

the context of the possible distraction episode comprises the mobile device not being used.

29. (previously presented) The method of claim 24 comprising

reporting the context and the possible distraction episode to a user of the mobile device.

30. (previously presented) The method of claim 24 comprising

scoring the possible distraction episode using the context.

REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (presented in small, boldfaced type and not necessarily in their original order).

5. Claims 1-6, 8-12 and 14-30 are rejected under 35 U.S.C. 103 as being unpatentable over Neitzel (US 2016/0006860) in view of Cordova (US 2017/0105098).

As to claim 1, Neitzel discloses in mobile wireless device incorporating self-detection of operational environment and selective device functionality having claimed:

a. receiving signals from one or more detectors housed in a mobile device while the mobile device is on a trip, the detectors read on 0008, (The mobile wireless device comprises a plurality of sensors for sensing: motion, thermal images in a field of view of a lens, and a side of a vehicle cabin);

b. at least an accelerometer and a gyroscope, using the received signals from the detectors to identify one or more physical states of the mobile device during the trip, the physical states comprising speed of motion of the mobile device along a trajectory of the trip, and operational state of the mobile device read on 0026, (the gyroscope 108 and accelerometer 106 provide complimentary motion data streams that aid determining a current physical status (e.g., motion speed, orientation) of the mobile wireless device 100);

c. based on the identified physical states, at least one of the discrete events comprising the mobile device being picked up, rotated, held by, tapped on, or facing in the direction of a driver read on 0044 & 0047, (the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315. The probabilistic state--based logic 102 compares the positioning information with previously stored signature velocity and direction information to determine if a user is holding the device at the valid position, within a specified tolerance, in relation to the direction of the vehicle's travel. Such positioning may entail aligning the screen of the device 100 so that the screen is perpendicular to the axis of the direction of travel by +/- a certain percentage/degrees along the non-correlated axes. This would indicate that the possessor of the device 100 has the back of the device 100 (and the fisheye lens 112) facing towards the direction of travel (which should be the front of the vehicle cabin). This is the range of positions for which text or data would be used);

d. determining a distraction episode that spans two or more of the events during the trip, the determining of the distraction episode comprising determining a possible distraction episode and determining that the possible distraction episode comprises a true distraction episode read on Fig. 3, 0092 - 0095, (during step 375, after determining the device 100 is in the possession of the driver, the state-based logic 102 implements, by way of example, the following: 1, Disabling application/device functions and/or interfaces based upon operator or government mandated options specified in the limitations definition 104; 2. Maintaining a running log of UPS-based device position changes (for determining an average speed) of the device 100 for a time interval having the time duration tc; and 3. If the average speed is greater than one (1) km/hr over the duration tc of the time interval (indicating that the vehicle is still moving), then maintaining disablement of functions and/or interfaces based upon operator or government mandated options; and returning control of the state-based logic 102 to the "start" of the exemplary set of operations and decisions summarized in FIG. 3 if the average speed over the interval is less than or equal to one (1) km/hr (i.e., the vehicle has effectively "stopped")).

Without conceding the examiner's position, the applicant has amended claim 1 to recite, in part, "based on the identified one or more physical states, separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle," and "determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle, the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode."

The cited portions of Neitzel did not describe or make obvious "based on the identified one or more physical states, separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle." Instead, the cited portions of Neitzel described a process for conditionally "[d]isabling application/device functions and/or interfaces based upon operator or government mandated options." (Fig. 3, ¶ 92-93). Neitzel described a series of steps, portrayed in Fig. 3, for detecting when to disable device functionality (e.g., after determining the device is in the possession of the driver of a moving vehicle). Once the criteria for disabling the device are met, Neitzel described that the device functions and/or interfaces remain disabled so long as the vehicle is in motion; otherwise, the system returns "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (¶ 95). In other words, Neitzel detected a single instance for which the described criteria for disabling the device is met and did not attempt to detect another instance until after the vehicle had stopped and the process was allowed to restart. As such, Neitzel did not describe or make obvious "separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle," as recited in amended claim 1.

In the response to arguments section of the action dated November 4, 2019, the examiner asserts that Neitzel described generating two or more discrete distraction events, citing Fig. 3 and

paragraphs 42, 43, and 45-47 of Neitzel: "[f]ig. 3 also discloses the steps of several (more than two) distraction events including the mobile wireless is in the moving motor vehicle, determining GPS to determine if the mobile device speed, spatial/temporal patterns, the sensing of multiple deliberate touches at different locations within a short period of time may be interpreted to be consistent with text or gaming input and/or the device 100 in a way requiring the user to view the display of the device are also contemplated." Yet this assertion conflates the individual steps described by Neitzel to "determine whether a mobile device is in the possession of a vehicle driver and then restrict application functionality" with the applicant's claimed distraction events. Each individual step described in the cited portions of Neitzel (e.g., determining whether a mobile device is in a vehicle, acquiring GPS signals from the mobile device to determine the vehicle speed, etc.) could not have been a distraction event as recited in the applicant's claims, which comprises "concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle." In addition, Neitzel did not describe that the alleged distraction events are separated in time, as conceded by the examiner.

Because Neitzel did not describe or make obvious separately generating two or more discrete distraction events separated in time, Neitzel necessarily did not describe "determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle," let alone that the determining of the distraction episode comprises "determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode," as recited in amended claim 1.

Neitzel does not explicitly disclose generating discrete events separated in time.

As explained above, there are also other features of the applicant's amended claim 1 that were not described by the cited portions of the Neitzel reference.

However, Cordova in track driving behaviors teaches:

e. generating discrete events separated in time read on 0052, (based on the time frame of the potentially distracting activity, aggravating and/or mitigating factors are identified. Though the attached figures illustrating embodiments should be interpreted such that, in some embodiments, all steps/components could be optional, combined with other steps/components and/or performed by different steps/components, processing block 350 has

a dotted line to further emphasize the optional nature of this stage).

The applicant respectfully disagrees. Paragraph 52 of Cordova merely described that aggravating and/or mitigating factors are identified based on the time frame of the potentially distracting activity. Identifying aggravating and/or mitigating factors during the same time frame of the potentially distracting activity did not amount to "separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle," as recited in amended claim 1.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was filed to incorporate the systems and methods for detecting and assessing distracted drivers of Cordova into Neitzel in order to detect and assess distracted drivers and provide the framework for measuring inattentiveness, and accurately predict actual device usage while driving to analyze collected driving data and assign scores based on different criteria.

The applicant respectfully disagrees, as Neitzel, alone or in combination with Cordova, neither described nor would have made obvious at least "based on the identified one or more physical states, separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device," and "determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle, the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode."

As described above, the cited portions of Neitzel described detecting a single instance in which criteria for disabling features of a mobile device were met and did not attempt to detect another instance until the vehicle was stopped and the system returned "to the 'start' of the exemplary set of operations and instructions summarized in Fig. 3" (¶ 92-95). Thus, the cited portions of Neitzel did not describe "separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle," as

recited in amended claim 1. As such, Neitzel necessarily did not describe "determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle."

Cordova similarly did not describe or make obvious the foregoing features of claim 1. For instance, paragraphs 49-56 and Fig. 3 of Cordova described that "the activity being performed with the mobile device 101 is estimated" and subsequently used to determine the level of driver inattentiveness and generate a score. Thus, Cordova described identifying a single instance of driver distraction, not "separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device," as recited in amended claim 1. As such, Cordova necessarily did not describe "determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle."

As to claim 2, Neitzel further discloses:

a. in which the physical state comprises an operational state of the mobile device read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired. during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 3, Neitzel .the discloses:

a. which the operational state comprises a state of locking of the mobile device read on 0102, (Screen lock—preventing viewing information/graphics on the display screen).

As to claim 4, Neitzel further discloses:

a. which the operational state comprises a state of a phone call read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications).

As to claim 5, N4.4tzel further discloses:

which the operational state comprises a power condition read on 0038, (having described the general functionality of the state-based logic 102., attention is now directed to the particular exemplary steps, summarized in FIG. 3, carried out by a particular exemplary embodiment of the state-based logic 102. After power-on of the mobile wireless device 100).

As to claim 6, Neitzel further discloses:

a. which the operational state comprises an aspect of a foreground app running on the mobile device read on 0020, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver).

As to claim 8, Neitzel further discloses:

which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode read on 0040, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 9, Neitzel further discloses:

a. which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction read on 0040 & 0044, (During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs. If at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from a time period specified during step 310). Control then passes to step 315).

As to claim 10, Neitzel further discloses:

a. which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction read on 0040, (if the analyzed signal characteristics indicate that the device is not within a moving motor vehicle, then control passes to step 310. During step 310 a configurable delay period timer is set (for executing a next iteration of step 300). Such period can be a few seconds, several seconds, or even minutes. The wait period may also vary -based upon other factors. Such factors include, for example, a value of a counter indicating previous repeated indications of no detected vehicle movement during- step 305. Control then passes to step 315 wherein the process enters a wait state until a triggering event (e.g., the delay period expires) occurs).

As to claim 11, Neitzel further discloses:

a. which determining that the possible distraction episode comprises a true distraction episode comprises determining that a time period spanned by the possible distraction episode is longer than a predetermined length read on 9I 0042 --- 0043, (Such GPS signal acquisition/processing can be performed within the device 100 or, alternatively, in association with a networked server. By way of example a time-ordered sequence of GPS measurements, over a specified time duration (ty) are analyzed to render an average speed of the device 100 over the time interval having the specified duration ty. Moreover, during

step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 12, Neitzel further discloses:

based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker read on (0020 & 0021, (Such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver. Thus illustrative examples of the conditionally restricted mobile wireless device functionality only apply conditional service/function restrictions to a driver/operator of a moving vehicle. Determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features). On the other hand, if the device determines that the device is in the physical possession of a user positioned in a passenger seat, the device will allow full service/functional feature access by the passenger).

Without conceding the examiner's position, the applicant has amended claim 12 to recite "after the possible distraction episode is determined, determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker."

Neither Neitzel nor Cordova described or made obvious at least this feature of amended claim 12. For instance, the cited portions of Neitzel described that the system may distinguish between "use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver" when conditionally limiting services/functionality of the mobile device, such as "device-to-ear (hand held) voice calls." However, distinguishing between passengers and drivers when conditionally limiting features, as described by Neitzel, did not amount to "after the possible distraction episode is determined, determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker."

Cordova described estimating "that driver 1340 is holding mobile device 101 to her ear, and thus making a phone call without use of a headset" (¶ 123-124). However, estimating when a phone call is made without use of a headset, as described in Cordova, did not amount to "after the possible distraction episode is determined, determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker," as recited in amended claim 12.

As to claim 14, Neitzel further discloses:

a. based on the received signals, determining a proximity of a user's hand to the mobile device read on 0021. (The mobile wireless device, without any aid by a user, determines whether the mobile wireless device is in the physical possession of a user in the driver seat position of a moving vehicle, and upon such determination the device disables one or more services/functional features of the device (e.g., hand-held mode voice calls, text, and data features)).

As to claim 15, Neitzel further discloses:

based on the received signals, determining whether a display screen of the mobile device is being tapped read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time. period that, in contrast to a relatively short time period tx for accelerometer reading may last several seconds).

As to claim 16, the claim is corresponding to claim 6. Therefore, the claim is rejected for the same rationales set forth for claim 6.

As to claim 17, Neitzel further discloses:

a. based on the received signals, determining a behavior of a conveyance being used for the trip read on 0036, (the exemplary state-based logic summarized in FIG. 3 operates on multiple, conditionally activated/gated, data streams (recorded over a specified time window) from the embedded sensors e.g., accelerometer, gyroscope, magnetometer, etc.), signal receivers (e.g., GPS signal receiver), at d imaging/camera inputs (e.g., infrared fisheye camera lens). The state based logic, based upon specified configuration parameters and the conditionally applied data streams, makes a probabilistic determination whether the mobile wireless device 100 is operating in a particular one of multiple potential physical operating environments).

As to claim 18, Neitzel further discloses:

a. which determining the context of a possible distraction episode comprises: detecting a rotation of a display screen of the mobile device read on ¶ 0025 & 7 0028, (a gyroscope 108 measures a rate of rotation around a particular axis at an angular rate, and helps maintain orientation. The gyroscope 108, in the exemplary implementation, determines the X, Y, and Z orientations for a device. The mobile wireless device 100 includes, among other things, known data processing functionality that combines accelerometer, gyroscope, and magnetometer data to render a currently sensed orientation of the mobile wireless device 100. Each of these three sensors makes a unique contribution to the overall orientation sensing capabilities of the mobile wireless device 100).

As to claim 19, Neitzel further discloses:

a. detecting a tap on the display screen based on a parameter of the rotation read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 20, Neitzel further discloses:

a. based on the received signals, determining a frequency of taps on a display screen of the mobile device read on 0044, (if at step 330, the movement. orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335).

As to claim 21, Neitze1 further discloses:

a. based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 22, Neitzel further discloses:

a. determining an occurrence of a tapping event based on a tapping based on taps in the sequence and periods of time between successive taps read on 0043, (Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as -well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

Cordova further teaches:

b. score based on tapping read on 0056, (a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving). As described herein, and in the Incorporated Applications, grades assigned to smaller behavior features (e.g., a single event), can be weighted and/or aggregated into an evaluation of larger behavior features (e.g., a whole drive, a month of driving, a user's entire driving history, the driver's current - behavior rating, and/or other similar features).

As to claim 23, Neitzel further discloses:

a. based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode read on 0043, (during step 325, which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. tx for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 100 is consistent with a use profile for a user viewing a display of the device 100. Such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by

the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time period that, in contrast to a relatively short time period tx for accelerometer reading, may la.st several seconds).

As to claim 24, Neitzel further discloses:

a. based on the orientation of the mobile device or the display screen of the mobile device, identifying the context of the possible distraction episode read on 0043, (such usage pattern may be one or more of signal streams relating to device movement and orientation (per input signals rendered by the accelerometer 106) as well as sensed touch patterns (e.g. spatial, temporal, data input, etc.) on a touch screen of the device 100 over a time, period that, in contrast to a relatively short time period tx for accelerometer reading, may last several seconds).

As to claim 25, Neitzel further discloses:

a. the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and the context of the possible distraction episode comprises the mobile device being in the conveyance read or 0043 & 0079, (which may occur at any of a variety of times, signal values, acquired during a time interval having a specified time duration (e.g. x for accelerometer readings), are analyzed to determine whether a sensed usage pattern of the device 10) is consistent with a use profile for a user viewing a display of the device 100. Two lateral measurements are potentially sufficient to render a determination whether the mobile wireless device is currently in possession of a driver or a front seat passenger. When the device is properly held up by the device holder (upright and in front of the holder), if the device is in the possession of the driver, then a measured left distance is likely smaller than a measured right distance, based upon the typical position of the driver seat in a motor vehicle. Given the cluttered environment of the interior of a vehicle, lasers provide more precise measurements than entire views rendered by image scanners such as the fisheye camera -which is what is needed to determine small distance measurements rendered by the LASER range finders at various potential user positions in a vehicle). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525, it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 26, Neitzel further discloses:

a. which the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile devices oriented in a direction for normal use by an occupant of a conveyance, and the context of the possible distraction read on 0069 — 0074, if at step 330, the movement, orientation, and/or touch screen input of the device 100 over the time interval having a duration tx is determined to be inconsistent with a user viewing the display of the device 100, then control passes to step 335. During step 335, a configurable delay period timer is set (for a period that may differ from_ a time period specified during step 310). Control then passes to step 315. If at step 355, the probabilistic state-based logic 102 determines, through thermal image signature matching, that the user of the device 100 is not a front seat occupant, then control passes to step 360 wherein the state-based logic 102 executes in accordance with a "passenger in possession" operating mode. During step 360,

while in the possession of a passenger, the state-based logic 102 exhibits the following exemplary behaviors: 1. Allow normal operation for voice, data, and text for a specified "hysteresis" time duration (tb); 2. Maintain a running log of thermal sensor data for a specified time duration (td); 3. Maintain a running log of speed for a specified time duration (tc); and 4. Maintain a running log of device positional data for a specified time duration (tz)). Neitzel does not explicitly disclose the possible distraction episode is not that the mobile devices mounted.

However, Cordova further teaches:

b. the possible distraction episode is not that the mobile devices mounted read on 0078, (at decision block 525 it is determined whether mobile device 101 is in a mount in the vehicle during each time interval of the trip based on a comparison of sensor data 510 to known mount data. This determination may be made, for example, by a mount detection engine within device usage engine 256, which may be implemented in mobile device 101, server 150, and/or server 201).

As to claim 27, Neitzel further discloses:

a. the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ear of an occupant of the conveyance read on 0020, 0045 & 0050, (such conditionally limited services/functionality include: device-to-ear (hand-held) voice calls, text messaging, and selected data applications. Moreover, the conditional use limiting mobile device distinguishes use of the mobile wireless device by passengers in the moving vehicle from use of the mobile wireless device by a driver). At step 330 the sensed orientation of the device 100 or detected usage pattern over the detection interval (during step 325) is consistent with a user viewing the display of the device 100, then control passes to step 340. During step 340, the probabilistic state-based logic 102 accesses a currently calculated average speed of the device 100 based upon previously acquired GPS data. This distinction is generally a result of the diffusion of heat on a windshield—as opposed to the back of a front seat where various combinations of obstructions (e.g. head rests) within the captured field of view of the lens 112 result in greater variances in the upper portion of the lens 112 field of view (when the device 100 is properly oriented during image capture)).

As to claim 28, Neitzel further discloses:

a. the display screen of the mobile device faces generally downwardly, and the context of the possible distraction episode comprises the mobile device not being used read on 0007, (variety of measures have been implemented to address driver distraction-related accidents arising from mobile -wireless device usage by drivers, a superior method and apparatus are described herein that provides a sensor/signal/image based solution to a need to ensure that mobile wireless devices are not used in inappropriate settings).

As to claim 29, Neitzel further discloses:

a, reporting the distraction context and the possible distraction episode to a user of the mobile device read on 0037, (if the .limitations definition 104 calls for a provided application service functionality to be disabled in the currently determined physical operating environment, then the mobile wireless device 100 takes a prescribed remedial action disabling/deactivating the services/functionality, issuing a warning or audible instruction, recording an unsafe usage event, activating a timer to take a further action to limit further usage of a service/functionality, etc.) in accordance with the limitations definition 104 stored within memory on the mobile, wireless device 100).

As to claim 30, Cordova further teaches:

a. scoring the possible distraction episode using the distraction context read on 0056, (once an estimate is completed by some embodiments, a score (e.g., a metric, grade and/or any other indication likely to understood by drivers) can be generated.. For example, letter grades may provide an easy-to-understand rating for different levels of distraction (e.g., an "F" assigned to a single event, and/or a drive that contained the event, where an incident was detected in which a driver sent a text message while the vehicle was moving)).

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims, or (d) canceled one or more claims does not mean that the applicant disclaims or relinquishes any such claim or any other claim or their features.

The applicant does not relinquish the subject matter of and reserves the right to pursue, in this prosecution and in the prosecution of other patent applications, these claims, other claims not presented in this prosecution (including narrower and broader claims), claims to other features, previously presented claims, and previous versions of presented claims.

Apply any necessary charges or credits to deposit account 06 1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 31, 2020

/Christopher Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23984789.doc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement. Copies of the documents are being submitted with this statement to the extent required under 37 C.F.R. § 1.98(a)(2).

This statement is being filed with a Request for Continued Examination. No fee is required.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: January 31, 2020

/Christopher Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

62240318.doc

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 44355-0046001	Application No. 16/403,761
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Cambridge Mobile Telematics Inc.	
(37 CFR §1.98(b))		Filing Date May 6, 2019	Group Art Unit 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	10296785	5/21/2019	Chan et al.			
	2.	10388249	8/20/2019	Beckman			
	3.	20050015016	1/20/2005	Elitok et al.			
	4.	20110136480	6/9/2011	Osann			
	5.	20120329444	12/27/2012	Osann			
	6.	20140354574	12/4/2014	Hirabayashi et al.			
	7.	20160165031	6/9/2016	Gopinath			
	8.	20160270025	9/15/2016	Osann			
	9.	20170236411	8/17/2017	Sumers			
	10.	20170279957	9/28/2017	Abramson et al.			
	11.	20170365007	12/21/2017	Huls			
	12.	20180081614	3/22/2018	Tsai et al.			
	13.	20180144636	5/24/2018	Becker			
	14.	20180322413	11/8/2018	Yocam et al.			
	15.	20190111844	4/18/2019	Suzuki et al.			
	16.	20190168771	6/6/2019	Migneco et al.			
	17.	20190225080	7/25/2019	Mueller et al.			
	18.	20190265868	8/29/2019	Penilla et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Petitioner Ex 1002, p. 240
Zendrive v. CMT, IPR2023-01440

Electronic Acknowledgement Receipt

EFS ID:	38456129
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	Christopher Leo Reilly/Mollie Kufner
Filer Authorized By:	Christopher Leo Reilly
Attorney Docket Number:	44355-0046001
Receipt Date:	31-JAN-2020
Filing Date:	06-MAY-2019
Time Stamp:	11:35:25
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	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_Transmittal.pdf	71668 042ae014f47e50c3f67bdb753fce8237ec536157	no	1

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_1449.pdf	125474 71f0b708a5941a184724a618063bf00478b3e486	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	197142	

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 16/403,761	Filing Date 05/06/2019	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	01/31/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 28	Minus	** 30	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement. Copies of the documents are being submitted with this statement to the extent required under 37 C.F.R. § 1.98(a)(2).

This statement is being filed after a request for continued examination and before the mailing of a first action.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: March 19, 2020

/Christopher Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

100136359.doc

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary)		44355-0046001	16/403,761
		Applicant: Cambridge Mobile Telematics Inc.	
(37 CFR §1.98(b))		Filing Date: May 6, 2019	Group Art Unit: 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	20110306304	12/15/2011	Forutanpoour et al.			
	2.	20160205238	7/14/2016	Abramson et al.			
	3.	20170108868	4/20/2017	Johnson et al.			
	4.	20180075309	3/15/2018	Sathyanarayana			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Petitioner Ex 1002, p. 245
Zendrive v. CMT, IPR2023-01440

Electronic Acknowledgement Receipt

EFS ID:	38914848
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	Christopher Leo Reilly/Mollie Kufner
Filer Authorized By:	Christopher Leo Reilly
Attorney Docket Number:	44355-0046001
Receipt Date:	19-MAR-2020
Filing Date:	06-MAY-2019
Time Stamp:	15:16:07
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	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_Transmittal.pdf	64501 83c4842e4889ceb31bf1284e29ef7ba159d762d8	no	1

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Information Disclosure Statement (IDS) Form (SB08)	44355-0046001_1449.pdf	111220 6e6e9705a11060878a99baaf240f8700c18358e6	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	175721	

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

26161 7590 03/25/2020
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
GIRMA, FEKADESELASS

ART UNIT	PAPER NUMBER
2689	

DATE MAILED: 03/25/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

TITLE OF INVENTION: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	06/25/2020

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

Petitioner Ex 1002, p. 248
Zendrive v. CMT, IPR2023-01440

PART B - FEE(S) TRANSMITTAL

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

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

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

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

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

26161 7590 03/25/2020
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

TITLE OF INVENTION: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	06/25/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
GIRMA, FEKADESELASS	2689	340-691600

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

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

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

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

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

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

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Petitioner Ex 1002, p. 249
Zendrive v. CMT, IPR2023-01440

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.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 03/25/2020

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

DATE MAILED: 03/25/2020

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.

Petitioner Ex 1002, p. 250
Zendrive v. CMT, IPR2023-01440

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 16/403,761	Applicant(s) Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	AIA (FITF) 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 Amendment filed on 01/31/2020.
   ☐ 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 1-6,8-12 and 14-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

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

/FEKADESELASSIE GIRMA/
Primary Examiner, Art Unit 2689

Petitioner Ex 1002, p. 252
Zendrive v. CMT, IPR2023-01440

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. Claim 1-6, 8-12 and 14-30 are allowed.

Allowable Subject Matter

2. The following is a statement of reasons for the indication of allowable subject matter: The following is an examiner's statement of reasons for allowance: the related art of record fails to disclose or suggest a combination of a plurality of an identified physical states, separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device by an occupant of the vehicle. A distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle, the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining if the is a true distraction episode. Determining the context of the possible distraction episode includes: receiving signals from an operating system of the mobile device or an app running on the mobile device. Based on the received signals, a determination is made whether the mobile device is engaged in an active telephone call using a handset speaker, an internal speaker phone, or an external speaker. The method further comprises separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent movement of the mobile device and interaction with the mobile device. Sensor readings indicating movement of the mobile device must collectively last at least a minimum duration to log a phone motion episode; and

movements detected within a set time interval of each other are incorporated into the same episode. These episodes are assessed20 individually to assign a risk to the event, which is reported to users. The episodes are also assessed collectively in generating a distraction score to display to a user: the distraction scores are assessed per driving trip and per calendar period. Moreover, the related art indicates that this particular device and method is novel and has not been published or patented by other entities. This along with the rest of the claimed limitations is not shown by the related art.

Consider claim 1, the best reference found during the process of examination, Demele (US 10349239), discloses system and method for generating notifications when a person is in a driving state, in a non-driving state, and optionally a destination arrival notification so that interested parties, such as family members, friends and/or co-workers, can make informed and proactive decisions to not call or text the person while driving is described. With push notifications, interested parties can thus make informed decisions and purposely delay making a phone call or texting a driver until after they have arrived at their destination and are no longer driving. As a result, drivers are not needlessly distracted, significantly improving road safety.

Consider claim 1, another best reference found during the process of examination, Girod (US 9228836), discloses an accurate longitudinal acceleration, lateral acceleration (perpendicular to the principal direction of motion, and velocity, is inferred by processing raw data from a commodity three-axis accelerometer that may be oriented arbitrarily in a moving vehicle (or carried by a moving user), and whose orientation and position may change arbitrarily during the motion. The approach is applicable to a range of applications, including insurance telematics, driver behavior and risk assessment, and road surface quality assessment.

Claim 12 recites features, among others, that are similar to the features that are discussed above with respect to claim 1. Therefore, for reasons similar to those discussed above with respect to claim 1, therefore claim 12 is patentable over related arts. Claims 2-6, 8-11 and 14-30 depend from claims 1 and 12. Therefore, these claims are patentable over in view of related arts for the reasons given with respect to claims 1.

Therefore, claims 1-6, 8-12 and 14-30 of the present application are considered novel, consequently, are allowed.

Citation of pertinent Prior Arts

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see PTO-892 Notice of References Cited.

Conclusion

4. 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 submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fekadeselassie Girma whose telephone number is (571) 270-5886. The examiner can normally be reached on Monday thru Friday, 9:00 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (571) 272-4090. 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.

/Fekadeselassie Girma/

Primary Examiner Art Unit 2689

Notice of References Cited	Application/Control No. 16/403,761	Applicant(s)/Patent Under Reexamination Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9039648-B2	05-2015	Kelly; Thomas	A61M1/167	604/6.08
*	B	US-9545342-B2	01-2017	Cretu-Petra; Eugen	A61F13/42	1/1
*	C	US-20120071151-A1	03-2012	Abramson; Dan	H04W12/0802	455/418
*	D	US-20160216130-A1	07-2016	Abramson; Dan	G01C21/3626	1/1
*	E	US-20160006860-A1	01-2016	Neitzel; Erik Paul	H04M1/72577	455/419
*	F	US-10029696-B1	07-2018	Ferguson; Dana	B60W40/09	1/1
*	G	US-10349239-B2	07-2019	Demele; Michael P.	H04W4/21	1/1
*	H	US-10097683-B2	10-2018	Okamoto; Katsuhiro	G06F21/74	1/1
*	I	US-20170105098-A1	04-2017	Cordova; Brad	H04W4/023	1/1
*	J	US-20150312655-A1	10-2015	Balakrishnan; Hari	G07C5/008	340/870.07
*	K	US-9228836-B2	01-2016	Girod; Lewis D.	G01C15/00	1/1
*	L	US-8457880-B1	06-2013	Malalur; Paresh Govind	G01C21/30	701/410
*	M	US-20110145863-A1	06-2011	Alsina; Thomas M.	G06F3/0482	725/44

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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.

Notice of References Cited	Application/Control No. 16/403,761	Applicant(s)/Patent Under Reexamination Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	Art Unit 2689	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20110265003-A1	10-2011	Schubert; Emily Clark	G06F3/048	715/716
*	B	US-20020090981-A1	07-2002	Bae, Hyon S.	H04M1/15	455/575.5
*	C	US-20120299730-A1	11-2012	Rahimi; Gil Goel	A61B5/1112	340/573.1
*	D	US-20040207530-A1	10-2004	Nielsen, Wyn Y.	A61F13/42	340/604
*	E	US-10350115-B2	07-2019	Long; Andrew M.	A61F13/49004	1/1
*	F	US-10155082-B2	12-2018	Roger; Rodolfo G.	A61M1/16	1/1
*	G	US-10130523-B2	11-2018	Geloen; Jacques	A61F13/42	1/1
*	H	US-10111787-B2	10-2018	Ying; Jackie Y.	A61F13/49	1/1
*	I	US-9726629-B2	08-2017	Bhatia; Saket S.	G01N27/07	1/1
*	J	US-9645218-B2	05-2017	Schroers; Alexander	A61B5/1495	1/1
*	K	US-20110246891-A1	10-2011	Schubert; Emily	G06F9/452	715/719
*	L	US-20100293462-A1	11-2010	Bull; William	G06F9/452	715/716
*	M	US-20090284476-A1	11-2009	Bull; William	G06F9/452	345/173

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

CPC - Searched*		
Symbol	**Date**	**Examiner**
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG
Updated search	03/18/2020	FG

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

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

Search Notes		
Search Notes	**Date**	**Examiner**
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48 Text and cursory search	07/11/2019	FG
See attached EAST search notes	07/11/2019	FG
inventor and assignee search	07/11/2019	FG
fwd and back citation search	07/11/2019	FG
Updated search	03/18/2020	FG

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	Art Unit
	FEKADESELASSIE GIRMA	2689

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48	Text and cursory search	03/18/2020	FG

/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	**Art Unit**
	FEKADESELASSIE GIRMA	2689

CPC						
Symbol					**Type**	**Version**
G08B	/	21	/	18	F	2013-01-01
G09B	/	19	/	00	I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	28	
/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	18 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	**Art Unit**
	FEKADESELASSIE GIRMA	2689

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G08B21/18	/	21	/	18	
G09B19/00	/	19	/	00	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	28	
/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	18 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office

Part of Paper No.: 20200317

Petitioner Ex 1002, p. 262
Zendrive v. CMT, IPR2023-01440

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	**Art Unit**
	FEKADESELASSIE GIRMA	2689

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	17	19	26	28								
2	2	10	11	18	20	27	29								
3	3	11	12	20	21	28	30								
4	4		13	19	22										
5	5	12	14	21	23										
6	6	13	15	22	24										
	7	14	16	23	25										
7	8	15	17	24	26										
8	9	16	18	25	27										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	28	
/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	18 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office

Part of Paper No.: 20200317

Petitioner Ex 1002, p. 263
Zendrive v. CMT, IPR2023-01440

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	("20160006860" | "20170105098").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 18:22
L2	6	("2017/0105098").URPN.	USPAT	AND	OFF	2020/03/18 18:37
L3	0	((mobil$4 near5 (in or inside$2)) near3 (vehicl$4 or car$2)) same (moving$2 or move$4 or motion$4) same distraction$3 same (headset2 or speaker$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:09
L4	5	((mobil$4 near5 (in or inside$2)) near3 (vehicl$4 or car$2)) same (moving$2 or move$4 or motion$4) same distraction$3 same (verif$3 or determin$4)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:10
L5	17	((mobil$4 near5 (in or inside$2)) near3 (vehicl$4 or car$2)) same (moving$2 or move$4 or motion$4) same distraction$3	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:14
L6	386	(mobil$4 or phone$4 or cell) same (moving$2 or move$4 or motion$4) same distraction$3 same (verif$3 or determin$4)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:14
L7	9	(mobil$4 or phone$4 or cell) same (moving$2 or move$4 or motion$4) same distraction$3 same (verif$3)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:16
L8	4	(mobil$4 or phone$4 or cell) same distraction$3 same (verif$3) same (speaker$4 or audio$3 or headset2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:35
L9	4	(driver$4 near4 distraction$3) same (verif$3) same (speaker$4 or audio$3 or head$set$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/18 19:37
S1	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:48
S2	0	(mobile same gyroscop$4 same	US-	AND	OFF	2019/07/11

		accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	PGPUB; USPAT; FPRS; EPO; JPO			14:49
S3	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S4	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:51
S6	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 14:52
S7	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/11 21:25
S8	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:25
S9	971	S7 or S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S10	4	S9 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:29
S11	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/11 21:33
S12	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:33
S13	0	S12 S11	US-	AND	OFF	2019/07/11

			PGPUB; USPAT; FPRS; EPO; JPO			21:33
S14	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:34
S15	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S16	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S17	35240	S16 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S18	17	S16 S12	US-PGPUB; USPAT	AND	OFF	2019/07/11 21:38
S19	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/11 21:42
S20	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/11 21:42
S21	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/11 21:45
S22	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/11 21:46
S23	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (time near2 event$2))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S24	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2) same (picked$2 or rotat$4 or tapped$2 or fac$4))	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S25	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2 near8 (picked$2 or rotat$4 or tapped$2 or	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24

		fac$4))				
S26	0	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) same (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S27	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S28	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/07/12 14:24
S29	971	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S30	971	S28 or S29	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S31	4	S30 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S32	12173	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/07/12 14:24
S33	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S34	0	S33 S32	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S35	4	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$).did. or (US-10029696-$).did.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S36	29543	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24

		H04W4/48).CPC.)				
S37	36181	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S38	35240	S37 "6"	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S39	17	S37 S33	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:24
S40	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/07/12 14:24
S41	163	("2012/0071151").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S42	27	("2016/0216130").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S43	2	("2016/0006860").URPN.	USPAT	AND	OFF	2019/07/12 14:24
S44	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25
S45	5	("20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/07/12 14:25
S46	23	driv$4 same (telephon$3 near4 call) same (headset2 or handset2 or speaker$2) same distraction$2	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 01:27
S47	4	("20160006860" | "20170105098").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 09:54
S48	2	("20180075309").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/25 10:41
S49	0	"16403761"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/28 14:36
S50	22	("20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" |	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:18

		"20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.				
S51	22	("20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" | "20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:18
S52	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2019/10/29 20:24
S53	30864	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:24
S54	37685	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2019/10/29 20:24
S55	3	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2019/10/29 20:25
S56	987	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/10/29 20:25
S57	987	S55 or S56	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/10/29 20:25
S58	4	S57 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2019/10/29 20:25
S59	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same	US-PGPUB; USPAT;	AND	OFF	2019/10/29 20:27

		(trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	FPRS; EPO; JPO			
S60	13525	(G08B21/18 or G09B19/00).cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/14 12:03
S61	30363	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:03
S62	37497	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:03
S63	4	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2020/03/14 12:03
S64	1001	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/14 12:03
S65	1001	S63 or S64	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/14 12:03
S66	1001	S63 or S64	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/14 12:03
S67	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/14 12:04
S68	6	S65 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/14 12:04
S69	40	("10296785" | "10388249" | "20050015016" | "20110136480" | "20120329444" | "20140354574" |	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:09

		"20160165031" | "20160270025" | "20170236411" | "20170279957" | "20170365007" | "20180081614" | "20180144636" | "20180322413" | "20190111844" | "20190168771" | "20190225080" | "20190265868" | "20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" | "20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.				
S70	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/14 12:27
S71	0	"16403761"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/14 12:47
S77	2	"20170363457"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/16 11:57
S78	0	("2017/0363457").URPN.	USPAT	AND	OFF	2020/03/16 11:57
S79	76	("0062866" | "0193761" | "0423018" | "0494467" | "0662273" | "0678325" | "0703097" | "0792380" | "0923618" | "1168027" | "1564470" | "1602937" | "1683191" | "1744328" | "20010042402" | "20050011261" | "20060016257" | "20070227245" | "20090056440" | "20090173153" | "20090255333" | "20090302068" | "20100011855" | "2204730" | "2328995" | "2329437" | "2478272" | "2479007" | "2551002" | "2583808" | "2625044" | "2625824" | "2642744" | "2758771" | "2801541" | "2839928" | "2931230" | "3712139" | "4488432" | "4986464" | "5397036" | "5447245" | "6026685" | "6283732" | "7658106" | "7882737" | "8210380" | "8382730").PN. OR ("10209116").URPN.	US-PGPUB; USPAT; USOCR	AND	OFF	2020/03/16 11:57
S80	12	("2007/0227245").URPN.	USPAT	AND	OFF	2020/03/16 12:01
S81	1	(diper$3) same (detect$4 or sens$4) same (recharg$4 or charg$4) same (transm$4 or communicat$4)	USPAT	AND	OFF	2020/03/16 15:00
S82	2	(diper$3) same (detect$4 or sens$4) same (recharg$4 or charg$4) same (transm$4 or communicat$4)	US-PGPUB; USPAT;	AND	OFF	2020/03/16 18:21

			FPRS; EPO; JPO			
S83	109	"5036859"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 00:20
S84	3	("20140097679" | "20100139733").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 08:50
S85	1	("20120299730").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 09:38
S86	1	("2012/0299730").URPN.	USPAT	AND	OFF	2020/03/17 09:39
S87	1	("2012/0299730").URPN.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 09:39
S88	46	("20030216670" | "20030233034" | "20040236202" | "20050096559" | "20050107722" | "20050148904" | "20060076103" | "20060084855" | "20060112489" | "20060129047" | "20070112283" | "20070118054" | "20080132808" | "20090062693" | "20090287120" | "20100174198" | "20100174199" | "20100268121" | "20110009776" | "20110245732" | "20110251522" | "20110319787" | "20120053424" | "20120259181" | "20120299730" | "3926177" | "3996922" | "4665926" | "5148706" | "5808552" | "5902255" | "6450957" | "6468234" | "6493568" | "6778090" | "7183930" | "7431700" | "7603217" | "7650803" | "7883478" | "8075499" | "8123685" | "8272892" | "8419660" | "8672842" | "8752220").PN. OR ("9138190").URPN.	US-PGPUB; USPAT; USOCR	AND	OFF	2020/03/17 09:39
S89	12	("2007/0227245").URPN.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 09:41
S90	4	("5036859" | "20120299730").pn.	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 09:45
S91	23	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$ or US-20170105098-$ or US-20150312655-$ or US-20110145863-$ or US-20110265003-$ or US-20020090981-$ or US-20120299730-$ or US-20040207530-$).did. or (US-9039648-$ or US-9545342-	US-PGPUB; USPAT	AND	OFF	2020/03/17 17:31

		$ or US-10029696-$ or US-10349239-$ or US-10097683-$ or US-9228836-$ or US-8457880-$ or US-10350115-$ or US-10155082-$ or US-10130523-$ or US-10111787-$ or US-9726629-$ or US-9645218-$).did.				
S92	23	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$ or US-20170105098-$ or US-20150312655-$ or US-20110145863-$ or US-20110265003-$ or US-20020090981-$ or US-20120299730-$ or US-20040207530-$).did. or (US-10029696-$ or US-10349239-$ or US-10097683-$ or US-9228836-$ or US-8457880-$ or US-10350115-$ or US-10155082-$ or US-10130523-$ or US-10111787-$ or US-9726629-$ or US-9645218-$ or US-9039648-$ or US-9545342-$).did.	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:53
S93	37578	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:54
S94	30429	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:54
S95	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 20:54
S96	4	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2020/03/17 20:54
S97	1001	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:54
S98	1001	S96 or S97	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:54
S99	6	S98 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:54

S100	23	driv$4 same (telephon$3 near4 call) same (headset2 or handset2 or speaker$2) same distraction$2	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 20:55
S101	4	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2020/03/17 20:56
S102	1001	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:56
S103	1001	S101 or S102	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:56
S104	6	S103 and (mobile$2 and distraction$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:56
S105	4	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2020/03/17 20:56
S106	1001	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:56
S107	1001	S105 or S106	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 20:56
S108	40	("10296785" | "10388249" | "20050015016" | "20110136480" | "20120329444" | "20140354574" | "20160165031" | "20160270025" | "20170236411" | "20170279957" | "20170365007" | "20180081614" | "20180144636" | "20180322413" | "20190111844" | "20190168771" | "20190225080" | "20190265868" | "20140168057" | "20140256303" | "20140353574" | "20160014262" | "20160044156" | "20160267335" | "20170210290" | "20180126901" | "20180167502" | "20180173934" | "20190034873" | "20190051305" | "20190096215" | "20190102840" | "20190159166" | "20190185018" | "5148153" | "20150312655" | "20170105098" | "20190116463" | "8457880" | "9228836").PN.	US-PGPUB; USPAT	AND	OFF	2020/03/17 21:02

S109	48	("2016/0216130").URPN.	USPAT	AND	OFF	2020/03/17 21:08
S110	23	driv$4 same (telephon$3 near4 call) same (headset2 or handset2 or speaker$2) same distraction$2	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 21:08
S111	23	(US-20120071151-$ or US-20160216130-$ or US-20160006860-$ or US-20170105098-$ or US-20150312655-$ or US-20110145863-$ or US-20110265003-$ or US-20020090981-$ or US-20120299730-$ or US-20040207530-$).did. or (US-9039648-$ or US-9545342-$ or US-10029696-$ or US-10349239-$ or US-10097683-$ or US-9228836-$ or US-8457880-$ or US-10350115-$ or US-10155082-$ or US-10130523-$ or US-10111787-$ or US-9726629-$ or US-9645218-$).did.	US-PGPUB; USPAT	AND	OFF	2020/03/17 21:09
S112	4	((("CAMBRIDGE") near3 ("MOBILE") near3 ("TELEMATICS") near3 ("INC"))).AS,AANM.	USPAT	AND	OFF	2020/03/17 21:10
S113	1001	((("BALAKRISHNAN") near3 ("Hari")) OR (("BRADLEY") near3 ("William")) OR (("MADDEN") near3 ("Samuel")) OR (("PARK") near3 ("Jun-geun"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 21:10
S114	1001	S112 or S113	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	OFF	2020/03/17 21:10
S115	0	"16403761"	US-PGPUB; USPAT; FPRS; EPO; JPO	AND	OFF	2020/03/17 21:29

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S72	30363	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:03
S73	37497	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:03

S74	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:04
S75	30363	S72 S73	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:05
S76	17	S74 S75	US-PGPUB; USPAT	AND	OFF	2020/03/14 12:05
S116	30429	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:56
S117	37578	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:57
S118	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2) and (operation$2 near3 state$2)) and (distraction$2)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:57
S119	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:57
S120	30429	((H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:58
S121	37578	((G08B21/18 or G09B19/00 or H04M1/72577 OR H04M2250/10 OR H04M2250/12 OR H04M1/6091 OR H04M1/72572 OR H04M2250/52 OR B60W2050/146 OR B60W2550/402 OR B60W40/09 OR B60W50/14 OR G08G1/096844 OR H04W4/026 OR H04W4/48).CPC.)	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:58
S122	30429	S120 S121	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:58
S123	19	(mobile same gyroscop$4 same accelerometer$2 same (seed$4 or velocit$4 or acceleration$2) same (trajector$4 or	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:58

		orbit$2 or direction$2 or route$2)) and (operation$2 near3 state$2) and (distraction$2)				
S124	17	S123 S122	US-PGPUB; USPAT	AND	OFF	2020/03/17 20:58

3/18/2020 8:13:44 PM
C:\Users\fgirma\Documents\EAST\Workspaces\16403761 DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER_1.wsp

Bibliographic Data

Application No: 16/403,761

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /FEKADESELASSIE GIRMA/ (Examiner's Signature) | (Initials)

Title: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/06/2019	340	2689	44355-0046001
RULE			

APPLICANTS

Cambridge Mobile Telematics Inc., Cambridge, MA,

INVENTORS

Hari Balakrishnan Belmont, MA, UNITED STATES

William Bradley Arlington, MA, UNITED STATES

Samuel Ross Madden Newton, MA, UNITED STATES

Jun-geun Park Cambridge, MA, UNITED STATES

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

05/15/2019

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022
UNITED STATES

FILING FEE RECEIVED

$3,355

Sheet 1 of 1

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	44355-0046001	16/403,761
	Applicant: Cambridge Mobile Telematics Inc.	
	Filing Date: May 6, 2019	Group Art Unit: 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	10296785	5/21/2019	Chan et al.			
	2.	10388249	8/20/2019	Beckman			
	3.	20050015016	1/20/2005	Elitok et al.			
	4.	20110136480	6/9/2011	Osann			
	5.	20120329444	12/27/2012	Osann			
	6.	20140354574	12/4/2014	Hirabayashi et al.			
	7.	20160165031	6/9/2016	Gopinath			
	8.	20160270025	9/15/2016	Osann			
	9.	20170236411	8/17/2017	Sumers			
	10.	20170279957	9/28/2017	Abramson et al.			
	11.	20170365007	12/21/2017	Huls			
	12.	20180081614	3/22/2018	Tsai et al.			
	13.	20180144636	5/24/2018	Becker			
	14.	20180322413	11/8/2018	Yocam et al.			
	15.	20190111844	4/18/2019	Suzuki et al.			
	16.	20190168771	6/6/2019	Migneco et al.			
	17.	20190225080	7/25/2019	Mueller et al.			
	18.	20190265868	8/29/2019	Penilla et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered
/FEKADESELASSIE GIRMA/	03/17/2020

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Confirmation No.	:	5174
			Notice of Allowance Date: 3/25/2020		
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER ALLOWANCE
PURSUANT TO 37 C.F.R. §1.312

Please amend the application as indicated on the following pages. This amendment is being filed concurrently with the payment of the issue fee.

Electronic Patent Application Fee Transmittal

Application Number:	16403761
Filing Date:	06-May-2019
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Filer:	Christopher Leo Reilly/Cathy O'Brien
Attorney Docket Number:	44355-0046001

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	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**500**

Electronic Acknowledgement Receipt

EFS ID:	39113093
Application Number:	16403761
International Application Number:	
Confirmation Number:	5174
Title of Invention:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER
First Named Inventor/Applicant Name:	Hari Balakrishnan
Customer Number:	26161
Filer:	Christopher Leo Reilly/Cathy O'Brien
Filer Authorized By:	Christopher Leo Reilly
Attorney Docket Number:	44355-0046001
Receipt Date:	09-APR-2020
Filing Date:	06-MAY-2019
Time Stamp:	14:58:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$500
RAM confirmation Number	E202049E59209196
Deposit Account	061050
Authorized User	Cathy O'Brien

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

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Reply.pdf	80491 59ba191c3d76b50ad957bcfc20670f72e8c89f04	yes	3
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Miscellaneous Incoming Letter		2	3	
	Miscellaneous Incoming Letter		1	1	
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	PartB.pdf	162407 9fe7a9ad19166182a8c39fbd1de76dfe17abf1d8	no	1
Warnings:					
Information:					
3		Amendment.pdf	82561 44d61a15e3bac23b13df4dc1cb3e67feb02d37b3	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
	Claims		2	5	
	Amendment after Notice of Allowance (Rule 312)		1	1	
Warnings:					
Information:					

4	Fee Worksheet (SB06)	fee-info.pdf	30269 15bd3e16ece14e844d82431c500c443f2fd9ea3c	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	355728

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Confirmation No.	:	5174
			Notice of Allowance Date: March 25, 2020		
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON THE ALLOWANCE

The applicant does not concede (1) any reasons for allowance stated by the examiner are the only reasons for which the claims are patentable, (2) that any limitations identified by the examiner are necessary to the patentability of the claims, (3) that the examiner's interpretation of the claims may not be incorrect, (4) that the examiner's reasons bear on the patentability of claims in any other patent applications, (5) that although the reasons may have indicated that individual claim elements were not described or made obvious by the prior art, the claims may not be patentable for other reasons as well, including the combination of all of the elements recited in each of the claims, (6) that each dependent claim may not be patentable based on a combination of features recited in the dependent claim and its base claim(s), even though those features do not include all of the limitations identified in the examiner's reasons for allowance, or (7) that other claims, including claims that are broader or narrower than the ones allowed, are not also patentable.

The applicant does not relinquish and reserves the right to pursue claims that are broader or narrower than the ones allowed and to pursue other claims in other patent applications or reissue or re-examined applications including applications that are entitled to the priority of this application.

Please apply any necessary charges or credits to deposit account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: April 9, 2020

/Christopher Reilly/

Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

24008380.doc

Petitioner Ex 1002, p. 287
Zendrive v. CMT, IPR2023-01440

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Confirmation No.	:	5174
			Notice of Allowance Date: March 25, 2020		
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE OF ALLOWANCE DATED MARCH 25, 2020

Enclosed are a Part B – Fee(s) Transmittal Form, Comments on Examiner's Reasons for Allowance and an Amendment after Allowance.

Please apply $500 for the required issue fee and publication fee and any other charges or credits to deposit account 06-1050, referencing attorney docket 44355-0046001.

Respectfully submitted,

Date: April 9, 2020

/Christopher Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

24008380.doc

PART B - FEE(S) TRANSMITTAL

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

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22314-1450

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

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

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

26161 7590 03/25/2020

FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Cathy A. O'Brien	(Typed or printed name)
/Cathy A. O'Brien/	(Signature)
April 9, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

TITLE OF INVENTION: DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	06/25/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
GIRMA, FEKADESELASSIE	2689	340-691600

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

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

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

2. For printing on the patent front page, list

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

(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 Fish & Richardson P.C.
2
3

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

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

(A) NAME OF ASSIGNEE: Cambridge Mobile Telematics Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Cambridge, MA

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

4a. Fees Submitted: [X] Issue Fee [ ] Publication Fee (if required) [ ] Advance Order - # of Copies

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

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

[X] The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account No. 06-1050

5. **Change of 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 as a notification of loss of entitlement to micro entity status.

[ ] Applicant changing to regular undiscounted fee status. — **NOTE**: Checking this box will be taken as 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 /Christopher Reilly/ Date April 9, 2020

Typed or printed name Christopher L. Reilly Registration No. 74,063

REMARKS

Applicant has amended claims 11, 22, and 26 to correct typographical errors. No new matter was added. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: April 9, 2020 /Christopher Reilly/

Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

24008385.doc

Listing of Claims (replacing prior versions):

1. (previously presented) A method comprising

receiving signals from one or more detectors of a mobile device while the mobile device is on a trip in a vehicle,

using the received signals from the one or more detectors to identify one or more physical states of the mobile device during the trip, the one or more physical states comprising motion of the mobile device along a trajectory of the trip,

based on the identified one or more physical states, separately generating two or more discrete distraction events separated in time, each of the discrete distraction events comprising concurrent motion of the mobile device and interaction with the mobile device by an occupant of the vehicle, and

determining a distraction episode that extends from a start to an end of an interval and encompasses two or more of the discrete distraction events occurring in the interval and during the trip in the vehicle, the determining of the distraction episode comprising determining a possible distraction episode and after the possible distraction episode is determined, determining that the possible distraction episode comprises a true distraction episode.

2. (previously presented) The method of claim 1 in which the one or more physical states comprises an operational state of the mobile device.

3. (original) The method of claim 2 in which the operational state comprises a state of locking of the mobile device.

4. (original) The method of claim 3 in which the operational state comprises a state of a phone call.

5. (original) The method of claim 4 in which the operational state comprises a power condition.

6. (original) The method of claim 4 in which the operational state comprises an aspect of a foreground app running on the mobile device.

7. (canceled)

8. (original) The method of claim 1 in which determining a distraction episode comprises determining that a physical state of the mobile device comprises no interaction by a user or that accelerometer or gyroscope values are lower than a threshold that differs from a threshold used in determining motion of the mobile device at the start of the distraction episode.

9. (original) The method of claim 8 in which the end of the distraction episode is not determined until after a refractory period of no further movement of the mobile device or no indication of a continued distraction.

10. (original) The method of claim 9 in which determining an end of the distraction episode comprises determining that a context of the mobile device indicates no further distraction.

11. (currently amended) The method of claim 10 in which determining that the possible distraction episode comprises a true distraction episode includes ~~comprises~~ determining that a time period spanned by the possible distraction episode is longer than a predetermined length.

12. (previously presented) A method comprising

receiving signals from one or more detectors of a mobile device while the mobile device is on a trip in a vehicle,

using the received signals from the detectors to identify one or more physical states of the mobile device during the trip in the vehicle,

determining a possible distraction episode based on one or more of the physical states,

based on the received signals, determining that the mobile device is engaged in an active telephone call,

based on the received signals, determining whether the mobile device is engaged in the active telephone call using a handset speaker, an internal speaker phone, or an external speaker, and

after the possible distraction episode is determined, determining whether the possible distraction episode comprises a true distraction episode based on the determination of whether the device is engaged in the active telephone call using the handset speaker, the internal speaker phone, or the external speaker.

13. (canceled)

14. (original) The method of claim 12 comprising

based on the received signals, determining a proximity of a user's hand to the mobile device.

15. (original) The method of claim 12 comprising

based on the received signals, determining whether a display screen of the mobile device is being tapped.

16. (original) The method of claim 12 comprising

based on the received signals, identifying a foreground app running on the mobile device.

17. (original) The method of claim 12 comprising

based on the received signals, determining a behavior of a conveyance being used for the trip.

18. (previously presented) The method of claim 12 comprising

determining a context of a possible distraction episode based on detecting a rotation of a display screen of the mobile device.

19. (original) The method of claim 18 comprising

detecting a tap on the display screen based on a parameter of the rotation.

20. (original) The method of claim 12 comprising

based on the received signals, determining a frequency of taps on a display screen of the mobile device.

21. (original) The method of claim 12 comprising

based on the received signals, comparing temporal parameters of a sequence of taps on a display screen of the mobile device with temporal parameters of known sequences of taps on display screens of mobile devices.

22. (currently amended) The method of claim ~~20~~ 21 comprising

determining an occurrence of a tapping event based on a tapping score based on taps in the sequence and periods of time between successive taps.

23. (original) The method of claim 12 comprising

based on the received signals, determining an orientation of the mobile device or a display screen of the mobile device during the possible distraction episode.

24. (previously presented) The method of claim 23 comprising

based on the orientation of the mobile device or the display screen of the mobile device, identifying a context of the possible distraction episode.

25. (original) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile device is oriented generally vertically, and the mobile device has not been substantially rotated during at least a threshold period, and

the context of the possible distraction episode comprises the mobile device being mounted in the conveyance.

26. (currently amended) The method of claim 24 in which

the display screen of the mobile device faces the back of a conveyance used for the trip, the mobile ~~devices~~ device is oriented in a direction for normal use by an occupant of a conveyance, and

the context of the possible distraction episode is not that the mobile ~~devices~~ device is mounted.

27. (previously presented) The method of claim 24 in which

the display screen of the mobile device faces generally to a side of a conveyance used for the trip, and the top end of the display screen is oriented generally upwardly, and

the context of the possible distraction episode comprises the mobile device being held in the vicinity of any ear of an occupant of the conveyance.

28. (original) The method of claim 24 in which

the display screen of the mobile device faces generally downwardly, and

the context of the possible distraction episode comprises the mobile device not being used.

29. (previously presented) The method of claim 24 comprising

reporting the context and the possible distraction episode to a user of the mobile device.

30. (previously presented) The method of claim 24 comprising

scoring the possible distraction episode using the context.

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.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 04/22/2020
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
04/22/2020	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Petitioner Ex 1002, p. 295
Zendrive v. CMT, IPR2023-01440

Corrected ***Notice of Allowability***	**Application No.** 16/403,761	**Applicant(s)** Balakrishnan et al.	
	Examiner FEKADESELASSIE GIRMA	**Art Unit** 2689	**AIA (FITF) 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 Printer Rush 04/15/2020.
   ☐ 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 1-6,8-12 and 14-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

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

/FEKADESELASSIE GIRMA/
Primary Examiner, Art Unit 2689

Petitioner Ex 1002, p. 296
Zendrive v. CMT, IPR2023-01440

Sheet 1 of 1

Substitute Disclosure Form / U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	44355-0046001	16/403,761
	Applicant: Cambridge Mobile Telematics Inc.	
	Filing Date: May 6, 2019	Group Art Unit: 2689

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Filing Date If Appropriate	Class	Subclass
	1.	20110306304	12/15/2011	Forutanpoour et al.			
	2.	20160205238	7/14/2016	Abramson et al.			
	3.	20170108868	4/20/2017	Johnson et al.			
	4.	20180075309	3/15/2018	Sathyanarayana			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Translation	Class	Subclass

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G/

Examiner Signature	Date Considered
/FEKADESELASSIE GIRMA/	04/17/2020

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /F.G/

Attorney Docket No.: 44355-0046001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Conf. No.	:	5174
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

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

INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the disclosure form submitted with this statement. Copies of the documents are being submitted with this statement to the extent required under 37 C.F.R. § 1.98(a)(2).

This statement is being filed after a request for continued examination and before the mailing of a first action.

Apply any necessary charges or credits applicable under 37 C.F.R. § 1.17(p) to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this statement.

Respectfully submitted,

Date: March 19, 2020

/Christopher Reilly/
Christopher L. Reilly
Reg. No. 74,063

Customer Number 26161
Fish & Richardson P.C.
Telephone: +1 (617) 368-2170
Facsimile: (877) 769-7945

100136359.doc

/FEKADESELASSIE GIRMA/ 04/17/2020

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /FG/

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.
16/403,761	05/06/2019	Hari Balakrishnan	44355-0046001	5174

26161 7590 04/23/2020
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
GIRMA, FEKADESELASS	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
04/23/2020	ELECTRONIC

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

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

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

PATDOCTC@fr.com

Petitioner Ex 1002, p. 299
Zendrive v. CMT, IPR2023-01440

Response to Rule 312 Communication	Application No.	Applicant(s)	
	16/403,761	Balakrishnan et al.	
	Examiner	Art Unit	AIA (FITF) Status
	FEKADESELASSIE GIRMA	2689	Yes

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

1. ☑ The amendment filed on 17 April 2020 under 37 CFR 1.312 has been considered, and has been:

a) ☑ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

/FEKADESELASSIE GIRMA/
Primary Examiner, Art Unit 2689

Petitioner Ex 1002, p. 300
Zendrive v. CMT, IPR2023-01440

OK TO ENTER: /F.G/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	:	Hari Balakrishnan	Art Unit	:	2689
Application No.	:	16/403,761	Examiner	:	Fekadeselassie Girma
Filed	:	May 6, 2019	Confirmation No.	:	5174
			Notice of Allowance Date: 3/25/2020		
Title	:	DETERMINING, SCORING, AND REPORTING MOBILE PHONE DISTRACTION OF A DRIVER			

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER ALLOWANCE
PURSUANT TO 37 C.F.R. §1.312

Please amend the application as indicated on the following pages. This amendment is being filed concurrently with the payment of the issue fee.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/403,761	Balakrishnan et al.
	Examiner	**Art Unit**
	FEKADESELASSIE GIRMA	2689

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	17	19	26	28								
2	2	10	11	18	20	27	29								
3	3	11	12	~~20~~19	21	28	30								
4	4		13	~~19~~20	22										
5	5	12	14	21	23										
6	6	13	15	22	24										
	7	14	16	23	25										
7	8	15	17	24	26										
8	9	16	18	25	27										

Change(s) applied
to document,
/J.H./
4/28/2020

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	28	
/FEKADESELASSIE GIRMA/ Primary Examiner, Art Unit 2689	18 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

Petitioner Ex 1002, p. 302
Zendrive v. CMT, IPR2023-01440

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/403,761	06/02/2020	10672249	44355-0046001	5174

26161 7590 05/13/2020

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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):

Cambridge Mobile Telematics Inc., Cambridge, MA;
Hari Balakrishnan, Belmont, MA;
William Bradley, Arlington, MA;
Samuel Ross Madden, Newton, MA;
Jun-geun Park, Cambridge, MA;

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.

Petitioner Ex 1002, p. 303
Zendrive v. CMT, IPR2023-01440

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	9/23/2022	for the District of Delaware

PLAINTIFF	DEFENDANT
CAMBRIDGE MOBILE TELEMATICS, INC.	ZENDRIVE, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,228,836 B2	1/5/2016	Cambridge Mobile Telematics
2	US 10,349,219 B2	7/9/2019	Cambridge Mobile Telematics Inc.
3	US 10,672,249 B1	6/2/2020	Cambridge Mobile Telematics Inc.
4	US 10,930,090 B2	2/23/2021	Cambridge Mobile Telematics Inc.
5	US 10,967,872 B2	4/6/2021	Cambridge Mobile Telematics Inc.

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy