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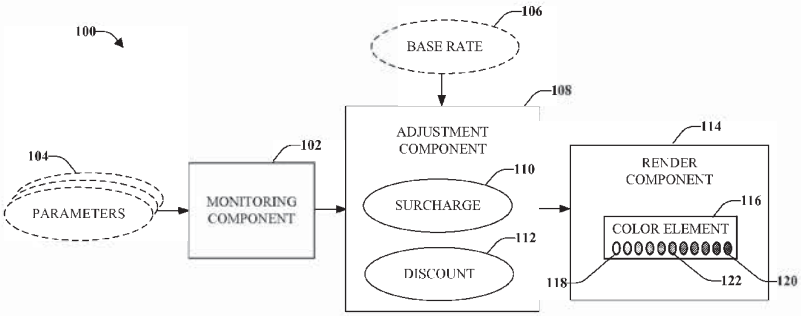


FIG. 1

(57) Abstract: Dynamic insurance rate adjustments or incentive offer(s) to adopt dynamic insurance coverage are communicated to a vehicle operator in order to allow the vehicle operator to adjust various parameters before an actual change to an insurance rate is communicated to a service provider or trusted third party. The various parameters can be external parameters and/or internal parameters and further can include historical information, current information, and/or predicted information. The insurance rate adjustment or incentive offer(s) is communicated though a device located within a vehicle to enable perception by a vehicle occupant. The various parameters also can be collected from an operation environment of the vehicle. The operator can regulate the scope of the various parameters and the incentive offer(s). Offered incentives can be afforded at least in part through monetization of available information related to vehicle operation information via commercialization thereof or targeted advertisement.

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DYNAMIC INSURANCE CUSTOMIZATION AND ADOPTION

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application Serial No. 61/118,400, filed on November 26, 2008, entitled "INSURANCE OPTIMIZER AND REAL TIME ANALYTICS", and U.S. Patent Application Serial No. 12/395,342, entitled "VISIBLE INSURANCE" and filed on February 27, 2009, and U.S. Patent Application Serial No. 12/490,033, entitled "INSURANCE VERTICAL MARKET SPECIALIZATION" and filed on June 23, 2009, and U.S. Patent Application Serial No. 12/498,446, entitled "INSURANCE VERTICAL MARKET SPECIALIZATION", and filed on July 7, 2009, and U.S. Patent Application Serial No. 12/536,999 entitled "DYNAMIC INSURANCE RATES", and filed on August 6, 2009, and U.S. Patent Application Serial No. 12/547,800 entitled "REAL TIME INSURANCE GENERATION" and filed on August 26, 2009, and U.S. Patent Application Serial No. 12/612,958, entitled "INSURANCE VISIBILITY", filed on November 5, 2009, U.S. Patent Application Serial No. 12/624,371, entitled, "INCENTIVIZED ADOPTION OF TIME-DEPENDENT INSURANCE BENEFITS' and filed on November 23, 2009, and U.S. Patent Application Serial No. 12/624,366, entitled "MONETIZATION OF PERFORMANCE INFORMATION OF AN INSURED VEHICLE," filed on November 23, 2009. The entireties of above-captioned applications are incorporated herein by reference.

BACKGROUND

[0002] Insurance coverage is a commodity that many people purchase for peace of mind and/or because local laws require such coverage. Insurance is typically acquired for many facets of life, including but not limited to automobiles, homes, health, life, disability, shipping goods, personal property, and so forth, to financially protect assets from unknown or unpredictable occurrences. Thus, most people might consider insurance as something that is necessary and, at times, undesirable due to the high cost of insurance premiums.

[0003] Additionally, at least some consumers are not loyal to a particular insurance provider and might purchase insurance from a lowest cost provider in an attempt to save money. These cost conscious consumers might shop around for insurance to find lower rates, which such consumers can obtain in exchange for a

reduction in the coverage amount for each occurrence and/or the type of coverage purchased. As a result, insurance providers, or insurance carriers, aggressively pursue service and benefit(s) differentiation, regardless how marginal, in order to mitigate prevalent consumer attrition.

[0004] In many cases, insurance is obtained by receiving quotes from various companies and selecting the most desirable policy considering coverage, price, and other factors. Insurance companies calculate premiums for coverage through complex models based upon a variety of factors. The goal of these models is to determine a risk level associated with a driver or vehicle – based upon the risk level, an amount for the premium can be ascertained. Age, driver citation history, and other factors can be used in determining the risk level and thus ascertaining the amount for a premium. In this regard, insurance companies generate coverage premiums based on a number of factors that represent averaged scenarios regarding the item to be covered.

[0005] Further, insurance companies typically have highly proprietary systems that automatically generate premiums using the factors, and each insurance company typically has its own system resulting in varying premiums for different items with respect to different policyholders and desired coverage levels. Thus, it can be difficult for insurance companies to compete with one another, which can also lead to higher premium quotes for all companies.

[0006] Insurance premiums are typically fixed in price and billed in monthly, semi-annual, or annual time periods. Premiums can be affected by many policy parameters for which cost is averaged and can be adjusted for a given billing period. Insurance coverage typically applies to risk units (*e.g.*, a scenario or circumstance that may be exposed to loss). For example, risk units can comprise buildings, vehicles, personal property, on-going business, or the like. With respect to automobile insurance, for example, rates can be set and/or adjusted based on desired coverage level, automobile make, model, and color, automobile features, estimated miles driven each year, zip code of primary automobile location, whether the automobile is garaged, driving history of the policyholder, credit score, *etc*. In addition, rates can be adjusted at the end of a premium period based on number of claims filed in the primary zip code, weather conditions in the zip code, global factors, and other parameters unrelated to the driver or automobile being covered. Such factors on which rates are adjusted are commonly directly unrelated to features or characteristics of a beneficiary, e.g., an automobile owner, of an insurance benefit policy.

Accordingly, adjustment to insurance benefit(s), e.g., insurance coverage, and pricing thereof can significantly fail to timely accommodate changes to the beneficiary's needs or be supplied at a fair price-point. With such speculative and broad premium computation, it can be difficult to offer competitive comprehensive insurance policies for certain scenarios, which can hinder the market for insurance.

[0007] Put differently, an insurance company determines insurance costs based on insurance models that classify segments of the population to groups sharing similar data, such as data on features of beneficiary (e.g., health condition(s)) or property intended to be insured (car make and model, car color, car features, whether the car is garaged, estimated miles to/from the office, *etc.*); demographic data (e.g., age group, sex, marital status, educational background, ethnicity); historical data related to intended insurance benefit, which can include driving history as recorded primarily based on an event basis (accident(s), ticket(s) for traffic violation, processed claim(s), etc.); environmental factors related to where the prospective beneficiary lives, which is commonly factored in through ZIP code and available information thereof, recorded appraised value of property, crime rate in the area; and so forth. For each segment, the insurance model then employs a "one size fit" for all members– with no further differentiation. Nonetheless, such approach fails to consider additional variances that exist between members in same category, and hence squanders valuable data related to each individual's unique traits that can further affect respective insurance rates. More importantly, in some cases, the segments upon which rates are determined do not adequately represent a prospective beneficiary's potential coverage liability. As an example, with respect to motor vehicle insurance and for a specific segment, a first operator of a car may commute to work using inner-city streets while a second operator of a second car can commute through a highway.

[0008] Insurance policies typically include legal agreements that specify items to be afforded coverage with respect to particular perils. For such agreements, numerous conditions apply, such as applicable deductibles, coverage limits, and the like, wherein related expense/billing can further be broken down into elements by covered item and peril.

[0009] Moreover, insurance carriers often view such policies as being derived from and related to a "policy product". Typically, a policy product defines the attributes and shared data for its derived policies, wherein a process of writing a specific policy involves referring to the available attributes of the policy as defined by

the policy product and the corresponding selection of appropriate values for a given customer. As such, a coverage typically comprises an obligation to pay for damages that are caused by a particular peril (or collection of perils). Such obligation typically has corresponding financial limits and deductibles that circumscribe the insurer's responsibility for losses against that coverage. For example, a policy's total cost is usually determined as a function of the aggregate cost of the policy's constituent coverage sections.

[0010] A person can pay an insurance premium at one instance for coverage over a block of time, such as making a payment semi-annually for six months of coverage. Once the premium is paid, the driver commonly does not think about insurance until the next payment is due or an incident occurs that brings the premium to the driver's consciousness (*e.g.*, being in an automobile accident). With limited and infrequent thought to insurance premiums, drivers can be less likely to perform actions that are beneficial to lowering their premiums as well as their risk factor.

[0011] Further, it is almost impossible to determine (without specifically asking the question) whether an individual has insurance and the name of the insurance carrier. Thus, if a person asks to be driven to another location, that person might be in a vehicle that does not have insurance coverage, which can result in excessive expenses if an accident occurs during the trip. Therefore, as a passenger in a vehicle (or as another person that can suffer loss (*e.g.*, bodily damage, property damage, and so forth) caused by the driver), it can be less than obvious whether damages resulting from an accident will be, at least partially, covered by insurance.

[0012] The automobile insurance industry has been exploring ways in which it can take advantage of information about a vehicle's location, conditions of operation, and other factors, to assess risk dynamically and thereby adjust insurance rates. Some devices collect and integrate information related to a vehicle. These devices are used as black boxes that operate outside the user's visual awareness or that provide feedback through web pages or Global Positioning System (GPS) displays. This black box approach renders the service invisible to the insurance consumer and/or is only communicated to the consumer when bills are generated or when the consumer accesses a particular web page for the information. Further, if feedback is provided through web pages or GPS displays, there is additional complexity that adds a new set of controls to the various controls the driver must already contend with, thereby

relegating the use of feedback to times when the operator is not actually driving in order to not increase the prospects of driver distraction.

SUMMARY

[0013] The following presents a simplified summary in order to provide a basic understanding of some aspects described herein. This summary is not an extensive overview nor is this summary intended to identify key and/or critical elements or to delineate the scope of various aspects described herein. Its sole purpose is to present some concepts in a simplified form as a prelude to the more detailed description that is presented later.

[0014] In accordance with one or more examples and corresponding disclosure thereof, various aspects are described in connection with optimizing insurance from the perspective of both the insurance provider and the insurance purchaser. According to an aspect, real time (or near real time) analytics is utilized to selectively provide information related to a potential adjustment to insurance premiums, coverage, and other parameters.

[0015] An aspect relates to summarizing information related to insurance and rendering the information in the form of an attractive and simple device. The device can emit a soft glow reflecting the safety, cost, environmental impact, or other factors, of a current driving situation. In accordance with some aspects, the device can provide the indications of the current driving situation in any perceivable format, including visual format and audio format. Further, the disclosed aspects have the added benefit of making the insurance carrier visible to the driver and passengers of the vehicle. The disclosed aspects can further relate to a vehicle operator complying with requirements of a single insurance company to maintain current insurance rates and/or to lower (or in some cases increase) an insurance rate (*e.g.,* a surcharge or a discount is applied to a base rate).

[0016] An aspect relates to a system for enabling visibility of insurance. The system includes a monitoring component that gathers one or more parameters that can have an influence on a base rate of insurance. The system also includes an adjustment component that selectively modifies the base rate of insurance to produce a modified insurance cost (*e.g.*, in the form of a surcharge, or discount) as a function of the one or more parameters. Further, system includes a render component that dynamically

outputs the surcharge or the discount to an operator of the vehicle while the vehicle is in operation.

[0017] Another aspect relates to a method that facilitates providing visibility of a cost of insurance. The method includes gathering one or more parameters related to a vehicle covered by an insurance policy and selectively modifying the cost of the insurance policy as a function of the one or more parameters. The method also includes presenting the modified cost of the insurance policy to an operator of the vehicle.

[0018] In accordance with another aspect is a system that provides insurance visibility. The system includes means for obtaining one or more parameters associated with an insured vehicle and means for utilizing the one or more parameters to modify an insurance cost of the insured vehicle. The system also includes means for outputting the modified insurance cost, a comparison between an original insurance cost and the modified insurance cost, and the one or more parameters to an operator of the insured vehicle while the insured vehicle is in operation. In accordance with some aspects, system includes means for engaging the operator of the insured vehicle in a dialogue, associated with the modified insurance cost, wherein, based on the dialogue, the means for utilizing the one or more parameters to modify the insurance cost of the insured vehicle applies a further modification to the insurance cost. According to some aspects, the means for utilizing the one or more parameters to modify the insurance cost of the insured vehicle increases the insurance cost or decreases the insurance cost as a function of whether the one or more parameters tend to increase or decrease an amount of insurance claims.

[0019] Vertical market specialization for insurance is provided allowing insurance companies to offer policies in more granular coverage scenarios. For example, an automobile driver can obtain coverage on a per trip or per route basis, based on trip details, one or more environmental details of the car, driving behavior, car equipment, and/or the like. This allows an insurance company to provide a quote based not only on typical factors of driving history, automobile specifications, *etc.*, but also on planned, real time, or near real time aspects of a trip, such as roads traveled, cities visited, amount of time the car is left in a city, average speed, average speed over the speed limit, lane changing, and/or the like, for instance. Where the driver is planning a road-trip much of which is traveled over major highways, premiums can be higher as the cost of potential liability increases due to average speed increasing. Similarly,

where the driver is traveling downtown at a low rate of speed, premiums can be lower since the cost of potential liability likely decreases for a given incident. In another example, such factors can be aggregated to provide a more consistent level of coverage over a period of time.

[0020] Taking such additional planned or real time (*e.g.*, sensed) factors into account allows companies to specialize in different areas of insurance. For example, continuing the automobile insurance scenario, one insurance company can focus on inner city coverage, such that it provides premiums having lowered cost of potential liability while driving, but increases premiums as the automobile remains unattended in the city (*e.g.*, where the city has high crime rates). Facilitating such specialization allows companies to compete more effectively since more information regarding given coverage scenarios is readily available. In addition, such specialization can apply to other areas of insurance, such as home owner's insurance (*e.g.*, where information regarding activities in the home is available), health insurance, life insurance, *etc.* Moreover, insurance systems can be coupled to advertising systems such that advertisers can obtain the rich scenario data provided to the insurance system for providing contextual advertisements to one or more users. In one example, users can receive discounted premiums in exchange for providing the rich scenario data.

[0021] Various aspects relate to customizing insurance rates in real time to correspond to unique behavior/character traits of a user/driver by exploiting contextual data (*e.g.*, from third party data banks, driving behavior, and the like), which are related to such user/driver. A rate adjustment component can interact with insurance companies that provide bids based on the contextual data - wherein, insurance costs can be dynamically adjusted, and the user/driver switched in real-time between such insurance companies (*e.g.*, based on bids) - to ensure obtaining optimum rates. The contextual data and/or data banks can include data pertaining to the motor vehicle (*e.g.*, maintenance history, current vehicle conditions, sensor monitoring operation of the motor vehicle, and the like); data related to the driver (*e.g.*, via health insurance records, police records, internet records, and the like); and data related to operating environment (*e.g.*, weather, geographical location, and the like.) Moreover, the real-time contextual driving data can include both an intensity portion and a frequency portion, which represent severity and regularity of driving

episodes (*e.g.*, slamming the brakes, gradual/sudden deceleration, velocity variances, and number of such acts in a predetermined period).

[0022] In a related aspect, a switching component can switch user/driver (*e.g.*, automatically with no additional input from user) to an insurance company that bids the best rate. Hence, during a trip the user/driver can actually be insured by various suppliers during different segments of such trip – (each of which supplies an optimal rate for the trip segment that switching thereto occurred.) Alternatively, the user can remain with the same insurance company throughout the trip; and yet comply with its mandates (*e.g.*, limits on speed/acceleration, car maintenance) for obtaining optimal rates.

[0023] Hence, various aspects introduce at least two insurance models, namely: 1) a user/driver complying with requirements of a single insurance company to keep current insurance rates; or 2) different insurance companies bidding for the behavior of user not willing to necessarily abide to requirements of a single insurance company. Moreover, the subject innovation can be implemented as part of a system local to each motor vehicle (*e.g.*, the rate adjustment component and the switching component are positioned on the motor vehicle); or part of a central management system, or a combination thereof. It is to be appreciated that even though the subject innovation is primarily described in context of an automobile, the subject innovation is not so limited and can be applied to any type of vehicle that requires insurance; such as motor boats, airplanes, motorcycles, and the like.

With the disclosed aspects, insurance rates can be calculated in real-time and be presented to a driver through an interface in their vehicle. Multiple benefits can be gained based upon real-time calculation and presentation, such as making a driver more aware of how his actions influence his risk and therefore his insurance premium. Real-time calculations can model actual driving and thus provide more accurate rates that can benefit both the driver and an insurance provider.

[0024] Additionally, the real-time calculations can be presented to the driver through an interface and thus insurance can be brought to a driver's consciousness. As the driver changes speed, travels along different road types, geographic areas, and the like, the insurance rate can dynamically change and the change can be presented through the interface. In addition to presenting the rate (or a representation of the rate), the driver can be presented with a suggestion on how to modify behavior in order to bring the insurance rate down. In an illustrative instance, the driver can be

instructed that driving more slowly can lower her insurance rate and be presented indication of the saving achieved by altering conduct.

[0025] With various aspects disclosed herein, data regarding a driver's driving skills and habits can be obtained in real time. The data can be subsequently analyzed and an appropriate insurance rate determined. The insurance rate or other information pertaining to the driver's driving style can be forwarded to the driver in real time while they are still driving the vehicle thereby allowing the driver to adjust their driving technique, where such an adjustment can result in lower insurance rates being determined. Alternatively, the new insurance rates and associated data can be forwarded to the driver at a later time, *e.g.*, upon completion of a journey.

[0026] The driver is identified to an on-board monitoring system using a device that has unique identification information stored thereon to allow the driver to be uniquely identified. Such a device can be a cell phone, where the IMSI information stored on the cell phone SIM can be employed to identify the driver. Alternative embodiments, for example, can include a RFID device, cards with information stored in a magnetic strip, *etc.*

[0027] The on-board monitoring system is in communication with an insurance provider system. Data gathered by the on-board monitoring system can be forwarded to the insurance provider, the data analyzed and an insurance rate determined. The determined rate can then be forwarded to the on-board monitoring system allowing the driver to see immediately what effect their driving style is having upon their insurance rate.

[0028] An authentication process can be performed to ensure that the driver is who they say they are. In one embodiment, authentication can involve comparing shared digital keys between an identification device and the on-board monitoring system. In an alternative embodiment, an external database can be accessed and a shared digital key can be obtained to compare with one stored on a cell phone SIM.

[0029] Authorization of the driver can be carried out, whereby once the driver has been identified, information is obtained as to whether the driver is allowed to drive a particular vehicle, for example, in a fleet of company vehicles. Alternatively, the driver may be deemed to be unsuitable for driving certain passengers in a vehicle and is thus prevented from driving them. The authorization process can include immobilization of a particular vehicle, and/or informing the driver that they are not able to drive that particular vehicle or certain passengers.

[0030] A third party system and database can be accessed to facilitate identification of the driver. In one embodiment a database operated by the cell phone system provider can be queried and information identifying the owner of the cell phone accessed.

[0031] A contextual system can be included that interacts with other applications such as a calendar on a cell phone. The contextual system can prompt the driver of an upcoming trip, *e.g.*, to the airport, and allow them sufficient time to make the trip in a safe manner.

[0032] A global positioning system GPS can be included in the system allowing the location of the driver and vehicle to be determined which can be forwarded to the insurance provider to allow rates based on location to be provided. An accelerometer can also be included to provide feedback regarding whether the driver is accelerating or braking excessively.

[0033] Further, the on-board monitoring system can be connected to any on-board diagnostic system(s) available on the vehicle. Data received from the on-board diagnostic system can be employed to help determine how the vehicle is being driven, whether the driver and passengers are wearing their seatbelts, road worthiness of the vehicle, *etc.*

[0034] Insurance rate determination applications can be installed and operating on the insurance provider system. Applications providing similar functionality, either in a comprehensive or limited manner, can be installed and operating local to the on-board monitoring system. The applications can be employed in conjunction with buffer memory such that in the event of communication failure between the on-board monitoring system and the insurance provider system any gathered/processed data can be stored in the buffer until communications are re-established and the data is downloaded to the respective device.

[0035] The real-time insurance rate determination system can be incorporated into a "mesh" comprising of other drivers, GPS based location information, traffic systems, *etc.* The mesh allows the driver to interface with the transport infrastructure and have their attention drawn to speed limits, other vehicles, illegal maneuvers, *etc.*

[0036] Data gathered by the on-board monitoring system, GPS, on-board diagnostic systems, *etc.*, can be employed in the reconstruction of accidents, and if required, provided to legal entities for legal proceedings.

[0037] Also, the real-time insurance determination system addresses the issue of drivers owning multiple vehicles and having to insure them all even though only one vehicle is driven at any given time. As the system is focused on the driver it is possible to determine an insurance coverage based upon the frequency with which each vehicle is driven.

[0038] A cell phone can be used to identify a driver and provide a means for communication between the on-board monitoring system and the remote insurance provider system. Hence it is possible to determine whether the driver uses their cell phone while driving, *e.g.*, they talk or send text with the cell phone while driving. Appropriate insurance rates can be charged based on cell phone usage.

[0039] The driver can also opt to allow third party companies to have access to their data, allowing the third party companies to forward advertisements *etc.* that the third party company determines pertains to the driver based on their data.

[0040] The insurance provider system can be available to a plurality of insurance companies allowing the driver to benefit from quotes the companies, where the driver can switch from one insurance coverage to another in real time.

[0041] In additional related aspects, one or more embodiments provide system(s) and method(s) to incentivize adoption of time-dependent customized insurance benefit(s). A provider of insurance benefit(s) incentivizes adoption of the insurance benefit(s) in exchange for knowledge of operation characteristics of an insured entity. Incentivation is accomplished at least in part through generation of incentive offer(s) based on available knowledge. Knowledge is associated with an operator of the insured entity rather than with such entity, and the operator can regulate the scope of exchanged knowledge, and received incentive offer(s) and related content. Knowledge is cumulative and collected from insured entity and environment in which the entity operates. In addition, knowledge is associated, e.g., in a one-to-one relationship, with the operator of the insured entity rather than with the entity itself; accordingly, incentive offer(s) can be customized for the operator irrespective of details (e.g., vehicle make or model) of the insured entity. The operator can regulate the volume and detail of knowledge, or information, exchanged with the provider of insurance benefit(s); likewise, the operator can specify the scope, e.g., type and desired features, of received incentive offer(s) and related content, such as advertisement. Incentive offer(s) can be directed to provision of insurance benefit coverage that is adequate to current or nearly-current operation condition(s);

discounted real-time or nearly real-time insurance benefits; or subsidized service(s). Offered incentives can be afforded at least in part through monetization of available knowledge via commercialization thereof or targeted advertisement.

[0042] Moreover, the one or more embodiments or additional or alternative embodiment(s) provide system(s) and method(s) to monetize knowledge of operation characteristics of an insured entity are provided. The provider of insurance benefit(s) supplies knowledge of operation characteristics of an insured entity in exchange for a financial compensation. Financial compensation also can be received through commercialization of resources to expose an agent (e.g., an operator, an occupant, a resident, etc.) linked to the insured entity to advertisement in addition to delivery of the knowledge of operation characteristics of the insured entity. The provider of insurance benefit(s) can exploit the financial compensation to afford, at least in part, incentives directed to discounted insurance benefit(s) or subsidized service(s).

[0043] In further related aspects described herein, operational performance of a vehicle utilized as part of time-dependent insurance benefit(s) not only can reward a safe operator with discounted insurance benefit(s) rates, but it can incentivize the safe operator to maintain a time-dependent insurance benefit policy. Operational performance as exploited herein provides real-time or nearly real-time data on performance, or operation, of a vehicle and the environment on which the vehicle performs, and can be utilized in conjunction with other information to evaluate driving behavior and assess, in real-time or nearly real-time, insurance benefit(s) costs and establish incentives related to such insurance benefit(s).

[0044] While various aspects, features, or advantages of the subject innovation are illustrated with insurance of a motor vehicle, such as an automobile, a motor boat, an airplane, a motorcycle, or the like, and real-time or nearly real-time coverage, it should be appreciated that disclosed aspects, features, or advantages are not so limited and can be exploited in provision of most any or any insurance benefit(s). As an example, insurance benefit(s) can include health insurance coverage, in which case performance information comprises vitals, biometrics, or other physiological data or metrics of an individual as well as data on environment in which the individual lives or works. As another example, the insurance benefit(s) can encompass home insurance coverage, wherein performance information can include data on whether the house doors are locked when no one is present, or property vandalism events affect location of insured house, etc.

[0045] To the accomplishment of the foregoing and related ends, one or more examples comprise the features hereinafter fully described and particularly pointed out in the claims. The following description and the annexed drawings set forth in detail certain illustrative aspects and are indicative of but a few of the various ways in which the principles of the various aspects may be employed. Other advantages and novel features will become apparent from the following detailed description when considered in conjunction with the drawings and the disclosed examples are intended to include all such aspects and their equivalents.

BRIEF DESCRIPTION OF THE DRAWINGS

[0046] Fig. 1 illustrates an insurance visibility system, according to an aspect.

[0047] Fig. 2 illustrates a schematic representation of an environment in which the disclosed aspects can be utilized.

[0048] Fig. 3 illustrates a system for actively involving an insured with respect to automatic changes to an insurance premium and/or coverage, in accordance with an aspect.

[0049] Fig. 4 illustrates a perspective view of an example device utilized in an insurance visibility system, according to an aspect.

[0050] Fig. 5 illustrates a method for providing insurance visibility, according to an aspect.

[0051] Fig. 6 illustrates a method for involving an insured in the process of determining insurance premium costs, in accordance with an aspect.

[0052] Fig. 7 illustrates a method for selectively providing insurance information to a service provider, in accordance with an aspect.

[0053] Fig. 8 illustrates a block diagram of an exemplary system that facilitates vertical insurance market specialization.

[0054] Fig. 9 illustrates a block diagram of an exemplary system that facilitates generating a market definition from specific parameters and receiving policy quotes.

[0055] Fig. 10 illustrates a block diagram of an exemplary system that facilitates creating an insurance market definition from various information sources.

[0056] Fig. 11 illustrates a block diagram of an exemplary system that facilitates communicating sensed parameters for market definition.

[0057] Fig. 12 illustrates a block diagram of an exemplary system that provides an interface for specifying and/or selecting policy parameters.

[0058] Fig. 13 illustrates a block diagram of an exemplary system that facilitates injecting advertisements in vertical insurance market specialization.

[0059] Fig. 14 illustrates example interfaces that can be used to effectuate aspects described herein.

[0060] Fig. 15 illustrates a block diagram of an exemplary system that facilitates brokering insurance policy selection.

[0061] Fig. 16 illustrates a block diagram of an exemplary system that facilitates associating underwriters with insurance market definitions.

[0062] Fig. 17 illustrates a block diagram of an exemplary system that facilitates sensing object usage parameters for defining an insurance market.

[0063] Fig. 18 illustrates an exemplary flow chart for obtaining policy quotes in a vertical insurance market.

[0064] Fig. 19 illustrates an exemplary flow chart for receiving policy rates related to sensed usage parameters of an object to be insured.

[0065] Fig. 20 illustrates an exemplary flow chart for providing advertisements in a vertical insurance market system.

[0066] Fig. 21 illustrates an exemplary flow chart for sensing object usage parameters and receiving rate quotes based on the parameters.

[0067] Fig. 22 illustrates an exemplary flow chart for associating underwriters with an insurance market definition.

[0068] Fig. 23 illustrates an exemplary block diagram of a switching component and a rate adjustment component according to an aspect of the subject innovation.

[0069] Fig. 24 illustrates a particular aspect of a switching component that has an analyzer component according to a further aspect.

[0070] Fig. 25 illustrates a particular aspect of a system that illustrates exemplary type of contextual data according to a further aspect.

[0071] Fig. 26 illustrates a system that determines location of a vehicle as part of contextual data related to driving behavior of an owner or user.

[0072] Fig. 27 illustrates a particular methodology of customizing insurance rates according to a further aspect of the subject innovation.

[0073] Fig. 28 illustrates a related methodology of switching insurance to a policy with an optimal rate according to a further aspect.

[0074] Fig. 29 illustrates an exemplary system that obtains contextual data related to biometrics of a driver/owner in real-time.

[0075] Fig. 30 illustrates an inference component that facilitates customizing insurance rates based on contextual data.

[0076] Fig. 31 illustrates a particular system that employs cameras mounted on the vehicle in conjunction with various aspects of the subject innovation.

[0077] Fig. 32 illustrates a representative configuration for producing and disclosing real-time insurance information in accordance with an aspect of the subject specification.

[0078] Fig. 33 illustrates a representative system for collecting information and determining an insurance rate based upon the collected information in accordance with an aspect of the subject specification.

[0079] Fig. 34 illustrates a representative system for performing functions in relation to determining and presenting real-time insurance information in accordance with an aspect of the subject specification.

[0080] Fig. 35 illustrates a representative system for insurance information disclosure through use of a color element in accordance with an aspect of the subject specification.

[0081] Fig. 36 illustrates a representative methodology for presenting a real-time insurance rate and supplying feedback related to the rate in accordance with an aspect of the subject specification.

[0082] Fig. 37 illustrates a representative methodology for producing an advertisement in conjunction with a real-time insurance rate in accordance with an aspect of the subject specification.

[0083] Fig. 38 illustrates a representative methodology for selecting a real-time insurance bid in accordance with an aspect of the subject specification.

[0084] Fig. 39 illustrates a representative methodology for preparing a bid for real-time insurance in accordance with an aspect of the subject specification.

[0085] Fig. 40 illustrates a system for real-time monitoring of a driver to facilitate determination of insurance rate(s) in accordance with an aspect.

[0086] Fig. 41 illustrates a system for real-time monitoring of a driver to enable determination of rate(s) of insurance in accordance with an aspect.

[0087] Fig. 42 depicts a monitoring system in communication with an insurance provider system to facilitate operation of a vehicle in accordance with an aspect.

[0088] Fig. 43 presents an example methodology for the installation of a real-time insurance system in accordance with an aspect.

[0089] Fig. 44 illustrates a representative methodology for initializing on-board monitoring for a real-time insurance system and authenticating/authorizing a driver in accordance with an aspect.

[0090] Fig. 45 illustrates an example methodology for gathering information from an on-board monitoring system employed in a real-time insurance system in accordance with an aspect.

[0091] Fig. 46 illustrates an example methodology for determining insurance rates based upon vehicle usage in accordance with an aspect.

[0092] Fig. 47 is a high-level representation of a system that promotes adoption of real-time or nearly real-time benefit(s) in accordance with aspects of the subject disclosure.

[0093] Fig. 48 illustrates an example embodiment of a communication framework that is part of an example system as conveyed in FIG. 46 in accordance with aspects described herein.

[0094] Fig. 49 displays a block diagram of an example system that enables incentivation of adoption of real-time or nearly real-time insurance benefits in accordance with aspects described herein.

[0095] Fig. 50 presents an example embodiment of a component that manages data on operation of a vehicle in accordance with aspects described herein.

[0096] Fig. 51 illustrates an example embodiment of a component that generates insurance benefit(s) and related incentive offer(s) in accordance with aspects of the subject disclosure.

[0097] Fig. 52 is a block diagram of an example system that allows incentivation of adoption of real-time or nearly real-time insurance benefit(s) in accordance with features disclosed herein.

[0098] Fig. 53 is a block diagram of an example system that enables monetization of collected operation information of an insured vehicle in accordance with aspects described herein.

[0099] Fig. 54 is a flowchart of an example method for incentivizing adoption of time-dependent insurance benefit(s) according to aspects described herein.

[00100] Fig. 55 is a flowchart of an example method for issuing a set of incentive offer(s) to engage time-dependent insurance benefit(s) according to aspects described herein.

[00101] Fig. 56 displays a flowchart of an example method for providing performance record(s) according to aspects disclosed herein.

[00102] Fig. 57 is a flowchart of an example method for monetizing operation information of an insured entity in accordance with aspects described herein.

[00103] Fig. 58 displays a flowchart of an example method for monetizing available performance information according to aspects described herein.

[00104] Fig. 59 illustrates a block diagram of a computer operable to execute the disclosed architecture.

[00105] Fig. 60 illustrates a schematic block diagram of an exemplary computing environment in accordance with the various aspects.

DETAILED DESCRIPTION

[00106] Various aspects are now described with reference to the drawings. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of one or more aspects. It may be evident, however, that the various aspects may be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form in order to facilitate describing these aspects.

[00107] As used in this application, the terms "component", "module", "system", "platform," "interface," and the like are intended to refer to a computer-related entity or an entity related to an operational apparatus with one or more specific functionalities, wherein the computer-related entity and the entity related to the operational apparatus can be either hardware, a combination of hardware and software, software, or software in execution. For example, a component may be, but is not limited to being, a process running on a processor, a processor, an object, an executable, a thread of execution, a program, and/or a computer. By way of illustration, both an application running on a server and the server can be a component. One or more components may reside within a process and/or thread of execution and a component may be localized on one computer and/or distributed between two or more computers. Also, these components can execute from various computer readable media having various data structures stored thereon. The components may communicate via local and/or remote processes such as in accordance with a signal having one or more data packets (e.g., data from one component interacting with another component in a local system, distributed system,

and/or across a network such as the Internet with other systems via the signal). As another example, a component can be an apparatus with specific functionality provided by mechanical parts operated by electric or electronic circuitry, which is operated by a software, or firmware application executed by a processor, wherein the processor can be internal or external to the apparatus and executes at least a part of the software or firmware application. As yet another example, a component can be an apparatus that provides specific functionality through electronic components without mechanical parts, the electronic components can include a processor therein to execute software or firmware that provides at least in part the functionality of the electronic components. As further yet another example, interface(s) can include input/output (I/O) components as well as associated processor, application, or Application Programming Interface (API) components. While the foregoing examples are directed to aspects of a component, the exemplified aspects or features also apply to a system, platform, module, interface, and the like.

[00108] Artificial intelligence based systems (*e.g.*, explicitly and/or implicitly trained classifiers) can be employed in connection with performing inference and/or probabilistic determinations and/or statistical-based determinations as in accordance with one or more aspects as described hereinafter. As used herein, the term "inference" refers generally to the process of reasoning about or inferring states of the system, environment, and/or user from a set of observations as captured through events, sensors, and/or data. Inference can be employed to identify a specific context or action, or can generate a probability distribution over states, for example. The inference can be probabilistic - that is, the computation of a probability distribution over states of interest based on a consideration of data and events. Inference can also refer to techniques employed for composing higher-level events from a set of events and/or data. Such inference results in the construction of new events or actions from a set of observed events and/or stored event data, whether or not the events are correlated in close temporal proximity, and whether the events and data come from one or several event and data sources. Various classification schemes and/or systems (*e.g.*, support vector machines, neural networks, expert systems, Bayesian belief networks, fuzzy logic, data fusion engines, and so forth) can be employed in connection with performing automatic and/or inferred action in connection with the disclosed aspects.

[00109] Various aspects will be presented in terms of systems that may include a number of components, modules, and the like. It is to be understood and appreciated that the various systems may include additional components, modules, *etc.* and/or may not include all of the components, modules, *etc.* discussed in connection with the figures. A combination of these approaches may also be used. The various aspects disclosed herein can be performed on electrical devices including devices that utilize touch screen display technologies and/or mouse-and-keyboard type interfaces. Examples of such devices include computers (desktop and mobile), smart phones, personal digital assistants (PDAs), and other electronic devices both wired and wireless.

[00110] Additionally, in the subject description, the word "exemplary" is used to mean serving as an example, instance, or illustration. Any aspect or design described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other aspects or designs. Furthermore, examples are provided solely for purposes of clarity and understanding and are not meant to limit the subject innovation or relevant portion thereof in any manner. It is to be appreciated that a myriad of additional or alternate examples could have been presented, but have been omitted for purposes of brevity.

[00111] Further, the terms "set" of "sub-set" as employed herein excludes the empty set. Thus, a "set" or "sub-set" in the subject disclosure includes one or more elements or entities. As an illustration, a set of offers includes one or more offers, or a set of devices includes K devices with K a natural number greater than or equal to unity.

[00112] Referring initially to Fig. 1, illustrated is an insurance visibility system 100, according to an aspect. It should be noted that while various aspects presented herein are discussed with reference to a car, the various aspects can be applied to other vehicles including, but not to limited trucks, vans, motor homes, busses, motorcycles, commercial vehicles, water vehicles, aircraft, and so on. System 100 is configured to convert (vehicle) insurance from a commodity to something that has visibility and associated prestige. Insurance provider information and/or insurance rates can be rendered to the driver and/or passengers through an interactive display or through other means, such as audio (*e.g.*, through speakers installed in the car, over a cell phone, and so on).

[00113] In an example, a dashboard-mounted display can be provided to output the name of the insurance coverage provider and/or base rate of insurance (*e.g.*, cost of insurance at the start of a trip). As the vehicle is being operated, the base rate can be dynamically modified such that a driver (and passenger(s)) can automatically perceive the impact that one or more parameters have on the base rate. The impact can be a positive impact (*e.g.*, discount applied for "good" behavior) or a negative impact (*e.g.*, surcharge applied due to dangerous behavior/conditions). The parameters can relate to operating conditions, such as weather (*e.g.*, rain, snow, icy road conditions, and so on), road congestion, construction, and so forth. Other parameters can relate to driver behavior (*e.g.*, obeying traffic laws, speeding, tailgating, operation of a mobile device while talking on a mobile telephone, and so on) and/or location of the vehicle (*e.g.*, parked in a garage, parked in an area known for high car thefts/damage, traveling through a high (or low) accident area, and so forth).

[00114] As the base rate of insurance is changed, the driver (and others in the vehicle) can automatically see the changes. Thus, in real-time (or near real-time) the driver can see that (while speeding, for example) his average insurance premium can be increased from eight cents a mile to thirty cents a mile (*e.g.*, a surcharge applied). As the driver slows down, the insurance premium can automatically lower back to eight cents a mile (or a different value or cost measurement). In this way, the driver might change his behavior in order to have a lower premium (or for no surcharge applied to the base rate). Further, in accordance with some aspects, a discount can be obtained in exchange for allowing the insurance provider (or a third party) to monitor parameters associated with the vehicle.

[00115] The dynamic presentation of insurance coverage costs can function as meter-based insurance rates, which is similar to electricity modeling. The premise of electricity modeling is that when consumers are asked whether they would like to be charged for electricity based on their own (family) usage or based on the average cost of the amount of electricity their neighbors are using (*e.g.*, statistical averaging), the consumer might select to be charged based on their own usage. When then asked whether the consumer would like to be charged based on their own driving behavior or the behavior of similar drivers (*e.g.*, age, location, occupation, and so forth), the consumers might prefer to be charged based on their own behavior (and realize that the structure for current insurance rate charges are less than ideal). Thus, prestige or other benefits can be associated with allowing an insurance carrier (or other trusted

third party) to gather information automatically in exchange for potential lower premiums and/or other benefits.

[00116] System 100 includes a monitoring component 102 that is configured to gather one or more parameters 104 that can affect a base rate 106 of insurance. One or more parameters 104 can be driving behavior, operating conditions, location, or combinations thereof. Further, the one or more parameters 104 can include an intensity portion, a frequency portion, or combinations thereof. Intensity portion and/or frequency portion can represent severity and regularity of driving episodes (*e.g.*, slamming on brakes, gradual/sudden deceleration, velocity variances, and so forth).

[00117] The one or more parameters 104 can be gathered by monitoring component 102 in a number of manners. For example, sensors or other data gathering components can be operatively connected to the vehicle to obtain both external and internal (to the vehicle) operating conditions. Monitoring component 102 can selectively interact with the sensors and/or other data gathering components to obtain information that might have an influence on the base rate 106.

[00118] In another example, monitoring component 102 can interact with other systems to obtain one or more parameters 104. For example, monitoring component 102 can interact with an external traffic reporting system (or database) and, based on the current location of the vehicle in which system 100 is utilized, information related to traffic congestion, construction, and other factors of that particular location can be gathered by monitoring component 102. For example, initially, a geographic location for the vehicle can be determined by a global positioning system (GPS). This geographic location can be matched with real-time weather and/or road conditions for the determined location though a wireless network, an Internet Protocol (IP) network, and so forth, which can interact with a geographic maps server, a weather server, or the like.

[00119] Also included in system 100 is an adjustment component 108 that is configured to selectively modify the base rate 106 to provide a surcharge 110 or a discount 112. The surcharge 110 or discount 112 (or, in some cases, no change to the base rate 106) is communicated to a render component 114 that is configured to output the surcharge 110 and/or the discount 112, which can be perceived by an operator, passenger, vehicle occupant, and others.

[00120] Render component 114 can output surcharge 110, discount 112, one or more parameters 104, or other information in any perceivable format (*e.g.*, visual, audible, and so forth). In accordance with some aspects, render component 114 outputs surcharge 110 and/or discount 112 in a visual format that illustrates the surcharge 110 or discount 112 as a bar chart, pie chart, or other chart, wherein the type of chart is configurable by the vehicle operator/or other user that has authorization to modify system 100. In accordance with some aspects, render component 114 outputs the information (*e.g.*, surcharge 110 and/or discount 112) as a color scheme, wherein the complex information is represented along a single color dimension. Alternatively or additionally, relative brightness can be used by color element 116 to convey information related to insurance costs.

[00121] In accordance with some aspects, render component 114 can be selectively removed from vehicle and/or other components of system 100. For example, render component 114 can be integrated, at least in part, in a car's key fob, wherein the key fob can perform multiple functions. For example, the key fob can remotely start a vehicle. When the operator enters the vehicle, the key fob can be placed in a location that allows viewing of the key fob while operating the vehicle. As the vehicle is operated, the key fob can output surcharge 110, discount 112, one or more parameters 104 and/or other information though a display or through other properties of key fob (*e.g.*, key fob constructed of translucent material).

[00122] In another example, render component 114 can be associated with a mobile device (*e.g.*, smart phones or other device). The wireless capacity of mobile device can be utilized to communicate with other system 100 components. When an operator enters the vehicle, the mobile device can be located where a display of the mobile device can be perceived while the vehicle is in operation.

[00123] According to another aspect, render component 114 outputs information in an audible format. The audible format can be in the form of a statement (*e.g.*, "Based on your current speed, you can be accessed a surcharge of ten percent.", "Since you have been driving the correct speed limit for the past two hours, you can expect a fifteen percent discount in your insurance base rate this month.").

[00124] In accordance with some aspects, the audible format can be in the form of a question (*e.g.*, "Would you like to continue driving erratically for an insurance surcharge of ten dollars per week, bringing your total costs to xxx dollars per month?", "Since you have been operating your vehicle in the proper manner, would

you like a rebate or would you like to apply your earned discount to your current policy and extend that policy by one month?"). Thus, the operator is made aware of one or more factors that can affect the cost of insurance and the operator's behavior (or other factors) can be changed so that the cost of insurance is affected in a positive manner for the operator.

[00125] According to some aspects, render component 114 can output the surcharge 110 and/or the discount 112 in the form of an audible signal (*e.g.*, beep). The audible signal can be the same for both the surcharge 110 and the discount 112. However, according to various aspects, a different audible signal can be utilized depending on whether a surcharge 110 should be applied or whether a discount 112 should be applied. For example, surcharge 110 can have a tone, frequency, and so forth, that is different from the tone, frequency and so forth, utilized for the discount 112. In this manner, the operator, who has learned the different audible signals and/or configured the different audible signals, can comprehend the surcharge 110 and/or discount 112 without distracting her eyes from the road.

[00126] Further, in accordance with one or more aspects, the information (*e.g.*, surcharge 110, discount 112) provided by render component 114 to the operator of the vehicle can be presented at a frequency that is more often than the frequency at which the information is supplied to an insurance provider and/or trusted third party. In such a manner, an actual surcharge and/or discount are not applied to the base rate at a near real-time rate, which allows the operator to modify her behavior and/or other parameters.

[00127] In accordance with some aspects, render component 114 can be configured to represent complex information along a color dimension. Render component 114 can be located in a driver's viewing range, wherein the driver can perceive render component 114 while operating the vehicle. For example, render component 114 can be placed on (or integral to) a vehicle dashboard in a manner that does not significantly distract the driver. In accordance with some aspects, render component 414 prominently displays a name of the company providing the insurance coverage and/or other information related to the insurance company (*e.g.*, contact information).

[00128] Included in render component 114 can be a color element 116 that is configured to vary in color across a visual spectrum, wherein a first end 118 of spectrum and a second end 120 of spectrum are illustrated. Color element 116 can output at least one color across the spectrum to indicate a current insurance cost

and/or a change to an insurance cost. A change in the distribution of colors produced from first end 118 to second end 120 (and from second end 120 to first end 118) is a function of the amount of increase (or decrease) in an amount of insurance. In accordance with some aspects, a decrease in the amount of insurance is indicated by a color change from first end 118 to second end 120 and an increase in the cost of insurance is indicated by a color change from second end 120 to first end 118.

[00129] In accordance with some aspects, a current cost of insurance can be represented along the spectrum, such as a center point 122. An increase (or decrease) can be represented by a color change, wherein an increase can be represented by a color movement toward first end 118 and a decrease can be represented by a color movement toward second end 120 (or vice versa).

[00130] For example, as cost of insurance increases, the output by color element 116 can progress across the spectrum from first end 118 to second end 120, wherein the progression across the spectrum is a function of the amount of increase in the cost of insurance. In another example, as a cost of insurance decreases, the output by color element 116 can change in the direction of second end 120 to first end 118.

[00131] In accordance with some aspects, color element 116 can include Light Emitting Diodes (LEDs) or other means for producing light across a hue spectrum. The LEDs or other means should vary in color across a spectrum (*e.g.*, from red to blue, from yellow to green, from a light shade of color to a dark shade of color, from a dark shade of color to a light shade of color, and so forth).

[00132] According to some aspects, a color from a different spectrum can be utilized to indicate situations when there is no information available, not enough available information, and/or no connectivity to a central network (*e.g.*, insurer's network, trusted third party's network). For example, while a vehicle is being driven through rural areas, there might be limited or no wireless reception, thus communication cannot be conducted with another entity (*e.g.*, insurer's network, trusted third party's network). In this situation, a different color, such as blue, can be presented to the user to indicate that information is still being gathered and/or analyzed, but there is no information available for the driver at the current time. In accordance with some aspects, the color spectrum can indicate other parameters in addition to (or in lieu of) changes in a cost of insurance. For example, the colors can represent operating cost, environmental impact, how safely a vehicle is being operated, and/or other factors that might be of interest to the driver.

[00133] Fig. 2 illustrates a schematic representation of an environment in which the disclosed aspects can be utilized. Included in environment is a system 200 that includes a vehicle 202 and an operator 204 (*e.g.*, insurance purchaser, covered individual). An operator 204 can purchase an insurance policy from an insurance provider 206. As a condition of insurance (or for a reduction in the cost of the insurance policy), operator 204 can agree to monitoring by insurance provider 206 or by a trusted third party 208. Insurance provider 206 and trusted third party 208 can be a single entity (*e.g.*, trusted third party 208 is a subsidiary of insurance provider 206) or a separate entity (*e.g.*, trusted third party 208 gathers information for various entities, including insurance provider 206).

[00134] Trusted third party 208 can gather information (or parameters) related to vehicle 202, operator 204, and/or an environment 210. Gathered information can be historical information 212, current information 214, and/or predicted information 216 (*e.g.*, information that is predicted to occur in the future).

[00135] Historical information 212 can be gathered from information provided by operator 204, an automobile dealership, maintenance garages, oil change centers, or other entities that have serviced vehicle 202 and/or from which products/services for vehicle 202 have been purchased. In accordance with some aspects, historical information 212 is retrieved from a credit card company, a debit card company, and the like (*e.g.*, based on where purchases were made or based on what was purchased an inference is made that the purchase is for the vehicle 202). It should be understood that prior to any information being gathered from any entity, the operator 204 should specifically authorize the gathering of data. Such historical information 212 can provide indications of the safety of the vehicle based on services performed on the vehicle.

[00136] Additionally or alternatively, historical information 212 can relate to conditions associated with similar vehicles. For example, information related to problems associated with a vehicle (*e.g.*, similar make, model, and year) that might cause an accident or other property damage can be gathered from others over time (*e.g.*, other individuals, based on other insurance claims, statistics, or other data gathered by government agencies, and so forth). In an example, if there is a defect found associated with a particular type of vehicle, this defect, unless corrected, might have an impact on the vehicle insurance. Thus, historical information 212 can be

utilized to determine whether an insurance amount should be adjusted (*e.g.*, a surcharge applied if not corrected, no change to base rate if corrected, and so forth).

[00137] Current information 214 can be gathered in real-time (or close to real-time rates) as vehicle 202 is operated or at other times (*e.g.*, when vehicle 202 is not in operation). Current information 214 can be operating conditions and/or an operating environment 210. For example, current information 214 can be the number of passengers in the vehicle and the identity of those passengers (*e.g.*, friend, spouse, children, and so forth). Such information can provide information about why a vehicle is being operated in a particular manner. For example, a person might operate a vehicle more recklessly when a friend is in the vehicle as compared to how that vehicle is operated when a spouse or a child is in the vehicle. Such information can be utilized, in accordance with the disclosed aspects, to inform the operator of specific behavior patterns and how those behavior patterns affect insurance costs.

[00138] In accordance with some aspects, current information 214 relates to other vehicles/operators in environment 210 (*e.g.*, traffic congestion levels, operating condition of other vehicles, and so on). For example, sensors can be positioned such that the presence of other vehicles is detected (*e.g.*, through vehicle-to-vehicle communication). In another example, insurance visibility systems of adjacent vehicles (or vehicles with a certain distance) can communicate their respective presence information.

[00139] Predicted information 216 can be gathered from estimates made by trusted third party 208. For example, historical driving conditions of vehicle 202 can be analyzed and, based on this historical data, predictions about future driving conditions can be made. In another example, information related to where vehicle 202 has been historically parked overnight and/or during the day can be gathered to determine whether vehicle 202 is parked in a neighborhood that has high theft and/or vandalism rates.

[00140] As vehicle 202 is operated, trusted third party 208, can analyze all information gathered and a determination can be made related to data that should be provided to operator 204. In accordance with some aspects, the data provided to the operator 204 is for information purposes only and an actual change in an insurance premium might be based on information gathered over time (*e.g.*, one week, two months, a year, and so forth). Thus, although dynamic insurance rates are automatically and at frequent intervals provided to the insured, the actual rate charged

might take into account a longer period of time before a premium change is made. In this manner, if desired, a vehicle operator can change certain behaviors before there is an actual change in the amount charged for insurance protection. In accordance with some aspects, a device within the vehicle 202 can perform the computations and/or determine any surcharge/discount locally.

[00141] Fig. 3 illustrates a system 300 for actively involving an insured with respect to automatic changes to an insurance premium and/or coverage, in accordance with an aspect. System 300 includes a monitoring component 102 that is configured to monitor external parameters 302 and internal parameters 304. The external parameters 302 are those parameters that are not within the control of the insured. However, internal parameters 304 are those parameters for which the insured has at least partial control.

[00142] Monitoring component 102 can provide information related to the external parameters 302 and the internal parameters 304 to an adjustment component 108. Further, adjustment component 108 can obtain a base rate 106 of insurance. Base rate 106 can be retained internally by adjustment component 108 (*e.g.*, retained in a storage medium) or can be dynamically obtained from an external source (*e.g.*, insurance provider, trusted third party, and so forth). As a function of external parameters 302, internal parameters 304, and/or base rate 106, adjustment component 108 selectively produces a surcharge 110, a discount 112, or makes "no change" to base rate 106. In accordance with some aspects, adjustment component 108 applies a discount if the one or more parameters 302, 304 tends to decreases a number of insurance claims or applies a surcharge if the one or more parameters 302, 304 tends to increase the number of insurance claims.

[00143] Adjustment component 108 provides the surcharge 110, the discount 112, or an indication of "no change" to render component 114 that outputs the surcharge 110, the discount 112, or the indication of "no change" in a perceivable format. In accordance with some aspects, render component 114 is located within the vehicle to enable perception by a vehicle occupant. For example, render component 114 outputs a visual representation of the surcharge 110, the discount 112, or the indication of no change. In another example, render component 114 outputs an audible representation of the surcharge 110, the discount 112, or the indication of no change. In accordance with some aspects, render component 114 outputs additional information, such as the

original insurance cost, the parameters utilized to provide the comparison, and so forth.

[00144] System 300 also includes an interface component 306 that engages a user (*e.g.*, an operator of vehicle) in an interchange related to the surcharge 110, the discount 112, or the indication of "no change". For example, render component 114 can output one or more parameters considered by adjustment component 108 and the adjustment (*e.g.*, surcharge 110, discount 112, indication of no changes) that might be made to an insurance cost. The user can interact with interface component 306 by adjusting her behavior (*e.g.*, reduce speed so that she is traveling at a safer rate of speed (or at the speed limit), stop talking on her cell phone, no longer following the car in front of her too closely (*e.g.*, as determined by breaking pattern and/or sensing equipment, and so forth)). In another example, the user can verbally interact with system 300, such as by replying negatively or positively to questions provided though interface component 306.

[00145] In another example, interface component 306 can be configured to receive a response from the operator of the vehicle based on information presented to the operator. This response can be utilized to further modify the cost of the insurance policy.

[00146] In accordance with some aspects, the vehicle operator can selectively enable or disable system 300. For example, system 300 might be disabled (*e.g.*, no data collected) if the vehicle is going to be operated by another individual. In another example, for various reasons, monitoring might not be desired (*e.g.*, operator is late for an appointment and will be driving aggressively). In accordance with some aspects, if system 300 is disabled for a specified period of time (*e.g.*, more than two consecutive days), a surcharge 110 might automatically be applied (*e.g.*, an assumption is made that the insurance purchaser no longer would like a discount for utilization of the monitoring service).

[00147] Interface component 306 can provide a graphical user interface (GUI), a command line interface, a speech interface, Natural Language text interface, and the like. For example, a GUI can be rendered that provides a user with a region or means to load, import, select, read, *etc.* information (*e.g.*, surcharge 110, discount 112, external parameters 302, internal parameters 304, or other information), and can include a region to present the results of such. These regions can comprise known text and/or graphic regions comprising dialogue boxes, static controls, drop-down-

menus, list boxes, pop-up menus, as edit controls, combo boxes, radio buttons, check boxes, push buttons, and graphic boxes. In addition, utilities to facilitate the information conveyance such as vertical and/or horizontal scroll bars for navigation and toolbar buttons to determine whether a region will be viewable can be employed. For example, the user can interact with interface component 306 by entering the information into an edit control.

[00148] The user can also interact with the regions to select and provide information through various devices such as a mouse, a roller ball, a keypad, a keyboard, a pen, gestures captured with a camera, and/or voice activation, for example. Typically, a mechanism such as a push button or the enter key on the keyboard can be employed subsequent to entering the information in order to initiate information conveyance. However, it is to be appreciated that the disclosed aspects are not so limited. For example, merely highlighting a check box can initiate information conveyance. In another example, a command line interface can be employed. For example, the command line interface can prompt the user for information by providing a text message, producing an audio tone, or the like. The user can then provide suitable information, such as alphanumeric input corresponding to an option provided in the interface prompt or an answer to a question posed in the prompt. It is to be appreciated that the command line interface can be employed in connection with a GUI and/or API. In addition, the command line interface can be employed in connection with hardware (*e.g.*, video cards) and/or displays (*e.g.*, black and white, and EGA) with limited graphic support, and/or low bandwidth communication channels.

[00149] In accordance with some aspects, system 300 includes a notification component 308 that is configured to provide the gathered internal parameters 302, the gathered external parameters 304, the surcharge 110, the discount 112, details related to an interaction with a user, or combinations thereof, to a service provider (*e.g.*, insurance provider, trusted third party, and so on). The information can be conveyed by notification component 308 though various wireless communications technologies.

[00150] The information sent by notification component 308 can be conveyed to service provider at different intervals, which can be predefined or based on other factors. For example, information might be gathered over days or weeks and the cumulative information sent to service provider (*e.g.*, as specified in a negotiated agreement). In accordance with some aspects, information might be sent to service

provider based upon an incident occurring (*e.g.*, detection of an accident, detection of vehicle being stolen/unauthorized use, and so on). According to some aspects, notification component 308 conveys the information to the service provider of the trusted third party less often than render component 114 dynamically outputs the surcharge 110, the discount 112, or the no change indication to the operator of the vehicle.

[00151] Fig. 4 illustrates a perspective view of an example device 400 utilized in an insurance visibility system, according to an aspect. As previously discussed, an insurance visibility system can include a render component that is located within the vehicle to enable perception by a vehicle occupant. The render component can be placed on (or integral to) a vehicle dashboard in a manner that does not significantly distract the driver. In accordance with an aspect, the render component can be a device that has dual functionality. For example, illustrated is an example device 400 that can operate as a key (*e.g.*, a key fob) and also can operate as a display for an insurance visibility system. Although device 400 is illustrated as rectangular, other geometric shapes can be utilized in accordance with the disclosed aspects.

[00152] Device 400 includes wireless functionality 402 that allows device 400 to communicate with vehicle controls, an insurance provider, and/or a trusted third party. For example, wireless functionality 402 can be utilized to allow a vehicle operator to select one or more options associated with the vehicle. These options are represented by ovals 404, 406, and 408. In an example, the options can be to lock and/or unlock doors of a vehicle, open a trunk, start the vehicle remotely, and/or other options that are desired to be controlled remote from the vehicle. Electronic functionality (*e.g.*, chip set) is represented at 410. A battery 412 or another type of power source can also be associated with device 400.

[00153] In accordance with an aspect, device 400 can include a display 414 that is configured to output visual information to the operator. In accordance with some aspects, display 414 can include a colored LED array 416 that represents information related to increases, decreases, or no change to the cost of insurance. Colored LED array 416 can vary in color across a visual spectrum. According to some aspects, device 400 is constructed of translucent material that can provide the colored LED array 416 on the entire device 400 (*e.g.*, there is no display 414, instead, at least a subportion of the translucent material is able to present the information in a visual manner.

[00154] According to some aspects, device 400 includes a means for attaching device to a dashboard (or other location) in a vehicle. For example, a strip of material, such as a hook and loop fastener (*e.g.*, Velcro® or Velcro®-like material), hook tape, loop tape, or the like can be attached to a backside (or other portion) of device 400, wherein the material can connect with another material (of the same type or a different type) located on the dashboard (or other location). In another example, device 400 can include a clip that selectively engages with a mating portion associated with vehicle. However, it should be understood that these are merely examples and other means for attaching device 400 to a portion of vehicle wherein a vehicle operator can perceive device 400 can be utilized. In accordance with some aspects, the operator might simply place the device 400 on the passenger seat, on the dashboard, or in another location where the user is able to perceive any color changes.

[00155] In view of exemplary systems shown and described herein, methodologies that may be implemented in accordance with the disclosed subject matter, will be better appreciated with reference to various flow charts. While, for purposes of simplicity of explanation, methodologies are shown and described as a series of blocks, it is to be understood and appreciated that the claimed subject matter is not limited by the number or order of blocks, as some blocks may occur in different orders and/or at substantially the same time with other blocks from what is depicted and described herein. Moreover, not all illustrated blocks may be required to implement methodologies described herein. It is to be appreciated that functionality associated with blocks may be implemented by software, hardware, a combination thereof or any other suitable means (*e.g.* device, system, process, component). Additionally, it should be further appreciated that methodologies disclosed throughout this specification are capable of being stored on an article of manufacture to facilitate transporting and transferring such methodologies to various devices. Those skilled in the art will understand and appreciate that a methodology could alternatively be represented as a series of interrelated states or events, such as in a state diagram.

[00156] Fig. 5 illustrates a method 500 for providing insurance visibility, according to an aspect. Method 500 is configured to optimize insurance from the perspective of both the insurance provider and the insurance purchaser. According to an aspect, method 500 can utilize real time analytics to selectively adjust insurance premiums, coverage, and other parameters or to provide an indication of changes that might be made if one or more parameters are not changed.

[00157] Method 500 starts, at 502, when parameters that can affect the cost of insurance are gathered. The gathered parameters can be parameters that are external to a vehicle, which might be parameters that are not controlled by the vehicle operator. External parameters include environmental conditions, such as weather conditions (*e.g.*, thunderstorm, snowstorm, whether the vehicle is being driven into the sun (which can impair the visibility of the vehicle operator), and so forth). Other external parameters include operating conditions, which can include road conditions (*e.g.*, icy road conditions, winding road, downhill grade of road, potholes, other hazardous driving conditions, and so forth).

[00158] Parameters gathered, at 502, can include parameters that are internal to a vehicle. These internal parameters can include internal operating conditions such as whether there are passengers in the vehicle, whether the operator is engaged in conversation (*e.g.*, with passengers or though interaction with a mobile device (*e.g.*, cellular telephone)), whether the driver and/or passengers are wearing safety belts, and so on.

[00159] As a function of one or more gathered parameters, at 504, the insurance cost is selectively modified (*e.g.*, a surcharge is applied, a discount is applied). Modifying the cost of the insurance cost (*e.g.*, insurance policy) comprises applying a discount if the one or more parameters tend to decrease a number of insurance claims or applying a surcharge if the one or more parameters tend to increase a number of insurance claims.

[00160] The modified insurance cost is presented to the user, at 506, in any perceivable format. The presentation to the user, at 506, can also summarize the information related to insurance, which can include the parameters utilized to make the determination, whether to increase or decrease a base rate, and so on. Further, the presentation can include rendering the information in the form of an attractive and simple device. For example, the device can emit a soft glow reflecting the safety, cost, environmental impact, or other factors, of a current driving situation. In another example, the device can output an audible indication of whether there will be an increase or a decrease in a base rate based on current conditions. Further, the presentation to the user (and others, such as passengers) can allow the insurance carrier to be visible to the driver and passengers of the vehicle. For example, an audible or visual presentation can include the name (and phone number) of the insurance provider and/or an advertisement for the insurance provider (or for other

advertisers). In accordance with some aspects, the modified insurance cost is presented as a color element that varies in color across a spectrum to represent the surcharge or the discount.

[00161] Fig. 6 illustrates a method 600 for involving an insured in the process of determining insurance premium costs, in accordance with an aspect. At 602, a change to an insurance premium and/or coverage is determined. The change can include selectively creating a modified cost of an insurance policy as a function of one or more gathered parameters. The change is output to a user, at 604, in any perceivable format. At 606, the user is prompted for information. Prompting the user (*e.g.*, operator of the vehicle) for information can be related to the modified cost of the insurance policy, the one or more parameters, or combinations thereof. Method 600 can also include receiving a response from the operator of the vehicle, at 608.

[00162] For example, the output can include a potential change (*e.g.*, surcharge applied, discount applied) to the cost of insurance and the parameters taken into account for this potential change. Further, the output can include a prompt such as, "Would you like this change reported to your insurance provider?", wherein the user can respond positively or negatively. In accordance with some aspects, the user can request that further data be accumulated before the change is reported to the service provider.

[00163] In accordance with some aspects, the user can provide additional information that can be taken into account when adjustments are made to the cost of insurance. For example, if a parameter gathered is incorrect, the user can provide corrected information.

[00164] Method 600 continues, at 610, with utilizing the response to further modify the cost of the insurance policy. This modification can include gathering additional criteria. The additional criteria can be external parameters, internal parameters, historical information, current information, and/or predicted information. Further, the additional criteria can be gathered over a period of time to determine whether a further adjustment to the cost of insurance should be made. Gathering such data over time can provide a more accurate reflection of the true cost of insurance. It should be noted that method 600 can continue, at 602, continuously such that any number of criteria or parameters can be gathered over time.

[00165] Fig. 7 illustrates a method 700 for selectively providing insurance information to a service provider, in accordance with an aspect. At 702, data is

gathered. The gathered data can include external parameters and/or internal parameters. Further, the gathered data can be historical information, current information, and/or predicted information. The gathering of data can be over a period of hours, days, weeks, and so forth. Further, data gathering can be continuous, at predefined intervals, or at random intervals. In accordance with some aspects, data can be gathered while a vehicle is in operation and at other times (*e.g.*, at two a.m. to determine where the vehicle is parked overnight).

[00166] A change to an insurance premium and/or an insurance coverage is prepared, at 704. The change is based on one or more of the gathered data, wherein each item of gathered data can have a different weight assigned. For example, data gathered related to weather conditions might be given less weight than data gathered related to user distractions (*e.g.*, passengers, use of a mobile device while vehicle is in operation, and so forth). In another example, excessive speed might be assigned a higher weight than data related to safety performance of the vehicle. As such, data with a higher weight can be given more consideration than data with a lower weight (*e.g.*, data assigned a higher weight can have a greater impact on the cost of insurance). Thus, if the user is traveling at (or below) the speed limit and speed is assigned a greater weight, then the safe speed will tend to decrease (or remain constant) the cost of insurance.

[00167] A user is notified of the change, at 706. The notification can be in any perceivable format. In an example, the notification is provided as a dashboard-mounted display. In another example, presenting the change can include displaying the modified cost of the insurance policy in a dashboard-mounted display and/or a heads-up display.

[00168] A service provider is notified of the change, at 708. At substantially the same time as notifying the service provider (or trusted third party) of the change, parameters taken into consideration (and associated weight) can also be provided. In such a manner, the service provider (or third party) can selectively further modify the cost of insurance, which can be communicated to the user though the vehicle display or through other means.

[00169] The service provider (or third party) might be provided the change information less often than the insurance cost change information is provided to the user. For example, the user can be provided the insurance cost change information dynamically and almost instantaneously with detection of one or more parameters that

can influence the insurance cost. However, the insurance provider (or third party) might only be notified of the change after a specified interval (or based on other intervals). For example, insurance cost changes might be accumulated over a period of time (*e.g.*, two weeks) and an average of the insurance cost changes might be supplied to insurance provider. In such a manner, the user has time to adjust parameters that tend to increase (or decrease) the cost of insurance, which allows the user to have more control over the cost of insurance.

[00170] Insurance Vertical Market Specialization. Vertical market specialization for insurance is provided where markets are defined based on granular aspects of coverage and presented to one or more insurance subsystems to obtain quotes for a coverage premium. Such specialization allows insurance companies to compete in more specific areas of insurance coverage, which allows for more accurate premium rates focused on the specific areas or one or more related scenarios. In addition, the granular aspects of coverage can be provided to one or more advertising systems in exchange for further lowered rates, if desired.

[00171] According to an example, an insurance market can be defined based on granular information received regarding an item, a related person, use of the item, *etc.* Based on the market, premium quotes can be obtained from one or more insurance subsystems related to one or more insurance brokers. In addition, rates can be decreased where the granular information can be provided to an advertising system, in one example. In this regard, targeted advertisements can additionally be presented to system related to requesting the insurance coverage. Policies can be automatically selected based on preferences, manually selected using an interface, and/or the like.

[00172] Fig. 8 illustrates a system 800 that facilitates defining specialized markets for insurance and obtaining premium quotes based on a market classification. The system 800 includes a market definition component 802 that can specify an insurance market for a given scenario and an insurance subsystem component 804 that can obtain one or more premium quotes from one or more insurance companies related to the specified insurance market. In one example, the market definition component 802 can determine the insurance market for the given scenario based at least in part on one or more parameters related thereto. In another example, the insurance market can be defined from parameters aggregated or averaged over a period of time. The parameters, as described herein, can relate to usage of an item to be insured and can be provided to the market definition component 802 for a specific instance of use. In

addition, the parameters can be sensed from one or more sensing components (not shown) related to using an object. The market definition component 802 can leverage the insurance subsystem component 804 to obtain quotes from insurance companies for writing a policy related to the specific instance of use. Certain insurance companies can specialize in the determined insurance market related to the specific instance of use, in one example, which can be more granular than traditional blanket policies.

[00173] According to an example, the market definition component 802 can receive information regarding an automobile insurance policy. Though traditional parameters can be specified, such as automobile type, driving history, zip code, *etc.*, the information received by the market definition component 802 can also relate to details regarding actual use of the automobile for one or more specific instances or averaged over a period of time. Automobiles, as described herein, can include cars, trucks, motorcycles, boats, airplanes, jets, or substantially any vehicle that travels measureable distances. For example, the information can include planned or real time route information, such as whether the automobile is being or will be primarily driven on a highway for a specific period of time. In one example, an insurance company can specialize in road trips to major cities. Thus, the information provided to the market definition component 802 can include a road trip route and/or a length of time away. In this example, the market definition component 802 can define an insurance market for the road trip. The definition can be as granular as desired, such as merely a road trip, a 500+ mile road trip, a road trip to a certain city, a week-long road trip, *etc*. Once defined, the market definition component 802 can communicate with the insurance subsystem component 804 to generate insurance quotes for the road trip. In another example, where the parameters are aggregated or averaged, the market definition component 802 can create a market for drivers that take frequent road trips and/or drive mostly highway miles.

[00174] Similarly, the market definition component 802 can receive information regarding daily driving, which can be specified by a driver and/or obtained from in-automobile systems such as GPS, driving behavior systems, and/or the like. Thus, for example, the market definition component 802 can specify a market for a daily driver that drives 15 miles, primarily in the city, in the AM and PM, Monday through Friday, and often speeds in the morning based at least in part on receiving information from an in-automobile system regarding routes traveled Monday through Friday, time

of the traveled route, average speed or speed at different points in the route, and/or the like. Using such information available in many automobiles today can allow insurance companies to provide more specific coverage tailored to given scenarios or habits. This additionally facilitates specialization in market niches, such as primarily city daily driving, road trips, fleet delivery automobiles, *etc.*, providing competition in the markets, and thus a likely decrease in cost for consumers. In addition, where insurance is obtained on a usage basis (*e.g.*, per route), markets can be defined solely for a road trip or daily city driving, such that policies can be reselected when a driver modifies typical driving over a period of time.

[00175] In addition, real time information about the automobile itself can be provided to the market definition component 802, such as specifications, equipment, remaining gasoline, tire pressure, oil life, brake life, odometer reading, engine temperature, noise-level inside the car, *etc.* For example, the market definition component 802 can receive a brake life and odometer reading, from which it can infer a braking level of the driver; such information can also come from a driving behavior system. The market definition component 802 can generate a market definition based on this factor, and an insurance company can specialize, for example, in drivers that are heavy on the brakes. Not only does this allow competition in insurance prices for such drivers, but it allows other companies to specialize in drivers that are not so heavy on the brakes without having to take liability of drivers that are heavy on the brakes into account when quoting a policy, as necessary in current blanket models.

[00176] Similar historical factors can be provided as well regarding driving behavior, as described in further detail herein. In addition, similar use information can be received from a home (*e.g.*, through a home security system) regarding portions of the day when the home is vacant, doors left open for an extended period of time, *etc.* Home owner's insurance companies can create similar niche markets allowing the market definition component 802 to define such markets from received parameters (*e.g.*, highly vacant homes, highly occupied homes, *etc.*) and specify the market to the insurance subsystem component 804 to obtain policy quotes. Moreover, market definitions and subsequent policies can relate to events, a period of time, and/or the like.

[00177] Referring to Fig. 9, an example system 900 for defining granular insurance markets for contextual use of an automobile is displayed. System 900 includes a market definition component 802 that discerns an insurance market for locating

coverage based on a number of received factors regarding use of an automobile as well as an insurance subsystem component 804 that allows a plurality of insurance companies 908, 910, and 912 to bid on a policy for a market definition received from the market definition component 802, as described. The market definition component 802 can comprise a travel information component 902 that receives one or more real time, planned, or averaged parameters related to automobile travel, such as driver information, automobile information, route information, *etc.*, a market determination component 904 that utilizes the parameters to select a market related thereto, and a rate receiving component 906 that obtains one or more rate quotes from the insurance subsystem component 804 based on the provided automobile travel information.

[00178] According to an example, the travel information component 902 can receive information related to travel in an automobile. The information, for example, can relate to a driver, the automobile itself, a use of the automobile, and/or the like. The information can be received from various sources, such as a driving behavior component installed in the automobile, which can provide parameters such as current speed, average speed, braking habits, acceleration habits, tailgating habits, and the like, a GPS system, an in-dash selection component, an odometer, a speedometer, a service or maintenance component, a computing device such as a cellular phone, personal digital assistant (PDA), desktop/laptop computer, netbook, *etc.*, and/or the like. In one example, the various computing devices can communicate with the automobile related devices using a communications medium. This can be a wired or wireless medium, such as universal serial bus (USB), Bluetooth, radio frequency identifier (RFID), WiFi, *etc.* In addition, the information can be real time information, planned information (such as a planned route), averaged information (such as average speed over certain hours on certain days, when travelling certain routes), and/or substantially any information obtainable or discernable from driving behavior components, automobile devices, GPS, and/or the like.

[00179] Using the information, the market determination component 904 can select a market for insurance coverage. The market can be selected using an inference or artificial intelligence technology. For example, parameters received from the travel information component 902 can be measured against parameters specified for certain market definitions, and the market determination component 904 can select a best matched market. In addition, the travel information component 902 can infer one or more disparate parameters from the received parameters. For example, based on a

speed and location, the travel information component 902 can infer whether the driver is speeding, by how much, and for how long of a time, and can mark a parameter indicating propensity to speed, providing the parameter to the market determination component 904. Substantially limitless markets can be defined by various parameters and granularities thereof, as described previously. For example, the market definitions can additionally relate to specific uses (*e.g.*, coverage for a single road-trip) and/or generalized uses (*e.g.*, primarily highway driving) so long as related information is received from driving behavior components, GPS, or similar devices, relating to automobile travel, as described. The market determination component 904 matches parameters received from the travel information component 902 with one or more market definitions, and the market definition component sends the market definition to the insurance subsystem component 804.

[00180] The insurance subsystem component 804 allows insurance companies 908, 910, and 912, as well as other insurance companies (not shown) to specify markets in which to participate. When the insurance subsystem component 804 receives a market definition from the market definition component 802 for a given scenario, it can forward the market definition and related parameters to insurance companies 908, 910, and 912, and/or related underwriters, to receive bids therefrom. In one example, the insurance subsystem component 804 can provide available market descriptions to the market definition component 802 for which insurance companies 908, 910, and 912 have specified coverage. Specifications can be provided by the insurance companies 908, 910, and 912 by explicit definition (*e.g.*, according to a protocol/specification/schema, which can be provided by the insurance subsystem component 804), by selecting options presented by the insurance subsystem component 804 (*e.g.*, using a user interface), and/or the like. In another example, the market definition component 802 can specify available markets to the insurance subsystem component 804 allowing the insurance companies 908, 910, and 912 to indicate association with one or more specified markets. In this example, the insurance companies 908, 910, and 912 can indicate association with a general market definition and bid policies based on specific parameters of an instance of the general market definition. It is to be appreciated, however, that the market definition can be defined anew including the specific parameters in an alternative example, and the insurance companies 908, 910, and 912 can bid on the policy in this regard.

[00181] In either case, the market can be defined by parameter values or ranges. Using the values or ranges, the market definition component 802 can determine markets relating to parameters received from the travel information component 902 as the parameters most closely relate to available markets. For example, insurance companies 908 and 910 can specialize in coverage for, among many other broad and/or specific scenarios, business persons working downtown driving primarily in rush hour traffic, and can indicate or select such a market description to/from the insurance subsystem component 804. It is to be appreciated that the insurance companies 908 and 910, insurance subsystem component 804, and/or market definition component can outline the parameters of such a market description (*e.g.*, travel route, speed range, time of day for traveling, *etc.*). The travel information component 902 can indicate time of driving, average speed, and route of the specific driver, for example, to the market determination component 904. This information can be obtained from driving behavior components, GPS systems, and/or the like, as described.

[00182] The market determination component 904 can match the information to the specific market indicated by the insurance subsystem components 804, and can submit the market definition and other parameters (*e.g.*, automobile type, gasoline level history – *e.g.*, whether the user is constantly riding on an almost empty tank – driver information, and/or the like) to the insurance subsystem component 804. The insurance subsystem component 804 can engage insurance companies 908 and 910, who have associated themselves with the general market definition, for obtaining a policy quote specifying the market description and/or other parameters. The insurance companies 908 and 910 can send a quote for the policy to the insurance subsystem component 804, which can forward the quote to the rate receiving component 906. Rate receiving component 906 can render the rates to a selectable display, such that the driver, upon starting the car and/or indicating that he/she is going to work, can receive the rates for the trip and select the desired policy. It is to be appreciated that the driver need not specify a trip to work; rather this can be inferred based on time of day and/or other parameters, in one example. In another example, the rate receiving component 906 can automatically select a rate and related policy based on lowest price, parameters specified by the driver, and/or the like, as described further herein.

[00183] Turning now to Fig. 10, an example system 1000 is displayed for generating markets for insurance coverage related to specific automobile travel information. System 1000 comprises a market definition component 802 that can receive travel information from multiple sources and formulate a market definition from the information, as described, and an insurance subsystem component 804 that can obtain policy quotes based on the market definition. System 1000 can additionally comprise a driver information component 1002 that provides information related to a driver of an automobile, such as claim or accident history, age, credit score, *etc.*, an automobile information component 1004 that provides data available from one or more components of an automobile, and a route information component 1006 that provides information related to one or more planned or current routes of an automobile.

[00184] In addition, the automobile information component 1004 can include a driving behavior component 1008 that can monitor mechanical or electrical aspects of an automobile to discern driving habits, such as current or average speed, odometer reading, braking habits, turning habits, lane-changing frequency, accidents, *etc.*, an automobile equipment/specification component 1010 that can provide metrics related to the automobile, such as engine size, gas mileage, weight, *etc.*, as well as equipment on the car, including factory standard or optional equipment and after-market items, such as performance enhancers, breathalyzer car starter, *etc.* The automobile information component 1004 can additionally include an automobile service component 1012 that can specify service or maintenance information related to the automobile, such as whether an oil change is due or coming up, miles since last oil change, oil level, gas level, air filter flow, and/or other information that can imply a level of care of the driver and/or risk of liability related to service items (*e.g.*, 8,000 miles overdue for an oil change could cause the engine to lock, which can create additional liability – an insurance company can specialize in this market). The automobile information component 1004 also includes an automobile environment sensing component 1014 that can detect internal or external environmental factors of the automobile, such as interior noise level (as well as noise detection – *e.g.*, voices, radio, and the like), engine noise level or distinct sounds, brake squealing, or other things that can affect ability to drive the automobile, and thus potential liability.

[00185] According to an example, the driver information component 1002, automobile information component 1004, and/or route information component 1006

can provide such information, as described, to the travel information component 902. The travel information component 902 can mine the information providing relevant information and/or information discerned from certain parameters to the market determination component 904, as described above. The market determination component 904 can select a relevant market based on the parameters and can send market information to the insurance subsystem component 804. The rate receiving component 906 can obtain a plurality of policy quotes from the insurance subsystem component 804, as described, for subsequent manual or automatic selection thereof.

[00186] For example, the automobile equipment/specification component 1010 can provide information regarding a breathalyzer car starter to the travel information component 902. The travel information component 902 can forward this information to the market determination component 904, which can select a market related to automobiles with such starters. In one example, this can lower potential liability since the automobile cannot be started by a drunk driver. Insurance companies, as explained above, can specialize in this niche market and offer rates without having to fully consider scenarios where the driver of the automobile is drunk. The insurance subsystem component 804 can locate such companies, as described previously, and receive related policy quotes for provisioning to the rate receiving component 906. Similarly, for example, the automobile information component 1004 can communicate with other devices in the automobile (not shown) such as a cellular phone (*e.g.*, via Bluetooth) to determine whether the driver frequently sends text messages, dials phone numbers, *etc.* while driving – this information can be provided to the travel information component 902 as well for specific market definition, in one example. Similarly, the automobile information component 1004 can communicate with a radio to determine whether the driver frequently changes stations, whether the driver changes using the steering wheel controls or controls on the radio, *etc.*

[00187] In another example, the route information component 1006 can provide information on a prospective route or location to the travel information component 902. Thus, for example, the driver can specify a road trip route to a given city. The travel information component 902 can forward this information to the market determination component 904, which can select a market related to insuring such road trips and/or extended stays in the destination city. The market determination component 904 can specify the market to the insurance subsystem component 804, which can locate companies that cover the market, as described previously; related

policy quotes can be received and sent to the rate receiving component 906 for display or automatic selection, as mentioned above.

[00188] As described, the driver information component 1002, automobile information component 1004, and route information component 1006 can provide parameters to the travel information component 902 as related to coverage for a particular route (*e.g.*, these can be planned parameters). The planned parameters, in one example, can be verified during or after the route, and pricing can be accordingly adjusted, for example where parameters stray from those planned. Additionally, parameters can be provided to the travel information component 902 to obtain coverage for a period of time. In this regard, the parameters can relate to historical data, such as driving behavior, average speed, route information regarding whether miles are primarily city or highway, *etc.*

[00189] In yet another example, the parameters can be provided to the travel information component 902 for coverage in a particular area. Thus, when the automobile enters an area (*e.g.*, as determined by the route information component 1006 or other GPS system), area coverage can automatically begin, in one example, through a selected insurance company. Similarly, general coverage can begin when leaving the area and/or a driver can be prompted to select another policy upon entering/leaving areas, upon timed expiration of a policy, *etc.* In another example, as described herein, policies can be automatically selected seamlessly to the user such that the user can specify coverages or related desired parameters for different areas (*e.g.*, via a computing device) for automatic switching while traveling. In this regard, the route information component 1006 can provide GPS information to the travel information component 902. The market determination component 904 can receive the GPS coordinates from the travel information component 902 and can select the area market (*e.g.*, a zip code or city) providing the area market to the insurance subsystem component 804 to receive area policy quotes. The rate receiving component 906 can obtain the policy rates and present them for selection or automatically choose one, as described further herein.

[00190] Turning to Fig. 11, an example system 1100 is displayed that facilitates communicating information acquired from within an automobile for market definition creation. System 1100 includes a market definition component 802 that can model an insurance market based on received parameters and communicate the insurance market to an insurance subsystem component 804 to receive policy quotes from

various insurance companies. System 1100 also includes an automobile information component 1004 that collects information from one or more automobile components, as described, such as a driving behavior component, equipment component, service or maintenance component, environment sensing component, and/or the like; in one example, the automobile information component 1004 can be one of these components. System 1100 additionally includes a computing component 1102 that can facilitate communicating information from the automobile information component 1004 to the market definition component 802. It is to be appreciated, in one example, that the automobile information component 1004 can be equipped to communicate with the market definition component 802, in which case computing component 1102 is not needed.

[00191] According to an example, the computing component 1102 can be a device that can communicate with the automobile information component 1004 and market definition component 802 acting as a gateway between the components. In one example, the market definition component 802 can be remotely located such that the computing component 1102 can access a network to communicate therewith. For example, the computing component 1102 can be a cellular phone or other mobile device that can communicate over a cellular network. Thus, the computing component 1102 can receive data from the automobile information component 1004, and transmit the data to the market definition component 802 over the cellular network. Similarly, the computing component 1102 can be a handheld device that interfaces with a disparate computer (not shown) at a later time, where the disparate computer has network access to transfer automobile information.

[00192] In addition, the computing component 1102 can be coupled to the automobile information component 1004 via wired or wireless technology (*e.g.*, serial interface, WiFi, Bluetooth, *etc.*), as described. In another example, the automobile information component 1004 can be equipped with technology to communicate with the market definition component 802, such as a cellular modem, and/or the like. In this example, the computing component 1102 may not be utilized since the automobile information component 1004 directly communicates with the market definition component 802.

[00193] Referring to Fig. 12, an example system 1200 is illustrated that facilitates selecting insurance coverage from a list of rates and/or other information. The system includes a user interface component 1202 that presents one or more rates for selection

thereof, a market definition component 802 that generates a market for insurance based on a plurality of received parameters, as described, and an insurance subsystem component 804 that receives the generated market and queries insurance companies for market coverage. The user interface component 1202 comprises a policy specification component 1204 that can be utilized to provide desired policy coverage parameters to the market definition component 802, in one example, a rate receiving component 1206 that can obtain a plurality of insurance coverage rates, as well as other details such as policy information, coverage parameters, contracts, *etc.*, a rate display component 1208 that renders insurance coverage rates and/or other information, and a rate selection component 1210 that facilitates selecting insurance coverage based on the rendered rates and/or other information.

[00194] According to an example, the policy specification component 1204 can present policy coverage details on the user interface and allow for selection of one or more policies or details. For instance, the policy specification component 1204 can render liability coverage limits for disability, damage, *etc.*, options such as rental car coverage, towing, *etc.* and/or the like. In addition, the policy specification component 1204, in an example, can render options related to route type, such as coverage for a road trip, inner-city driving, and/or the like. The driver can select such options to receive specific quotes for the type of route planned, in this example. For instance, the selectable policies or coverage details can be obtained from the market definition component 802 based on indicated specialized coverages from the insurance subsystem component 804.

[00195] The market definition component 802 can model an insurance market definition based on parameters from the policy specification component 1204 as well as information received from one or more other sources, such as route information, automobile information, driver information, and/or the like, as described above. The market definition component 802 can leverage the insurance subsystem component 804 to obtain policy rate quotes from different insurance companies specializing in the modeled insurance market and can provide the rate quotes to the user interface component 1202. For example, the market definition component 802 can collect desired policy parameters, such as comprehensive coverage with high premiums for a road trip, from the policy specification component 1204. The market definition component 802 can obtain other information, such as driver claim history, ticket history, speeding propensity, braking style, lane change frequency, and/or other

information from driver history, measured automobile metrics, *etc.*, as described, and define a market definition for transmitting to the insurance subsystem component 804, which can receive rates and communicate the rates to the market definition component 802.

[00196] The rate receiving component 1206 can obtain the policy rate quotes from the market definition component 802, and the rate display component 1208 can render policy and/or rate information. In one example, the rate display component 1208 can render the policy and/or rate information on a selectable display (*e.g.*, touch screen, a screen navigable by a mouse or other pointing system, *etc.*). In another example, the rate display component 1208 can audibly render the rate and/or policy information to a radio, phone, *etc.*

[00197] The rate selection component 1210 can allow a user to select a policy from those presented by the rate display component 1208. In one example, selection can occur, as described, via touch screen, pointing device, keypad, *etc.* Thus, where the rate display component 1208 audibly renders rates, for example, over a phone, a user can use a keypad to select a rate for a route or period of time, as described, based on additional rate and/or policy information. This facilitates insurance market specialization by allowing users to select policies based on specific parameters regarding automobile use, as described, which can additionally facilitate increased competition among companies in the insurance market. As described infra, rate selection can be automated as well so that a driver need not select coverage for every route, time period, *etc.* It is to be appreciated that the user interface component 1202 can be fully or partially implemented within an automobile component, such as a GPS navigation system, a computing device, such as a cellular phone, laptop, home computer, *etc.*, coupled or uncoupled to the automobile or one or more components thereof, and/or the like. In this regard, in addition, the user interface component 1202, in one example, can interface with a computing component, much like the automobile information component 1004 to computing component 1102 as described above, to provide policy specifications, receive rates, and/or the like.

[00198] Turning to Fig. 13, an example system 1300 for implementing advertising in vertical insurance market specialization systems is illustrated. The system 1300 includes a market definition component 802 that can create an insurance market based on one or more parameters received from various components, as described, and can leverage an insurance subsystem component 804 to obtain rate quotes from a plurality

of insurance companies. The market definition component 802 can comprise a rate receiving component 906 along with other components, as described previously, that can receive rates from the insurance subsystem component 804. The system 1300 additionally includes a user interface component 1202, which, as described, can provide policy specifications and receive rate quotes from the market definition component 802 based further on the specifications. The user interface component 1202 can include an advertisement display component 1304 that can render an advertisement (*e.g.*, visually or audibly) to a driver. In addition, system 1300 includes an advertising subsystem component 1306 that can receive and store advertisements for presentation to a user interface. The advertising subsystem component 1306 can comprise an advertisement generation component 1308 that provides one or more advertisements randomly, based on context or one or more inferred scenarios, and/or the like.

[00199] According to an example, the market definition component 802 can receive parameters from the user interface component 1202 or other components relating to desired insurance coverage, route information, automobile information, driver information, and/or the like as described, and can accordingly generate an insurance market definition. The market definition component 802 can provide the market definition to the insurance subsystem component 804 for receiving policy quotes from a plurality of insurance companies. The rate receiving component 906 can receive policy rate quotes from the insurance subsystem component 804, as described. Upon receiving policy rate quotes, the market definition component 802 can determine whether a related driver has chosen to receive advertisements (*e.g.*, in exchange for reduced rates). In this regard, advertising can be used to subsidize portions of insurance policies, and advertisers can receive access to the rich route information, automobile information, driver information, *etc.*, of opted-in drivers.

[00200] If a driver has opted-in to receive advertisements, the rate receiving component 906 can apply a discount to the rates received from the insurance subsystem component 804 upon communicating the rates to the user interface component 1202, and the market definition component 802 can transmit received travel information to the advertising subsystem component (*e.g.*, route, automobile, and driver information, as described). In addition, the market definition component 802 can engage advertising subsystem component 1306 to propagate an advertisement to the user interface component 1202. In this regard, the advertisement generation

component 1308 can select an advertisement for display to the driver. As mentioned, this advertisement can be contextual, in which case the market definition component 802 can provide route, automobile, driver, or other travel information to the advertising subsystem component 1306 to facilitate selecting a contextual advertisement. In another example, the advertisement can be random. In either case, the advertisement generation component can provide the advertisement to the user interface component 1202 directly, and/or to the market definition component 802 for transmission to the user interface component 1202 along with the discounted rates.

[00201] Moreover, the user interface component 1202 can be the same as the previously described user interface component 1202 that allows policy specification and/or rate selection. In addition or alternatively, however, the user interface component 1202 can be substantially any user interface component, such as an in-automobile device (*e.g.*, GPS, car stereo, *etc.*), a computing device (laptop, personal computer, *etc.*), cellular phone, associated software application (*e.g.*, web-based email, social networking website, or other personalized website, *etc.*), other device (*e.g.*, digital video recorder, television, *etc.*), and/or the like. Thus, where a driver opts-in to receive the advertising, the driver receives discount rates along with advertisements rendered to a number of possible devices.

[00202] Now referring to Fig. 14, example interfaces 1400 and 1402 are displayed for specifying desired coverage parameters and subsequently selecting an insurance policy, as described. It is to be appreciated that the interfaces shown are examples of potentially limitless interface layouts or configurations; the examples are provided for explanation of concepts described herein. In addition, as described, the interfaces can be implemented on in-automobile devices, such as a GPS navigation display, computing devices, and/or the like. Interface 1400 can relate to specifying desired policy parameters, as described supra, which can be utilized prior to driving. In this regard, the interface 1400 can be displayed in the automobile to allow real time or near real time specification of a planned use. In another example, the interface 1400 can be displayed at a computer or cellular phone, for example, before entering the automobile. In one example, this can be based on request by the user, based on contextually inferring that the user is about to get in the car (such as by evaluating communications referring to a road trip, map requests, *etc.*, or based on time of day – *e.g.*, inferring that the user is likely going to/from work, *etc.*).

[00203] Interface 1400 can comprise a plurality of parameter entries relating to trip type, distance, *etc.*, as shown, as well as desired coverage details. In addition, an advertisement 1404 can be displayed if the driver has opted-in to receive advertisements, as described. Upon submitting the parameters, interface 1402 can be displayed (on the same or different interface – *e.g.*, parameter specification can occur on a computer and policy selection on a GPS navigation system) based at least in part on aggregating the desired policy settings of interface 1400 along with other automobile or driver information, as described. Interface 1402 can display the coverage details along with policy quotes 1406 received from a market definition component (not shown). Each policy quote can be related to an insurance company and have an associated rate and/or a rating of the company or policy (indicated by the '*'), such as a user rating, better business bureau, *etc.* In addition, one or more advertisements 1408 and 1410 can be displayed where the driver has opted-in for advertisements to receive lower rates.

[00204] Turning now to Fig. 15, an example system 1500 for automatically selecting automobile insurance coverage is illustrated. The system 1500 includes a market definition component 802 that can compose an insurance market based on one or more received parameters, as described, and insurance subsystem component 804 that receives a market definition and matches a plurality of providers and related quotes to the definition. System 1500 additionally includes a broker agent component 1502 that can facilitate automated selecting or brokering of insurance coverage. The broker agent component 1502 can include a coverage specification component 1504 that receives desired coverage parameters related to a driver, an insurance policy receiving component 1506 that can obtain one or more policies from market definition component 802, and an insurance selection component 1508 that can select an insurance policy based on the coverage specification.

[00205] According to an example, the coverage specification component 1504 can receive one or more desired coverage parameters (*e.g.*, from an in-automobile system, computing device, and/or the like), as described in previous figures, and can provide the parameters to the market definition component 802. The market definition component 802 can aggregate the policy parameters along with other parameters related to the automobile, driver, or route, as described, and define an insurance market. It is to be appreciated that the coverage parameters need not be specified to the market definition component 802, in one example, and the market definition

component 802 can return policies and rates of various coverage based on the automobile, driver, and/or route information. The market definition component 802 can pass market information to the insurance subsystem component 804 and receive rate and policy information from a plurality of insurance companies. The insurance receiving component 1506 can receive the policy and rate information from the market definition component 802.

[00206] The insurance selection component 1508 can choose an insurance policy from the insurance policy receiving component 1506 according to one or more of the coverage parameters or other parameters (such as preference for low price over high rating), that can be specified by the driver (*e.g.*, via interface, as described, in one example). Thus, the driver need not select coverage each time. It is to be appreciated that the broker agent component 1502 can be employed where a driver indicates that such automatic selection of coverage is desired, in one example. In this example, the driver can, for instance, interrupt the automatic selection in certain instance (*e.g.*, employ automatic selection for general driving, but select manually for a road trip). In addition, the broker agent component 1502 can be internal to a user interface and/or executed remotely by a brokerage company. In the latter example, the brokerage company can constantly shop for rates based on automobile, driver, or planned/real time/near real time route information received, as described above, selecting coverage that best fits the driver's desires for coverage.

[00207] Referring to Fig. 16, an example system 1600 is shown for implementing market specifications that can be underwritten by one or more insurance companies. System 1600 includes a market definition component 802 that can provide a market definition to an insurance subsystem component 804 to receive policy and rate information therefrom, as described. The insurance subsystem component 804 can comprise a market definition receiving component 1602 that can obtain one or more supported market definitions for soliciting underwriters, an underwriter association component 1604 that can specify underwriters for given market definitions, and a policy receiving component 1606 that can receive policy information from underwriters for specific market definitions. In an example, the insurance subsystem component 804 can store a number of market definitions 1608 and 1610 received from the market definition receiving component 1602, and the underwriter association component 1604 can correlate one or more underwriters 1612 and 1614 (*e.g.*,

insurance companies, or even independent investors) to specific market definitions based on receiving indications for coverage from the underwriters 1612 and 1614.

[00208] According to an example, the market definition receiving component 1602 can pre-define market definitions 1608 and 1610 or specify them in real time as requests for insurance coverage are received at the market definition component 802. Once defined, underwriters 1612 and 1614 can communicate with the insurance subsystem component 804 to indicate ability to underwrite policies for certain market definitions 1608 or 1610. The underwriter association component 1604 can correlate the underwriters 1612 and 1614 to market definitions 1608 and/or 1610.

[00209] In one example, market definitions 1608 and 1610 can be defined by the market definition component 802 and provided to the market definition receiving component 1602 for communication to different insurance companies to obtain underwriters. This step can be a pre-configuration step such that the market definitions are generally defined. In this example, once the underwriter association component 1604 correlates underwriters 1612 and 1614 to the general market definition 1608, the market definition component 802 can define an instance of the market definition 1608 for a specific driver allowing the underwriters 1612 and 1614 to bid on the specific policy. The policy receiving component 1606 can receive policy information and rates and forward to the market definition component 802.

[00210] In another example, market definition can happen in real time such that the market definition component 802 receives automobile, driver, and route information in real time and defines a brand new market definition specific to the driver's exact parameters. The market definition component 802 can provide the specific market definition to the market definition receiving component 1602. Underwriters 1612 and 1614 can bid on the policy based on the specific parameters, and the policy receiving component 1606 can obtain policy information and rates providing such to the market definition component 802. The pre-configuration example above can be efficient, since underwriters 1612 and 1614 are pre-defined for the general market definition and the insurance subsystem component 804 can directly engage the underwriters 1612 and 1614 for the specific instance, whereas the latter example can be more of a broadcast scenario where the underwriters 1612 and 1614 seek out the market definition, for instance, and transmit policy information to the policy receiving component 1606.

[00211] Turning to Fig. 17, an example system 1700 is illustrated that facilitates defining specialized vertical insurance market for substantially any type of insurance. In this example, system 1700 comprises a market definition component 802 that can receive information related to an object, usage thereof, and/or an owner thereof, and can define a market based on the parameters, as described. An insurance subsystem component 804 is also provided that can receive the market definition and solicit policy quotes from a variety of insurance companies. In addition, system 1700 comprises a usage sensing component 1702 that can sense usage of an object to be covered by insurance. In one example, the usage sensing component can be a home security system that can aggregate information related to home occupancy.

[00212] In one example, the usage sensing component 1702, where a home security system, can determine during which hours a home is occupied and/or by how many people (or animals). This information can be utilized by the market definition component 802 to define a more granular policy (*e.g.*, a home that is occupied most of the day and night as opposed to a home with a working family that is gone most of the day). This information can greatly affect rates, and defining markets in this way, as described, allows insurance companies to specialize in certain policies and compete, as opposed to current blanket policies.

[00213] In addition, for example, the usage component 1702 can communicate with one or more audible environmental sensing components that can detect barking dogs inside the home, lawn mower usage (*e.g.*, a lawn mowed once a week renders a more occupied-looking home than once every two weeks), neighborhood noise (*e.g.*, people walking around and during which hours) or substantially any noise or activity that can be sensed. This information can be provided to the market definition component 802 as well for rich information concerning the home to be covered, which can affect rates. The usage sensing component 1702 can additionally be a driving behavior component or other automobile information component, as described above. In addition, the usage sensing component 1702 can relate to many types of insurance, including property, life, health, and other types of insurance, and can sense how an object to be covered is being utilized to provide more specific coverage (and thus likely lowered rates, as described herein). In addition, advertisement can be provided, as specified above, in exchange for lower rates, as described. The advertisers, in turn, receive access to the sensed information.

[00214] Fig. 18 illustrates an example methodology 1800 for obtaining insurance policy quotes based at least in part on specifying a market definition. At 1802, parameters related to an automobile route can be received. The parameters, for example, can relate to a planned or real time route, as described, such that aspects of the route can be used to determine cost of insurance coverage. An insurance market definition can be defined based at least in part on the route at 1804. Thus, for example, a definition can be chosen from a list of possible definitions based on one or more of the parameters and/or tuned in view of the parameters. In another example, the market definition can be created anew with the specific parameters. At 1806, the market definition can be provided to one or more insurance companies. This can be through another entity, such as an insurance subsystem, as described. At 1808, policy information and rates can be received for the market definition from the one or more insurance companies. Thus, for example, the rates and policies can be based on the routes. As described, the rates and policies can be based on additional factors, such as parameters related to a driver or automobile, for example.

[00215] Fig. 19 illustrates an example methodology 1900 for obtaining insurance policy quotes based at least in part on specifying a market definition. At 1902, sensed parameters related to an object can be received. The parameters, for example, can relate to various objects, such as automatically sensed driving behavior as related to an automobile or driver, automatically sensed or received home security parameters related to a home, *etc.*, as described. An insurance market definition can be defined based at least in part on the sensed parameters at 1904. Thus, for example, a definition can be chosen from a list of possible definitions based on one or more of the parameters and/or tuned in view of the parameters. At 1906, the market definition can be provided to one or more insurance companies. This can be through another entity, such as an insurance subsystem, as described. At 1908, policy information and rates can be received for the market definition from the one or more insurance companies. Thus, for example, the rates and policies can be based on the sensed parameters.

[00216] Fig. 20 illustrates an example methodology 2000 for providing advertising in a vertical insurance market system. At 2002, a plurality of policies and rates related to route, automobile, and/or driver information can be received. As described, the policies can relate to a generated market definition specific to the route, automobile, and/or driver information. At 2004, rates can be discounted based on

determining a related driver has opted-in to receive advertisements. Thus, for example, rates can be at least partially subsidized by an advertiser in exchange for route, automobile, and/or driver information, as described. A contextual advertisement can be received from an advertiser based on providing the route, automobile, and/or driver information at 2006. It is to be appreciated that the advertiser can utilize this information to generate an advertisement and for subsequent mining, for example. At 2008, discounted rates, policy information, and the contextual advertisement can be provided to an interface (*e.g.*, for rendering to a driver).

[00217] Fig. 21 illustrates an example methodology 2100 for generally receiving insurance policies based on sensed object parameters. At 2102, one or more usage parameters related to an object can be sensed. As described, this can relate to driving behavior, service needs of an automobile, environmental factors, home security system parameters, or substantially any parameters related to an object that can be sensed for more specifically defining an insurance policy. At 2104, the usage parameters can be provided to an insurance subsystem. As described, the subsystem can collaborate with insurance carriers to associate underwriters with general and/or specific market definitions. A plurality of insurance policies related to the usage parameters can be received at 2106, and at 2108, an insurance policy can be selected to cover usage of the object. The policy can be selected manually or automatically. In addition, the policy can relate to a usage instance or event, a period of time, and/or the like, as described.

[00218] Fig. 22 illustrates an example methodology 2200 for correlating one or more insurance underwriters with general or specific market definitions. At 2202, a market definition related to a planned route can be received. As described, the route can be explicitly identified and/or inferred based on previous routes, time of day, *etc.* In addition, the route can be at varying levels of specificity (*e.g.*, a precise route, a city route, a mostly highway route, and/or the like) such that a market definition can be created for varying levels of specificity. At 2204, one or more automobile insurance underwriters can be associated with the market definition. Thus, where the route is general, the underwriters can be associated for future solicitation related to routes falling in the general category. Where more specific, the associated underwriters can actually bid on the policy, as described herein. At 2206, policy and rate information can be received from the automobile insurance underwriters for an

instance of the market definition. Thus, rates can be quoted based on the planned route, as described.

[00219] Dynamic Insurance Rates. Fig. 23 illustrates an exemplary system 2300 that customizes insurance rates to correspond to unique behavior of – and/or-character traits of a user/owner by exploiting data banks 2311, 2312, 2313 such as data mined by third parties. Such leveraging from data banks enables insurance providers to bid in real time, and hence an owner and/or user of a vehicle can benefit from competition among various insurance providers, to obtain optimum rates. The system 2300 includes a rate adjustment component 2331 that in real time can determine the various rates from a plurality of insurance providers 2321, 2322, 2323 (1 to m, where m is an integer). In one particular aspect, a retrieval agent (not shown) associated with the rate adjustment component 2331 can pull insurance data from the insurance providers based on the contextual data supplied thereto. For example, such contextual data can be data records related to the vehicle 2311 (such as auto shop service records, current service status for the car, and the like); data related to the individual driver 2312 (such as health records, criminal records, shopping habits, and the like); data related to the environment 2313 (road condition, humidity, temperature, and the like) and data related to real time driving 2315 (frequency of braking, accelerating, intensity of such actions, and the like).

[00220] The retrieval agent (not shown) can pull data from the insurance providers 2321, 2322, 2323 and further publish such data to enable a rich interaction between the users on a display or a within a written communication environment. The retrieval agent can further generate an instance for a connection with the insurance providers. Accordingly, a connection instance can be employed by the rate adjustment component 2331 to store connection information such as the state of data conveyance, the data being conveyed, connection ID and the like. Such information can additionally be employed to monitor progress of data transfer to the written communication environment or display, for example.

[00221] Accordingly drivers/owners of motor vehicles can pull or receive data from the insurance providers 2321, 2322, 2323, wherein received data can be posted (*e.g.*, displayed on a monitor) and the connection instance can be concurrently updated to reflect any successful and/or failed data retrievals. Thus, at any given moment the connection instance can include the most up-to-date version of data transferred between the motor vehicle and the insurance providers.

[00222] Moreover, the switching component 2341 can automatically switch user/driver to an insurance provider/company that bids the best rate. Such switching component 2341 can employ interrupts both in hardware and/or software to conclude the switching from one insurance provider to another insurance provider. For example, the interrupt can convey receipt of a more optimal insurance rate or completion of a pull request to the insurance providers 2321, 2322, 2323 or that a configuration has changed. In one particular aspect, once an interrupt occurs, an operating system analyzes the state of the system 2300 and performs an action in accordance with the interrupt, such as a change of insurance provider, for example.

[00223] Such interrupts can be in form of asynchronous external events to the processor that can alter normal program flow. Moreover, the interrupts can usually require immediate attention from a processor(s) associated with the system 2300. In one aspect, when an interrupt is detected, the system often interrupts all processing to attend to the interrupt, wherein the system can further save state of the processor and instruction pointers on related stacks.

[00224] According to a further aspect, the switching component 2341 can employ an interrupt dispatch table in memory, which can be accessed by the processor to identify a function that is to be called in response to a particular interrupt. For example, a function can accept a policy from an insurance provider, cancel an existing policy, and/or clear the interrupt for a variety of other reasons. The function can execute processes such as clearing the state of the interrupt, calling a driver function to check the state of an insurance policy and clearing, setting a bit, and the like.

[00225] Fig. 24 illustrates a switching component 2441 that further includes an analyzer component 2451, which further employs threshold ranges and/or value(s) (*e.g.*, pricing ranges for insurance policies, terms of the insurance policy, and the like) according to a further aspect of the subject innovation. The analyzer component 2451 can compare a received value for insurance coverage to the predetermined thresholds, which can be designated by an owner/driver. Accordingly, the analyzer component 2451 can determine if the received insurance coverage policies are within the desired range as specified by a user an "accept" or "reject", and/or further create a hierarchy from "low" to "high" based on criteria designated by the user (*e.g.*, price of the insurance policy, terms of the insurance policy, and the like).

[00226] According to a further aspect, the analyzer component 2451 can further interact with a rule engine component 2452. For example, a rule can be applied to

define and/or implement a desired evaluation method for an insurance policy. It is to be appreciated that the rule-based implementation can automatically and/or dynamically define and implement an evaluation scheme of the insurance policies provided. Accordingly, the rule-based implementation can evaluate an insurance policy by employing a predefined and/or programmed rule(s) based upon any desired criteria (*e.g.*, criteria affecting an insurance policy such as duration of the policy, number of drivers covered, type of risks covered, and the like.)

[00227] In a related example, a user can establish a rule that can implement an evaluation based upon a preferred hierarchy (*e.g.*, weight) of a criteria that affects the insurance policy. For example, the rule can be constructed to evaluate the criteria based upon predetermined thresholds, wherein if such criteria does not comply with set thresholds, the system can further evaluate another criteria or attribute(s) to validate the status (*e.g.*, "accept" or "reject" the insurance bid and operate the switching component based thereon). It is to be appreciated that any of the attributes utilized in accordance with the subject invention can be programmed into a rule-based implementation scheme.

[00228] Fig. 25 illustrates a system 2500 that illustrates type of data for dynamically adjusting insurance costs according to an aspect of the subject innovation. As explained earlier, the subject innovation customizes insurance rates to correspond to unique behavior/character traits of a user/driver by exploiting data banks (*e.g.*, from third parties), in conjunction with real time contextual driving data (*e.g.*, driving behavior) of such user/driver. Accordingly, insurance costs can be dynamically adjusted and the user/driver switched in real-time between insurance companies (*e.g.*, based on bids), to ensure obtaining optimum rates.

[00229] The data banks can include data pertaining to the motor vehicle 2510 (*e.g.*, maintenance history, current vehicle conditions, and the like); data related to the driver (*e.g.*, via health insurance records, police records, internet records, and the like); and data related to operating environment 2530 (*e.g.*, weather, geographical location, and the like.) Moreover, the real-time contextual driving data 2540 can include both an intensity portion and a frequency portion, which represent severity and regularity of driving episodes (*e.g.*, slamming the brakes, gradual/sudden deceleration, velocity variances, and the like). Although a single data store for each of data type, it is to be understood that multiple data stores can be employed in connection with the subject innovation. In addition, it is to be appreciated that any

number of reference data sources and stores can be located remotely from the rate adjustment component (not shown), and the analyzer component (not shown). In one particular aspect, the data bank 2520 can further include user profiles and demographics such as user preferences, age, gender, religion, ethnicity, education level, likes, dislikes, interests, occupation, political ideology, and the like – which can be employed in connection with the contextual information to facilitate generating customized insurance policies by the insurance providers.

[00230] Furthermore, the system 2500 can aggregate such user information amongst a plurality of users in connection with providing relevant results to a group of individuals (*e.g.*, with similar interaction histories, engaged in a common activity, part of a multi-user collaboration, within a work environment or social network). Such retrieval can benefit from the construction of models of interest from data about information access or consumption patterns by people with similar attributes and/or immersed in similar contexts (*e.g.*, similar demographics, similar locations, and the like). It is to be appreciated that the functionality associated with context-based insurance policies can also be employed as a context-based filter, to eliminate policies that do not match user predetermined thresholds.

[00231] The insurance providers 2550, 2552, 2554 and the motor vehicle can also be part of a network 2570 (*e.g.*, wireless network) such as a system area network or other type of network, and can include several hosts, 2561, 2562, 2563, 2564, 2565, which can be personal computers, servers or other types of computers. Such hosts generally can be capable of running or executing one or more application-level (or user-level) programs, as well as initiating an I/O request (*e.g.*, I/O reads or writes). Moreover, such I/O units can include one or more I/O controllers connected thereto, and each of the I/O can be any of several types of I/O devices, such as storage devices (*e.g.*, a hard disk drive, tape drive) or other I/O device. The hosts and I/O units and their attached I/O controllers and devices can be organized into groups such as clusters, with each cluster including one or more hosts and typically one or more I/O units (each I/O unit including one or more I/O controllers). The hosts and I/O units can be interconnected via a collection of routers, switches and communication links (such as wires, connectors, cables, and the like) that connects a set of nodes (*e.g.*, connects a set of hosts and I/O units) of one or more clusters.

[00232] Furthermore, the wireless communication network can be cellular or WLAN communication network; such as Global System for Mobile communication

(GSM) networks, Universal Mobile Telecommunication System (UMTS) networks, and wireless Internet Protocol (IP) networks like Voice over Internet Protocol (VoIP) and IP Data networks. Accordingly, the portable device employed by insurance providers 2550, 2552, 2554 can be a hand-held wireless communication device that can communicate with a wireless communication network, (*e.g.* wireless communication network) to further engage in an enriched text messaging in the written communication environment. Such connections can be shared among the insurance providers 2550, 2552, 2554 which can employ, personal computers, workstations, and any device capable of text messaging such as mobile phones for example.

[00233] It is to be appreciated that the system can supply data to insurance providers in accordance with determined and/or inferred context as well as automatically generate queries in the background as a function of user state. For example, a device (*e.g.*, cell phone, computing device, on-board computer system for a vehicle, boat, plane, or machine, and the like) can dynamically generate responses for queries in the background as a function of constantly changing state, initiate searches in the background and cache results for immediate viewing to the user. As an example, searches of databases of detailed highway safety information, conditioned on a current weather context, can be retrieved as a function of the location and velocity of a user's vehicle. Moreover, the driver/owner of the vehicle can be appropriately notified (*e.g.*, via visual and/or audio signals) regarding a potential change of insurance premiums. For example, immediate visual or audio feedback can be supplied to the driver via a heads up display, as to provide instantaneous notifications regarding change in driver's insurance policy – while mitigating driving distractions (*e.g.*, line of sight for driver remains substantially unchanged.)

[00234] Accordingly, the subject innovation introduces two insurance models, namely: 1) a user/driver complying with requirements of a single insurance company to maintain current insurance rates; or 2) different insurance companies bidding for the behavior of user not willing to necessarily abide to requirements of an insurance company. Moreover, the subject innovation can be implemented as part of a system local to each motor vehicle (*e.g.*, the rate adjustment component and the switching component are positioned on the motor vehicle); or part of a central management system, or a combination thereof.

[00235] Fig. 26 illustrates a system 2600 that determines location of a vehicle 2650 as part of customizing contextual data related to driving behavior of an owner/user in real-time, according to an aspect of the subject innovation. As explained earlier, the real-time contextual driving data can include both an intensity portion 2665 and a frequency portion 2675, which represent severity and regularity of driving episodes/ actions respectively (*e.g.*, slamming the brakes, gradual/sudden deceleration, velocity variances, and number of times such acts occur). Initially, a geographic location for the vehicle can be determined via a GPS positioning system 2606, wherein such data can then be matched with real-time weather and/or road conditions for the determined location via the wireless network 2610 and/or the IP network 2616, which interact with geographic maps serve 2616 or weather server 2620. In general, the geographic location data is determined by receiving geographic location signals of a GPS (global positioning system) technology. For example, the GPS can consist of a constellation of twenty-four satellites each in its own orbit approximately 11,000 miles above the earth. Each of the satellites orbits the earth in about twelve hours, and the positions of which are monitored by ground stations. The satellites each include atomic clocks for extremely accurate timing (*e.g.*, within three nanoseconds of each other) that provides the capability to locate the receiver (*e.g.*, a handheld terrestrial receiver) on the earth within, in some applications, one meter resolution.

[00236] The GPS location data can be received from a receiver (not shown) which is, for example, a wireless assisted GPS (WAGPS) device such as a GPS-enabled cellular telephone, GPS-enabled PDA, and the like WAGPS facilitates the transmission of the GPS location data from the receiver to a remote location. Generally, such can occur through a cellular network (not shown) where the receiver is a cellular telephone associated with insurance providers, to an IP network (not shown) (*e.g.*, the Internet), and terminating at the remote location, node or device on the Internet or on a subnet thereof.

[00237] When receiving geographic location signals from several of the GPS satellites, the receiver can further calculate the distance to each satellite of the communicating satellites and then calculate its own position, on or above the surface of the earth. It is to be appreciated, however, that the geographic location technology can also include, for example, WiFi triangulation, cellular telephone triangulation, radio frequency signal strengths, and digital television signals.

[00238] Fig. 27 illustrates a particular methodology 2700 of customizing insurance rates according to a further aspect of the subject innovation. While the exemplary method is illustrated and described herein as a series of blocks representative of various events and/or acts, the subject innovation is not limited by the illustrated ordering of such blocks. For instance, some acts or events may occur in different orders and/or concurrently with other acts or events, apart from the ordering illustrated herein, in accordance with the innovation. In addition, not all illustrated blocks, events or acts, may be required to implement a methodology in accordance with the subject innovation. Moreover, it will be appreciated that the exemplary method and other methods according to the innovation may be implemented in association with the method illustrated and described herein, as well as in association with other systems and apparatus not illustrated or described. Initially and at 2710 contextual data from various data banks can be accessed by the insurance providers or supplied thereto. As explained earlier, the data banks can include data pertaining to the motor vehicle (*e.g.*, maintenance history, current vehicle conditions, and the like); data related to the driver (*e.g.*, via health insurance records, police records, internet records, and the like); and data related to operating environment (*e.g.*, weather, geographical location, and the like.) Moreover, the real-time contextual driving data can include both an intensity portion and a frequency portion, which represent severity and regularity of driving episodes (*e.g.*, slamming the brakes, gradual/sudden deceleration, velocity variances, and the like). Subsequently and at 2720, such data can be analyzed by the insurance providers as to customize an insurance rate based thereon at 2730. Subsequently, the customized insurance rate can then be sent from an insurance provider to an owner/user of the vehicle (*e.g.*, in form of an insurance bid) at 2740.

[00239] Fig. 28 illustrates a related methodology 2800 of switching insurance to a policy with an optimal rate according to a further aspect of the subject innovation. Initially threshold ranges and/or discrete values can be set by the user/owner of the vehicle. For example, such threshold values and/or discrete ranges can relate to pricing ranges that the owner/user will consider or will not consider at all, various terms of the insurance policy such as minimum amount of liability desired, number of drivers that user/owner desires to be included in the policy, and the like. Such thresholds can facilitate determining whether an insurance bid should be considered and/or out right rejected. At 2820, the insurance bids can be obtained from the

insurance providers, and an optimal insurance rate selected at 2830. The insurance policy can then be switched (*e.g.*, automatically) to such optimal rate. Hence, during a trip the user/driver can actually be insured by various suppliers during different segments of such trip – (each of which supplied an optimal rate for the trip segment that switching thereto occurred.)

[00240] Fig. 29 illustrates exemplary system 2900 that collects contextual data related to acquiring biometrics from a driver/owner 2901 of a vehicle 2904 (*e.g.*, in real time) to facilitate customizing an insurance policy and further switching the user/owner 2901 to an optimal policy. In one particular aspect, values such as a biometric data (*e.g.*, temperature, blood sugar level, and the like) can be asynchronously read via sensor of the modular component 2908 and output values can be written directly to the I/O table by slave processors for subsequent communication to the process by specialized communications circuitry.

[00241] During execution of a control routine, (*e.g.*, real time monitoring of blood sugar level), values of the inputs and outputs exchanged with and/or acquired by the components 2911, 2912, 2913, 2914 and/or controlled process for data collection, can pass through the I/O table. The values of inputs in the I/O table can further be asynchronously updated from the controlled process by dedicated modular components. Moreover, modality specific circuitry can communicate with input and/or output modules over a bus on a backplane or network communications. The modality specific circuitry can also asynchronously write values of the outputs in the I/O table to the controlled process of data collection. The output values from the I/O table can then be communicated to one or more of the modular components and/ or associated output modules for interfacing with the process of data collection. Thus, a slave processor(s) can simply access the I/O table rather than needing to communicate directly with the master processor and/or controlled process of data collection.

[00242] For example, the system 2900 can be adapted to acquire data related to Electromyography (EMG, frequency range 2-500Hz), Electrocardiography (ECG, frequency range 0.05-100Hz, resolution of 24 bits), Electroencephalography (EEG, frequency range 0.16-100Hz), blood pressure, and the like. The system can employ a Common Data Controller, which has a Bus Interface, I/O functions (controls), and a module clock. The Bus Interface can coordinate activities of the system 2900 with a bus controller of the master controller (not shown), for transmittal of biometric indicia (*e.g.*, medical parameter data) and reception of control data.

[00243] Likewise, the I/O functions can control operation for the specific circuitry (*e.g.*, specific to EKG, EEG, and the like). Typically, the system 2900 (*e.g.*, required for a controlled data collection, such as collecting/monitoring blood sugar in real time) can be connected to other modular components on a common backplane through a network or other communications medium. As explained earlier, the system 2900 can include processors, power supplies, network communication modules, and I/O modules exchanging input and output signals directly with the master controller and/or the controlled process. Data may be exchanged between modules using a backplane communications bus, which may be serial or parallel, or via a network.

[00244] In addition to performing I/O operations based solely on network communications, smart modules can be employed that can execute autonomous logical or other control programs or routines. A RAM memory medium can function as a data storage medium for buffering of collected, so that data is not lost when the system bus is in use by other functions. Such memory also enables asynchronous data collection. Additionally, the module clock provides for timing on a modular component for data collection functions. The module clock supplies timing for data collection functions, and enables synchronous collection of data for supplying to insurance providers.

[00245] It is to be appreciated that various sensor components for a distributed controlled data collection system can be spatially distributed along a common communication link, such as a belt 2916 around a user's body as illustrated in Fig. 29. Certain components can thus be located proximate to predetermined portions of a driver's body. Data can be communicated with such modular components 2911, 2912, 2913, 2914 over a common communication link, or network, wherein all modules on the network communicate via a standard communications protocol.

[00246] Likewise, sensor can be distributed at various location of the vehicle 2904 to monitor health of the vehicle and driving behavior of user (*e.g.*, on gas pedal, steering wheel, and the like). Similarly, in such a distributed control system of the vehicle 2904, one or more I/O modules are provided for interfacing with a data collection process, wherein the outputs derive their control or output values in the form of a message from a master controller over a network or a backplane. For example, a sensor component can receive an output value from a processor, via a communications network or a backplane communications bus. The desired output value for controlling data collection associated with biometric indicia can be generally

sent to the output module in a message, such as an I/O message. The system 2900 that receives such a message can provide a corresponding output (analog or digital) to the controlled process for data collection. The system 2900 can also measure a value of a process variable and report the input values to a master controller or peer modular component over a network or backplane. The input values can further be employed by the master processor for performing control computations.

[00247] Fig. 30 illustrates a system 3000 with an inference component 3030 that can facilitate customizing insurance rates based on contextual data and switching to an optimal rate based thereon. As used herein, the term "inference" refers generally to the process of reasoning about or inferring states of the system, environment, and/or user from a set of observations as captured via events and/or data. Inference can be employed to identify a specific context or action, or can generate a probability distribution over states, for example. The inference can be probabilistic–that is, the computation of a probability distribution over states of interest based on a consideration of data and events. Inference can also refer to techniques employed for composing higher-level events from a set of events and/or data. Such inference results in the construction of new events or actions from a set of observed events and/or stored event data, whether or not the events are correlated in close temporal proximity, and whether the events and data come from one or several event and data sources.

[00248] For example a process for determining an insurance rate can be facilitated via an automatic classifier system and process. A classifier is a function that maps an input attribute vector, x = (x1, x2, x3, x4, xn), to a confidence that the input belongs to a class, that is, f(x) = confidence(class). Such classification can employ a probabilistic and/or statistical-based analysis (*e.g.*, factoring into the analysis utilities and costs) to prognose or infer an action that a user desires to be automatically performed.

[00249] A support vector machine (SVM) is an example of a classifier that can be employed. The SVM operates by finding a hypersurface in the space of possible inputs, which hypersurface attempts to split the triggering criteria from the non-triggering events. Intuitively, this makes the classification correct for testing data that is near, but not identical to training data. Other directed and undirected model classification approaches include, *e.g.*, naïve Bayes, Bayesian networks, decision trees, neural networks, fuzzy logic models, and probabilistic classification models

providing different patterns of independence can be employed. Classification as used herein also is inclusive of statistical regression that is utilized to develop models of priority.

[00250] As will be readily appreciated from the subject specification, the subject invention can employ classifiers that are explicitly trained (*e.g.*, via a generic training data) as well as implicitly trained (*e.g.*, via observing user behavior, receiving extrinsic information). For example, SVM's are configured via a learning or training phase within a classifier constructor and feature selection module. Thus, the classifier(s) can be used to automatically learn and perform a number of functions, including but not limited to determining according to a predetermined criteria when to update or refine the previously inferred schema, tighten the criteria on the inferring algorithm based upon the kind of data being processed (*e.g.*, type of contextual data, real time driving behavior and the like.)

[00251] Fig. 31 illustrates a further aspect of the subject innovation that employs a plurality of cameras 3101, 3102, 3103, 3104, 3105 to facilitate collection of contextual data, and/or for accident analysis. In one particular aspect, any of the cameras 3101, 3102, 3103, 3104 and 3105 can include a monitor shell having a monitor lens on the outside and a charge-coupled device (CCD) on the inside. Such camera can further include a motherboard shell with motherboard peripheral circuits on the inside, and a transmission line can electrically couple the motherboard and the CDD- wherein an image output line can be additionally mounted on the motherboard. It is to be appreciated that the cameras can be mounted on various locations, such as by mounting the motherboard on the inside of the car trunk apart from a car bumper, for example. It is further to be appreciated that other type of cameras such as metal oxide semiconductor (CMOS) cameras, infrared cameras, and the like can be employed to transfer data to insurance providers via buffers 3116, 3118, 3120 (1 to k, where k is an integer).

[00252] As illustrated by the exemplary system 3110, a threading and communication architecture can be employed to facilitate interaction of the cameras 3101, 3102, 3103, 3104, 3105 with the insurance provider(s) 3150. The system 3110 includes two threads, namely, a camera interface thread 3112 and an instruction thread 3114. The camera interface thread 3112 can process user interface activity of the cameras, such as managing commands, menus and the like. Likewise, the

instruction thread 3114 provides instructions for retrieving of data to and from the cameras and their associated applications.

[00253] The two threads 3112 and 3114 are operatively linked or connected through one or more buffers 3116, 3118, and 3120. Each buffer 3116, 3118, 3120 can hold information retrieved from the cameras for a predetermined time, as well as queues commands and requests from the camera interface thread 3112 to the instruction thread 3114. The buffers 3116, 3118, and 3120 can further serve as a synchronization system between the threads.

[00254] For example, when an application associated with a camera is initiated, initially only one interface thread such as 3112 can become active. The interface thread 3112 can perform application initialization operations, such as creation of the initial GUI elements, command-line parsing, and the like. The camera interface thread 3112 also gathers information about the process to be performed from command-line arguments, menu selections and dialog boxes.

[00255] The instruction thread 3114 can be responsible for all major use of the associated cameras such as view angle, pixel size, number of frames collected per second, and the like. The instruction thread 3114 can supply a queue of commands to the camera interface thread 3112, such as data being stored in buffers 3116, 3118, and 3120, and by carrying out active requests. Accordingly, buffers can be refilled, wherein data that has been expired (*e.g.*, after a predetermined period such as several minutes) can be discarded. The predetermined period can further be extended by the insurance provider(s) 3150, such as when an accident occurs and the driver contacts the insurance provider – and hence data related to the accident can be preserved.

[00256] Visible Insurance. Because insurance is purchased and then forgotten, the selling company has difficulty achieving many of the benefits of a brand. For example, rarely does a guest in one's car comment "Oh, I see you have xyz insurance. How do you like dealing with them?"

[00257] Fig. 32 illustrates an example configuration 3200 for disclosing an interface 3202 to the user with real-time insurance information. Insurance can be calculated in real-time and as such can more accurately reflect appropriate coverage for a situation of a driver. A plurality of different factors can influence a likelihood of the driver being involved in an accident, having a vehicle stolen, and the like. For example, if the driver is travelling through bad weather, then risk can be higher and a rate can be increased in real-time as weather conditions change – conversely, if there

is relatively little traffic surrounding the driver's vehicle, then the rate can be lowered. An algorithm or complex model can be used to calculate the insurance and the insurance rate can be disclosed to the user through the interface 3202.

[00258] To facilitate operation, an analysis component 3204 can be employed that evaluates insurance rate information against current vehicle operation by a user. Specifically, the evaluation can compare the current operation against insurance rate information () to determine if an appropriate rate is being used, if the rate should be changed, what the change should be, *etc.* For instance, different aspects of vehicle operation can be taken into account - Fig. 32 discloses four aspects of metadata that relate to insurance rate: weather and how a user reacts, speed (of a vehicle), traffic and how the user reacts, and noise (*e.g.*, radio level). It is to be appreciated that numerous other aspects can be taken into consideration.

[00259] A rendering component 3206 can be employed that renders on a display a real-time insurance rate that is based at least in part on a result of the evaluation. For example, an insurance rate can be determined and represented upon the interface 3202 – as more information is gathered, pieces of driver information change, and the like, the interface 3202 can be manipulated to disclose a changed rate. A processor that executes the computer executable components stored on a storage medium can be employed (*e.g.*, analysis component 3204 and rendering component 3206).

[00260] In an alternative embodiment, the analysis component 3204 can communicate with an insurance company (*e.g.*, continuous communication) and obtain an insurance rate directly. The rendering component 3206 can modify the interface 3202 such that the obtained rate is presented to the user. As new rates are identified by the analysis component 3204, the rendering component 3206 can make appropriate modification to the interface automatically.

[00261] The interface 3202 can configure such that different pieces of information are presented to a user. For example, a real-time rate portion 3208 can be presented and modified depending on an output of the rendering component 3206. The rate shown can be monthly, hourly, a rate of a journey (*e.g.*, travel from two different points), and others. Data associated with the rate can also be disclosed, such as which company is supplying the rate.

[00262] A light indicator 3210 can be used by the interface to quickly highlight to an operator how her driving influences the insurance rate. With one implementation, the user can be protected through coverage associated with a standard rate (*e.g.*, X

dollars per month) that is generally applied. However, if a user drives in a certain manner or meets a certain standard, then the rate can be modified in a positive or negative direction. For example, if a user obeys the speed limit for Y% of the time she drives in a month, then she can receive a Z% discount on her rate. This can also be used to increase the rate, such that obeying the speed limit for less than a prescribed amount causes a rate to increase. A light indicator 3210 can change color based upon vehicle operate in relation to a real-time insurance rate. For instance, a red-yellow-green indicator can be used where if a driver is performing to lower her rate then green is shown, to increase her rate then red is shown, and if there is no change, then yellow is shown. In one implementation, the light indicator 3210 can integrate in a heads-up display so the driver can quickly ascertain if they are driving in a beneficial or detrimental manner.

[00263] More detailed feedback can be provided to the user and displayed through portion 3212 of the interface. For example, a reason why the light indicator 3210 is red can be provided – analysis of travel can be performed and the feedback can be limited in disclosure during safe instances (*e.g.*, a vehicle is stopped at a traffic signal, the vehicle is in park, *etc.*). It is also possible for a user to be involved in a travel group, such that rates and/or discounts (*e.g.*, coupons, rate reduction, *etc.*) are based upon how the drive compares against other group members. For example, a number of parents whose children play on a sports team can join in a travel group, such that a safest member is provided a discount insurance rate (*e.g.*, since there is a high likelihood one parent travels with children from different families). A group rank (*e.g.*, ranking of safety of a user within a peer group) can be presented through portion 3214 and as such, a driver can determine if he should modify driving behavior – data of the travel group can be disclosed to other members. In an illustrative instance, parents of new drivers can enroll their newly driving children in a ranking program. With this ranking program, a child can be ranked against his peers (*e.g.*, nationally, from a same town or school, *etc.*) and the ranking can be used to improve driving or incentives the child, such as through a financial reward.

[00264] Now referring to FIG. 33, an example system 3300 is shown with various components that assist with interface modification. A collection component 3302 can obtain the insurance rate information (*e.g.*, a default insurance rate, an insurance rate model, *etc.*) or metadata that pertains to current vehicle operation by the user (*e.g.*, a result of sensor monitoring). A communication component 3304 and/or a search

component 3306 can be employed to assist in operation of the collection component 3302.

[00265] The communication component 3304 can engage with other devices to transfer information, such as to send a request for information, receiving information, *etc.* Operation can take place wirelessly, in a hard-wired manner, employment of security technology (*e.g.*, encryption), *etc.* Moreover, the communication component 3304 can utilize various protective features, such as performing a virus scan on obtained data and blocking information that is positive for a virus. In one example, the communication component 3304 can communicate with an insurance company to ascertain a rate.

[00266] To gather information a search component 3306 can be employed to locate a source that provides information obtainable by the collection component 3302. A source can be a database server, an airway transmission, an incoming electronic message, *etc.* Multiple sources can provide conflicting information (*e.g.*, different radio stations provide different weather reports) and the search component 3306 can include logic that resolves conflict issues (*e.g.*, information is downloaded from a source with a history of being highly trustworthy.) For example, the analysis component 3204 can initiate a request to obtain metadata. The search component 3306 can determine data sources where valuable information resides and locate the data sources – the communication component 3304 can make transfer requests to the data sources and response to the requests can be collected and then processed by an analysis component 3204. A more active gathering can occur, such that access is requested or taken and the collection component 3302 scans or extracts appropriate information.

[00267] It is to be appreciated that determinations and inferences disclosed herein can be practiced through implementation of artificial intelligence techniques. An artificial intelligence component 3308 (*e.g.*, used in practicing the artificial intelligence techniques) can employ one of numerous methodologies for learning from data and then drawing inferences and/or making determinations related to dynamically storing information across multiple storage units (*e.g.*, Hidden Markov Models (HMMs) and related prototypical dependency models, more general probabilistic graphical models, such as Bayesian networks, *e.g.*, created by structure search using a Bayesian model score or approximation, linear classifiers, such as support vector machines (SVMs), non-linear classifiers, such as methods referred to

as "neural network" methodologies, fuzzy logic methodologies, and other approaches that perform data fusion, *etc.*) in accordance with implementing various automated aspects described herein. In addition, the artificial intelligence component 3308 can also include methods for capture of logical relationships such as theorem provers or more heuristic rule-based expert systems. The artificial intelligence component 3308 can be represented as an externally pluggable component, in some cases designed by a disparate (third) party.

[00268] The rendering component 3206 can determine the modification based upon logic retained on storage. Different pieces of information, such as obtained information, component operating instructions (*e.g.*, of the search component 3306), an original route, *etc.* can be held on storage 3310. Storage 3310 can arrange in a number of different configurations, including as random access memory, battery-backed memory, hard disk, magnetic tape, *etc.* Various features can be implemented upon storage 3310, such as compression and automatic back up (*e.g.*, use of a Redundant Array of Independent Drives configuration). The analysis component 3204 and/or rendering component 3206 (as well as other components) can reside at a remote location (*e.g.*, a server at an office of the company) and transfer (*e.g.*, through the communication component 3304) an instruction used in rendering. Additionally, the analysis component 3204 and/or rendering component (as well as other components) can reside upon a vehicle, personal electronic device (*e.g.*, mobile telephone), at a third party location, be distributed across a data network, *etc.*

[00269] Additionally, a transaction component 3312 can be employed to perform financial reward functions and operations. For instance, if a driver meets a standard (*e.g.*, travel for a journey without speeding), then the driver can be rewarded with a financial credit. The transaction component 3312 can instruct a financial institution (*e.g.*, through the communication component 3304) to credit an account for the driver, send the driver a check, *etc.*

[00270] Now referring to Fig. 34, an example system 3400 is disclosed for performing operations in relation to presentation of a real-time insurance rate. A collection component 3302 can gather information, an analysis component 3204 evaluate at least a portion of the collected information, and the rendering component 3206 can determine how to manipulate an interface based upon the evaluation. According to one embodiment, the collection component 3302 can obtain information from local sources (*e.g.*, a speed sensor, an internal cabin microphone, *etc.*), remote

sources (*e.g.*, weather stations), dedicated sources (*e.g.*, a database of driver history), and the like. The analysis component 3204 can be employed that evaluates at least a portion of the obtained metadata (*e.g.*, a result of the evaluation is used by the rendering component to render the real-time insurance rates on the display). The evaluation can include statistical comparison, inputting of metadata into a model, predictive analysis, *etc.* Moreover, the manipulation can include changing a number upon the interface, changing a color of an interface element, turning the interface on or off, *etc.* Additionally, a rate component 3404 can be used to determine a real-time insurance rate (*e.g.*, make the determination based on a result of the analysis).

[00271] An assessment component 3406 can be used that appraises real-time vehicle operation (*e.g.*, if a vehicle is speeding, rapid acceleration, frequent braking) or at least one contextual factor related to current vehicle operation. The assessment component 3406 can function as part of a cellular telephone, radio frequency identifier, keyfob, or a combination thereof, as well as others. The at least one contextual factor can include traffic level (*e.g.*, heavy traffic, light traffic, speed of surrounding traffic, driver history of surrounding traffic, *etc.*). Depending on if there is heavy traffic, risk can change and thus influence the rate. The factor can also include a number of passengers in the vehicle (*e.g.*, identity of passengers, if there are passengers, characteristics of the passengers, *etc.*). Different risk factors can be associated with children in comparison to adults and be used in rate calculation. Another factor can include a status of an operator related to engagement of a cellular telephone communication – if a user is on a cellular call, then a rate can be increased. A further factor includes time of day, such that if driving occurs at night visibility can be lowered and a different rate applied. Yet another factor includes weather – this can include pure weather (*e.g.*, rainy roads, snow that limits visibility, a clear day) as well as how an operator reacts to a weather condition (*e.g.*, historically, if a user is slowing to compensate for low traction, *etc.*). A further factor can be history of a neighborhood that the vehicle travels through; this can relate to operation as well as to real-time insurance for vandalism, theft, *etc.* If the user parks a car overnight in a high crime area with high history of car thefts, then a rate can be increased. Another contextual factor considered can be intended destination of the operator and context surrounding the destination. For example, if a user is a student that is headed to a class and she is late, then there is a higher likelihood of her driving recklessly and thus the rate can be increased. Yet another factor can include real-time condition of

the vehicle. In one example, if tire pressure is low, then there can be an inference that there is a higher likelihood of an accident and thus a rate should be increased. A combination of these factors as well as other factors can be used. The assessment component 3406 can also be used to weigh different factors against one another to determine if an operator is overall being safe or unsafe. A calculation component 3408 can be used that determines the insurance rate that is rendered based upon an outcome of the appraisal and the evaluation.

[00272] A disclosure component 3410 can provide a real-time insurance rate to a user (*e.g.*, operating a vehicle passenger or operator, as a pedestrian, *etc.*), such as through display (*e.g.*, an interactive interface) – thus, the disclosure component 3410 can produce the display. A non-exhaustive list of disclosure components include a display screen, touch screen, speaker system, virtual reality environment, Braille production system, printer, *etc.* In addition, the disclosure component 3410 can present information (*e.g.*, through the display) in multiple formats, such as showing a video with audio capabilities. Moreover, the disclosure component 3410, as well as other components disclosed in the subject specification can implement upon a personal electronic device (*e.g.*, cellular telephone, personal digital assistant, *etc.*), upon a vehicle (*e.g.*, automobile, motorcycle, bicycle, airplane, helicopter, motorboat, self-balancing transportation device, *etc.*), *etc.*

[00273] The disclosure component 3410 can include a personalization component 3412 and/or an integration component 3414 – however, it is to be appreciated that the personalization component 3412 and/or integration component 3414 can function as independent entities (*e.g.*, not implement upon the disclosure component 3410). The personalization component 3412 can be used to enable a user to modify the display (*e.g.*, interface). The modification can include information displayed upon the interface (*e.g.*, which items are disclosed, such as rate, target speed, *etc.*), location of information displayed upon the interface (*e.g.*, formatting what is shown where), where the interface displays (*e.g.*, on a dashboard, in a heads-up display, integrated as part of a navigation system, *etc.*) , or a combination thereof, as well as others, such as color or theme of the interface.

[00274] The disclosure component 3410 can produce the display with driving feedback information (*e.g.*, real-time feedback, a collective summary of a journey of how a user can improve vehicle operation to lower an insurance rate, *etc.*). The produced display can also include an indicator showing at least one standard that is

used to achieve an insurance rate modification (*e.g.*, a target speed the driver should keep under). Another rendering can include a status of at least one standard that is used to achieve an insurance rate modification (*e.g.*, if the user has exceeded the standard). A combination of these as well as other factors can be used.

[00275] Now referring to Fig. 35, an example system 3500 is shown for presenting insurance information to an operator. A vehicle 3502 can include a device 3504 that displays information in relation to insurance associated with the vehicle 3502. Depending on a real-time rate used, the display can change indicating to an operator how current conditions influence the rate. The device 3504 can include a color element 3506 that varies in color across a spectrum. Moreover, the device 3504 can include a variable component 3508 that displays at least one color across the spectrum to indicate a current driving condition. The device 3504 can be located in a driver's viewing range during operation of the vehicle 3502. The device 3504 can also prominently display a name of the insuring company providing coverage to make the feature of variable rate insurance visible to the driver and passengers in the vehicle.

[00276] According to one embodiment, the current driving condition is a function of a safe operation or an unsafe operation of the vehicle (*e.g.*, travelling speed, distance from other vehicles, *etc.*). A safe operation can be indicated at the first end of the spectrum and the unsafe operation can be indicated at the second end of the spectrum. Moreover, the safe operation or the unsafe operation of the vehicle can be determined based on vehicle telemetrics of the vehicle 3502 (*e.g.*, if drivers are wearing safety belts, if a radio is playing, if an oil change is due, *etc.*), an insurer's network 3510 (*e.g.*, driver history, overall company liability, liability against premiums, *etc.*), public information sources 3512 (*e.g.*, weather channels, police public communications, *etc.*), or combinations thereof, as well as others. The device 3504 can be located within a dashboard of the vehicle 3502, as well as on a personal electronic device, another part of the vehicle, *etc.*

[00277] There can be a device 3504 that is placed on (or integral to) a vehicle's dashboard (or other location in a vehicle 3502) without posing a significant risk of distraction. For example, the driver could be able to perceive the device while driving and without having to take an undue amount of concentration off the road and/or the driving environment (*e.g.*, other drivers, pedestrians, and so forth). The device can include color elements, such as Light Emitting Diodes (LED) or other light producing means, that can vary in color across a spectrum (*e.g.*, from red to green, from a dark

shade of color to a lighter shade of color, and so forth) to indicate how safely a vehicle is being driven. The device 3504 can convey to the driver the safe (or unsafe) operating condition of the vehicle 3502 in real-time, which can influence the driver's behavior (*e.g.*, cause the driver to slow down if the driver is speeding). The details related to how safely the vehicle is being driven can be based upon data from the vehicle's telemetrics (*e.g.*, speed of the vehicle, braking characteristics, and so forth), the insurer's network 3510, and/or public information sources 3512 (*e.g.*, weather conditions, construction areas, current accidents or road congestion, and so forth).

[00278] According to some aspects, a color from a different spectrum can be utilized to indicate situations when there is no information available, not enough available information, and/or no connectivity to a central network (*e.g.*, insurer's network). For example, while a vehicle is being driven through rural areas, there might be limited or no wireless reception, thus communication cannot be conducted with another entity (*e.g.*, insurer's network). In this situation, a different color, such as blue, can be presented to the user to indicate that information is still being gathered and/or analyzed, but there is no information available for the driver at the current time. In accordance with some aspects, the color spectrum can indicate other parameters in addition to (or in lieu of) how safely the vehicle is being driven. For example, the colors can represent operating cost, environmental impact, and/or other factors that might be of interest to the driver.

[00279] The device 3504 can include a color element (with LEDs or other technology) that varies from red to green across the hue spectrum that represents how safely a vehicle is being driven based upon data from the vehicle's telemetrics, an insurer's network, and public information sources and that can be placed on the vehicle's dashboard without significant risk of distraction. The device can be relocated to become an element of the vehicle's dashboard or control display systems. In addition to a continuous red to green scale a blue element can be included in the display to indicate when there is no information available about factor of interest (*e.g.*, safety, operating cost, environmental impact, *etc.*). As opposed to using a hue, relative brightness can also be used by the color element.

[00280] Now referring to Fig. 36, an example methodology 3600 is shown for presenting information related to a real-time insurance rate. Metadata can be collected at action 3602 pertaining to real-time operation of a vehicle and at least a portion of the metadata can be evaluated at act 3604. The metadata can include

contextual information, driver history, and real-time driving information that relates to operation of a vehicle, as well as other metadata. Based upon a result of the evaluation, there can be calculation a real-time insurance rate at event 3606.

[00281] A determination can be made at event 3608 on how to present the calculated rate. For example, the determination can be if the rate should be shown on a center console or a heads-up display. A determination can also be made on how to display data (*e.g.*, if a numerical rate should be disclosed or a color element should be lit). Additionally, a determination can be made on other data to disclose, such as safety, environment impact, cost of operating vehicle, a target speed, group rank, and the like. The determined rate and other determined data can be presented through a display at act 3610. Thus, the determined rate is presented upon a display viewable to an operator or passenger of a vehicle.

[00282] A check 3612 can determine if feedback should be presented to the user – the feedback can be supplied in real-time as well as be a collective summary presented after a driving session is complete. If no feedback should be presented, then the methodology 3600 can end at act 3614. In one instance, if there is a new driver attempting to obtain a full drivers license (*e.g.*, teenage driver) or newer driver, then the check 3612 can determine feedback should be automatically provided. In another embodiment, an operator can be solicited on if feedback should be presented – depending on a response the methodology 3600 can end or continue.

[00283] Operation of the vehicle can be evaluated at act 3616, which can occur though different embodiments. As a user operates a vehicle, metadata can be collected and evaluated in real-time. In an alternative embodiment, data can be collected, but evaluation does not occur until the check 3612 determines feedback should be presented. At action 3618, there can be determining feedback for suggesting future driving actions for the operator to perform in future driving to lower the insurance rate. The methodology 3600 can include presenting the feedback (*e.g.*, through the display, through a printout, transferring feedback as part of e-mail or a text message, *etc.*) at action 3620. The feedback can be directly related to a driving session as well as be an aggregate analysis of overall driving performance (*e.g.*, over multiple driving sessions).

[00284] Now referring to Fig. 37, an example methodology 3700 is shown for providing an advertisement in conjunction with real-time insurance metadata. Metadata related to calculating a real-time insurance rate can be collected at event

3702. At action 3704, there can be evaluating contextual information, driver history, and real-time driving information that relates to operation of the vehicle. Calculating a real-time insurance rate based upon a result of the evaluation can occur though action 3706 (*e.g.*, the determined rate is presented upon a display viewable to an operator or passenger of a vehicle).

[00285] An interface can ultimately be used to disclose a calculated rate to an operator and at event 3708 there can be formatting of the interface. The formatting can include color scheme, font used, brightness, where items should be shown, which items should be shown, *etc.* Additionally, an advertisement (*e.g.*, paid announcement, commercial message encouraging a user to make a purchase, *etc.*) can be disclosed to a user. The advertisement can include a coupon, a trademark (*e.g.*, logo of a providing insurance company), a song and/or audio message, and others.

[00286] A check 3710 can occur to determine if an advertisement should be disclosed with the interface (*e.g.*, as part of the interface). Factors that can be used in determining if the advertisement should be disclosed can include likelihood of effectiveness, amount of overall advertisement exposure, meeting of contract requirements, *etc.* Potential advertisements can be identified and there can be analysis of those advertisements at act 3712. The analysis can include comparing an audience (*e.g.*, operator and passengers in the vehicle) against advertisements designed to influence the audience. Therefore, an audience for the advertisement can be determined at action 3714. In an alternative implementation, the analysis of act 3712 and determination of action 3714 are used to determine if an advertisement should be disclosed (*e.g.*, check 3710). At event 3716, there can be selecting an advertisement to disclose along with the determined rate and the advertisement can be integrated upon the interface at act 3718.

[00287] If the check 3710 determines an advertisement should not be disclosed or if the advertisement is integrated, then the interface can be disclosed at action 3720 and as such the selected advertisement can be presented with the determined rate. According to one embodiment, the display of the vehicle is physically integrated upon a dashboard of the vehicle, is a heads-up display, is located within the vehicle, or a combination thereof, as well as other. In a further embodiment, the display can be an interactive interface, upon which an operator can engage the interface and be presented information on rationale for the rate (*e.g.*, an algorithm, factors used, *etc.*),

how the operator can improve the rate, how the operator compares against other operators, or a combination thereof, or other information.

[00288] A regression-based method (*e.g.*, an embodiment of methodology 3700) can be used for reducing complex multi-dimensional data available through the insurer's network to a single or small number of values that can be represented as color(s) produced by LEDs and representing how safely the vehicle is being driven that can be placed on a vehicle's dashboard without significant risk of distraction. The method can be flexible as to a color's meaning so that in addition to representing safety, can be made to represent operating cost, environmental impact, or other factors of interest to the vehicle's driver. Also, the method can mathematical alternatives to regression-based approaches to improve the accuracy of assessments. Additionally, the method can use using a variable defined by the vehicle's driver to combine factors that are considered important (such as weighing safety, cost and environmental impact, for example or indicating how much like their normal driving pattern they are currently driving). Statistical information about the surrounding area can also be used to indicate how safe it is to leave the vehicle unattended in its current location (parking the vehicle).

[00289] Now referring to Fig. 38, an example methodology 3800 is shown for selecting an insurance carrier. Different configurations can be used to provide insurance coverage in real time. For example, a journey can be evaluated (*e.g.*, through an entered intended destination of a navigation system) and different parts of the journey can be covered by different companies (*e.g.*, highways covered by company A, city roads by company B). Conversely, one company can cover an entire journey or span of time as well as companies continuously changed based upon different factors (*e.g.*, if the person speeds, company X is cheaper and the switch automatically occurs). Additionally, a user can be requested to affirm a change in insurance company (*e.g.*, explicitly, approve of the process before a journey, *etc.*)

[00290] Since there can be different insurance companies offering coverage, then an auction configuration can be used for company selection. A request for a bids can take place at action 3802, such as at a start of a time period, a start of a journey (*e.g.*, before starting, upon starting, and the like). Different insurance companies can determine if they want to submit bids and transfer acceptance to the request - the acceptance can be collected at act 3804. Metadata can be provided to accepting companies (*e.g.*, transferred to the companies, made accessible to the companies, *etc.*)

at event 3806. Since the metadata can be personal and sensitive in nature, access can be limited in disclosure (*e.g.*, limited to accepting companies).

[00291] Companies can evaluate the metadata provided as well as information from other sources and determine a rate or a rate model (*e.g.*, based on factors, such as speeding, different rates for coverage). The bids can be received at action 3808 and evaluated at event 3810 – a bid can include one coverage option as well as different options that can be selected (*e.g.*, $M coverage or $K coverage). In an alternative configuration, metadata disclosure is not restricted and the bidding can be a more open competition.

[00292] A check 3812 can be run to determine if there is a qualifying bid. A configuration can be such that an operator or vehicle has a default insurance carrier and the bidding is used to determine if there is a company and/or bid that is better than the default. Thus, if there is no qualifying bid (*e.g.*, a bid that is better than the default), then the standard carrier can be used at act 3814. However, insurance coverage can be implemented such that there is no standard carrier used and a best bid can be used in coverage selection. At event 3816, there can be selecting of a bid to use for vehicle or operator coverage – more than one bid can be selected to cover the user and selection can be performed automatically (*e.g.*, through use of artificial intelligence techniques). Messages can be transferred to at least one winning as well as other companies at act 3818. The interface can be configured based upon the winning bid (*e.g.*, based upon how a winner instructs, with information consistent with the bid such as standards and rates, *etc.*) at action 3820 and the interface can be presented to an operator of a vehicle.

[00293] Referring to Fig. 39, an example methodology 3900 is disclosed for supplying a rate for insurance coverage. While insurance calculation can be performed at a vehicle, a company can determine a rate or rate structure available to a vehicle or operator. The insurance company can employ software to monitor vehicle operation and identify an opportunity to provide insurance at action 3902.

[00294] At event 3904, there can be collecting the contextual information, driver history metadata, and real-time driving information (*e.g.*, the collection is evaluated and used in calculating the real-time rate). There can also be evaluating contextual information, driver history information, and real-time driving information that relates to operation of a vehicle at act 3906 (*e.g.*, at least a portion of the information is retained upon physical storage). A check 3908 can be used to determine if the

opportunity should be pursued (*e.g.*, based upon a result of the evaluation). If it is determined that the opportunity should not be pursued, then the methodology can return to action 3902 to identify another opportunity.

[00295] At action 3910, there can be calculating a real-time insurance rate based upon a result of the evaluation (*e.g.*, the determined rate is presented upon a display viewable to an operator or passenger of a vehicle). The real-time rate can be supplied at event 3912, such as through transferring the rate to a requesting vehicle. The rate can include a rate structure for what to charge an operator based on different situations as well as be a model supplied that can be used locally (*e.g.*, at the vehicle) to determine a real-time rate.

[00296] A check 3914 can be performed to determine if the rate is such that an entity accepts the rate for the rate to be in effect. For example, the insurance company can globally provide for a vehicle (*e.g.*, through a time-based contract) and the rate can be automatically implemented since the company provides the global rate – thus the rate is specific to a situation and the identified opportunity is an opportunity to provide a different and/or more accurate rate.

[00297] If there should be acceptance before providing coverage (*e.g.*, based upon a result of the check 3914), then a determination can be made on if there is acceptance at event 3916. For example, event 3916 can include waiting a time for a response, obtaining the response (*e.g.*, to the bid) and evaluating the response to determine if there is acceptance. Acceptance can be affirmed at act 3918 and coverage can be provided (*e.g.*, if acceptance is not required, if acceptance is affirmed, *etc.*) at action 3920. In an alternative embodiment, if acceptance is not received (*e.g.*, there is a rejection, a timer expires, *etc.*), then the methodology 3900 can return to action 3902 to identifying another opportunity.

[00298] In accordance with at least one aspect, the disclose innovation relates to consolidating, analyzing, and presenting information that results from the acquisition and handling of data for an insured unit of risk. Thus, there can be presenting a qualitative representation of summary data that can be derived from data that is being gathered primarily to calculate the cost of insurance in real time. Using a color scale (*e.g.*, from red to green across the hue spectrum) to summarize real-time data on road, vehicle and traffic conditions, driving technique, and location, there can be a visual assessment of safety continuously available to a driver or passenger.

[00299] Multivariate instrument optimization could be used to combine numeric inputs to create a rapidly perceived display. A regression-based approach, which can be implemented in accordance with at least one aspect disclosed herein, combines the inputs, and can produce an output that summarizes them along one or a few important dimensions; that output can be converted to a hue.

[00300] The hue scale could vary from green (*e.g.*, used when conditions are especially safe) through yellows and oranges to red (*e.g.*, when they are especially dangerous). The hue scale could also turn blue when the car is off the network or the data coming from the vehicle cannot be evaluated at a reasonable standard of accuracy.

[00301] In one illustrative embodiment, the device uses three light-emitting diodes (LEDs) (*e.g.*, red, green and blue) or similar devices mounted on a printed circuit board (PCB) and driven by logic on that board that interprets a digital output coming from the vender's under dash unit. An on-board circuit could, such as based on that value, adjust the LEDs so that together they produce the appropriate color to represent current conditions. The PCB could also be enclosed in an attractive disk-shaped acrylic package, suitable for placement on the dashboard of the vehicle. The package could be embossed with the name and logo of the insurance carrier and connect to the vendor's under-dash unit with a simple chord.

[00302] At least one aspect disclosed herein can allow the automobile insurance industry to take advantage of information about a vehicle's location and conditions of operation to assess risk dynamically and thereby adjust insurance rates. Aspects disclosed can function in conjunction with devices that collect and integrate information as black boxes (*e.g.*, that operate either outside of the user's visual awareness or that provide feedback through web pages or GPS (global positioning system) displays).

[00303] Use of a black box along can be limited such that the box renders the service invisible to the insurance consumer most of the time. A limitation of a complex display could be that it adds a set of controls to those the driver must already contend with, thereby relegating their use to times when the operator is not actually driving or increasing the prospects of driver distraction.

[00304] The disclosed innovation contemplates a new way of summarizing the information and presenting it in the form of an attractive and simple device that would emit a soft glow reflecting the safety (or cost, environmental impact, or similar) of the

current driving situation. Therefore, there can be benefit of making the insurance carrier visible to the driver and passengers of the vehicle.

[00305] Thus, there can be a method of extending an insurer's visibility to its customers while providing the customers with valuable feedback on how safely they are driving a vehicle includes a dashboard mounted display and an approach to summarizing multiple dimension data using a continuous color scale.

[00306] REAL TIME INSURANCE GENERATION. Traditional methods of determining an insurance rate for a driver involves reviewing the driver's driving history (*e.g.*, traffic violations in a particular period, age, location, and the like), the vehicle to be driven, location of the vehicle, *etc.*, and generating an insurance rate based thereon. Rather than insuring each vehicle, the focus of insurance is placed upon the individual and real-time information generated reflecting the driver's driving habits/skills. The issue is how to identify a particular driver and associate them with the vehicle that they are driving? An individual may not only drive their vehicle but can also have access to and drive a family member's vehicle, friend's vehicle, corporate fleet vehicle, rental vehicle, *etc.* Therefore, it is of interest to be able to track and monitor the individual driver regardless of the vehicle they are driving. By gathering real-time data, insurance rates can be determined that are more representative of a driver's driving habits and skills than the conventional system of insurance rate determination based on such factors as number of traffic violations, *e.g.*, speeding tickets, *etc.*

[00307] Fig. 40 illustrates a system 4000 for real-time monitoring of a driver to facilitate determination of insurance rate(s) based on various aspects as disclosed infra. System 4000 includes an insurance policy holder, operator 4010, utilizing a mobile device 4005 to associate the operator 4010 with an on-board monitoring system 4025 and a vehicle 4030. By employing wireless communications, the mobile device 4005 is in communication with an insurance provider system 4035 via a transceiver 4040 and a communication component 4045. As vehicle 4030 is being driven by operator 4010 the driver's driving habits, skills, route of travel, activity, *etc.*, can be monitored by the on-board monitoring system 4025 in conjunction with the mobile device 4005. The on-board monitoring system 4025 monitors and gathers information regarding driver 4010's driving skills, habits, *etc.* and forwards the information to the insurance provider 4035. The communication component 4045 can provide communication protocols, data conversion, *etc.*, as necessary, to allow

transmission of data and information between the on-board monitoring system 4025, the mobile device 4005 and the insurance provider system 4035. Data received at the insurance provider system 4035 can be collected by an aggregation component 4048. The aggregation component can compile received data to facilitate processing by the data analysis component 4050. The insurance provider 4035 employs various analytical methods (by utilizing driving analysis component 4050) to facilitate determination of an appropriate insurance rate and any other pertinent information concerning the driving habits of the driver.

[00308] Further, the aggregation component 4048 can obtain data from the various components of system 4000 to assist in the determination of insurance rates. Such components can include the on-board monitoring system 4025, mobile device 4005, the device ID 4006, and/or the vehicle operator 4010 with the obtained data being forwarded to the driving analysis component 4050 and/or the dynamic rate determination component 4055. Data can also be obtained from a database 4060 which stores information pertaining to the vehicle operator 4010, *e.g.*, previous driving history, along with other data as required. Furthermore, the aggregation component 4048 can obtain information as required from the insurance provider as well as any third party entities such as other insurance companies, parents of the vehicle operator, and the like. The aggregation component 4048 gathers information from as many sources as required to facilitate generation and presentation of insurance rate(s). Data gathered by the aggregation component 4048 can also be forwarded from the insurance provider system 4035 to the mobile device 4005, on-board monitoring system 4025, and any other components associated with system 4000 to facilitate presentation of any pertinent data, *e.g.*, insurance rates, to an operator 4010 or other interested party.

[00309] The database 4060 which can be employed to store any information gathered or generated by the various components of system 4000. Such information can include data gathered by the on-board monitoring system 4025, information provided by operator 4010, information retrieved from the mobile device 4005 or information associated therewith, information collected or generated by the various components of the insurance provider system 4035, information provided by third party systems and/or users (not shown), and the like. The database 4060 can be incorporated into the insurance provider system 4035, or reside in a third party system (not shown). It is to be appreciated that a wealth of data and information can be

generated by the various components of system 4000, and database/memory components (not shown) can be distributed as required across the system 4000 to facilitate collection, transmission, generation, evaluation, and determination of a variety of data to facilitate operation of the system.

[00310] The gathering of data by the on-board monitoring system 4025 can be in real-time thereby allowing the driving analysis component 4050 to analyze the received data in real-time/near real-time and, accordingly, a dynamic rate determination component 4055 to dynamically determine an insurance rate(s) based upon the gathered data and data analysis. The determined insurance rate(s) and any other pertinent information can be transmitted to the mobile device 4005 and/or on-board monitoring system 4025 for presentation to the driver. The pertinent information and insurance rate(s) can be presented employing various communication devices incorporated into the mobile device 4005, the on-board monitoring system 4025, or other system (not shown) located in vehicle 4030, where such communication devices include audio presentation, visual display such as a graphical interface, light emitting diode(s), head up display (HUD), or other suitable communication means. By employing such real-time/near real-time gathering, analysis, and rate determination, an insurance premium can be generated that reflects the driver's driving habits more closely than a traditional method such as determining a rate based upon a number of speeding tickets received by a driver in a given time period.

[00311] In an alternative embodiment any feedback information, *e.g.*, determined insurance rate(s) or other pertinent information, can be presented via a remote system such as a personal computer (*e.g.*, connected to the insurance system) (not shown) for viewing by the driver or other interested party. The insurance rate(s) can be calculated in real-time and as such can more accurately reflect appropriate coverage for a driver. A variety of different factors can influence a likelihood of the driver being involved in an accident, having a vehicle stolen, and the like. For example, if the driver is travelling through bad weather, then risk of accident can be higher and an insurance rate can be increased in real-time as weather conditions change – conversely, if there is relatively little traffic surrounding the driver's vehicle, then the rate can be lowered.

[00312] It is to be appreciated that the terms "real-time" and "near real-time" are being utilized to convey the time taken to monitor, gather, transmit, process, present,

etc., any data and information that facilitates determination of an insurance rate and driver feedback. The terms "real-time" and "near real-time" can be interposed to reflect the virtually instantaneous data collection and insurance rate determination in comparison with traditional methods of insurance rate determination and provision of the rate information to a customer via letter, phone, email, *etc.* The traditional methods of letter, phone, email, *etc.* can be employed to present insurance rates and information determined by the methods disclosed herein to the customer at a later time, *e.g.*, upon completion of the journey.

[00313] It is also to be appreciated that while the discussion relates to real time insurance determination in conjunction with an automobile, the innovation is not so limited and can be applied to any system involving a data gathering system employed to acquire information in real time and from the information insurance rates, financial coverage, and the like, can be determined in real time. Examples of other areas of application insurance of other transportation systems including boats, ships, motorbikes, trains, farm machinery, industrial machinery, trucks, and the like. Machinery can also be a suitable application with gathered information being employed to determine if the machinery has been operated in an appropriate manner (*e.g.*, a safe manner) in accordance with the safe operation of the machine, operations manuals, and the like.

[00314] It is to further be appreciated that while the preceding discussion relates to the on-board monitoring system 4025 communicating with the insurance provider 4035 via mobile device 4005, transceiver 4040, and communication component 4045, the disclosed system is not so limited. In an alternative embodiment, the on-board monitoring system 4025 can include a wireless communication system (not shown) facilitating direct communications between the on-board monitoring system 4025 and the insurance provider 4035, via transceiver 4040. Any suitable combination and location of communication means can be employed to facilitate communications between the various system components. Also, it is understood that while not shown, the on-board monitoring system 4025 can include any equipment required to facilitate communication of data, where the equipment can include processor(s), memory, communication components and associated applications and protocols, *etc.*, as necessary. Further, it is to be appreciated that by employing a transceiver 4040 to communicate between the on-board monitoring system 4025 and the insurance provider system 4035, the variety of communication protocols and techniques

employed by the system 4000 can be extended beyond those supported by the mobile device 4005. Such communication techniques can, for example, include wireless, wired, cellular, WiFi, WiMax, WiLAN, satellite, *etc.*

[00315] The mobile device 4005 can be any suitable device that can have information stored thereon or can be associated with information that uniquely identifies an individual. Such devices include mobile phones, cellphones, personal digital assistant (PDA), laptops, portable computer devices, and the like.

[00316] Any suitable device to assist in indentifying a driver can be employed in conjunction with the on-board monitoring system 4025. The suitable device can comprise of, but not limited to, any combination of an interface to locate with the on-board monitoring system 4025, a memory for storing device/user identification, one or more applications employed as part of the monitoring process, a processor to implement the application(s), process any data, store new data, *etc.*, a transceiver to transmit or receive data as required in performing the monitoring process, display/communication device(s) to convey information to the driver, and input device(s) to allow the user to interact with presented information and provide feedback, *e.g.*, such feedback could be acceptance of a new insurance rate or entering of a password for authentication purposes.

[00317] A range of methods and systems can be utilized to allow a driver to be associated with a vehicle. In one embodiment, as shown in FIG. 40, a device ID component 4060 associated with the mobile device 4005 can be employed to identify mobile device 4005 and, accordingly, the owner or user of mobile device 4005. In one embodiment, the device ID component 4060 can be a Subscriber Identity Module (SIM) card in a driver's cell phone and the information stored thereon can be utilized to identify the driver. A SIM card can store a variety of identification information such as an International Mobile Subscriber Identity (IMSI) or an integrated circuit card ID (ICC-ID), for example. Other identifiers for other network and communication systems can be employed to identify a device, such as the International Mobile Equipment Identity (IMEI) number associated with a cell phone. Alternatively, a Willcom-SIM (W-SIM) device or the like could be employed, where the SIM card effectively has its own transceiver located thereon.

[00318] In an alternative embodiment a device employing RFID technology can be employed to allow the on-board monitoring system 4025 to identify a driver. The driver can place the RFID enabled device within transmission range of the on-board

monitoring device 4025, whereupon identification and authentication information can be read from the RFID and employed by the on-board monitoring system 4025 to identify and, if required, authenticate the driver. Such an RFID device can be carried by the driver as a smart-card or as a key-fob, for example. A similar approach can be employed with mobile devices 4005 utilizing other ranged wireless systems such as Bluetooth, IEEE 802.11 (a, b, g, *etc.*), and the like.

[00319] In another embodiment, the driver identification information could be stored on a card incorporating magnetic strip technology whereupon the driver swipes the card through a card reader associated with the onboard monitoring system to facilitate identification and authentication of the driver. Alternatively, information could be stored and represented as a barcode which is presented to a barcode scanner (not shown) associated with the on-board monitoring system 4025 and the information stored in the barcode is read.

[00320] The mobile device 4005 and the on-board monitoring system 4025 can be updated via hardwire *e.g.*, connecting the mobile device 4005 or on-board monitoring system 4025 to a computer *etc.* to install/upgrade software which can be downloaded from the internet. Alternatively, the upgrade can be transmitted to the mobile device 4005 or the on-board monitoring system 4025 by wireless means. As a further alternative, while the on-board monitoring system 4025 is shown as a separate system, the on-board monitoring system 4025 could be incorporated into the mobile device 4005, for example, as a plug-in module.

[00321] It is to be appreciated that the mobile device 4005 employed by the driver as part of the system 4000 can comprise of any combination of components that allow gathering, processing, transmission, presentation, evaluation, determination of insurance rates and any pertinent information, and any components to assist and enable the identification of the driver to the insurance provider system 4035.

[00322] FIG. 41 illustrates a system 4100 for real-time monitoring of a driver to facilitate determination of rate(s) of insurance. System 4100 illustrates communications between an on-board monitoring system 4025 and an external system such as the insurance provider system 4035 being conducted via the mobile device 4005. System 4100 also comprises a GPS 4110 providing location information, an accelerometer 4120, and an on-board diagnostics system 4130 which can provide information regarding how a vehicle is being driven and the current condition of the vehicle. One or more camera's 4140 can be located onboard the vehicle to gather

visual data throughout the vehicle journey. Further, system 4100 includes a context component 4150 providing scheduling information to a user and a buffer 4170 for storing data. Along with information and communication being exchanged between the on-board monitoring system 4025/ mobile device 4005 and the insurance provider 4035, a remote monitoring system 4160 can be employed to interact with the insurance provider system 4035, the on-board monitoring system 4025 and/or the mobile device 4005. The remote monitoring system 4160 can comprise of any device suitable to facilitate presentation of information and means for allowing a user to interact with the information and the various components of systems 4000 and 4100, suitable devices include a personal computer, laptop, personal digital assistant, cell phone, *etc.* The remote monitoring system 4160 can be communicatively coupled to the insurance provider system 4035, with the insurance provider system 4035 forwarding information to the remote monitoring system 4160 as it is received from the on-board monitoring system 4025, the mobile device 4005, or after it has been processed by the insurance provider system 4035. Alternatively, the remote monitoring system 4160 can be in direct communication with the mobile device 4005 and/or the on-board monitoring system 4025 and receives information directly therefrom, and provides feedback and /or instructions thereto.

[00323] The GPS 4110 and the accelerometer 4120 can be located in the mobile device 4005, the on-board monitoring system 4025, or external to, but in communication with the mobile device 4005 and/or the on-board monitoring system 4025. The GPS 4110 provides information regarding the location of the respective device to which it is communicatively coupled. The GPS 4110 could be located in the mobile device 4005 thereby allowing the location of the user (*e.g.*, a driver) of mobile device 4005 to be determined when the mobile device 4005 is local to the user, and accordingly, when the mobile device 4005 is associated with the on-board monitoring system 4025 the location of vehicle 4030 (not shown) to be determined. For example, in a situation where someone drives a vehicle belonging to someone else, *e.g.*, a child drives a vehicle belonging to their parent the parent can employ the GPS 4110 either via the mobile device 4005 or in conjunction with the on-board monitoring system 4025 to keep track of the location of their child as the child conducts their journey. Location information can be forwarded to the insurance provider system 4035 for processing as part of an insurance rate determination, and also presented to the parent, via the remote monitoring system 4160. The GPS 4110 can provide feedback

regarding the current location of the driver, which can be employed to monitor the past/present/future location of a driver. Continuing with the example above, the location of the child can be monitored by a parent, via the remote monitoring system 4160, to ensure they are going where they said they were going, the neighborhood currently being driven through, *etc.* Information provided by the GPS 4110 can be processed and employed to assist in directing a driver to go via a safer route, avoid congestion, *etc.* The information provided by the GPS 4110 can be presented to a remote user via the remote monitoring system 4160, and instructions can be entered into the remote monitoring system 4160 by a remote user and provided to the driver via the mobile device 4005, on-board monitoring system 4025, or other suitable device available to the driver and/or installed in the vehicle.

[00324] Accelerometer 4120 can be employed to monitor the rate of acceleration/deceleration of the vehicle being driven, with the captured data being employed by the insurance provider system 4035 as part of a determination of insurance rate. Alerts can be generated if a driver is/has been driving in a dangerous manner, *e.g.*, accelerating or braking excessively, and presented to a person monitoring the driver via the monitoring system 4160. For example, if a child is overly accelerating a parent's vehicle, the parent can be informed via the remote monitoring system 4160, of the child's driving style and appropriate action taken, such as calling the child to tell them to not accelerate excessively. Alternatively, the parent can be informed that the child is speeding or that they are going through a "bad" neighborhood and corrective action is required.

[00325] The on-board monitoring system 4025 can be associated with, and obtain information from, an on-board data system 4130. The on-board data system 4130 can include an engine control unit/module (ECU/ECM) located on vehicle 4030 (see FIG. 40) that monitors various sensors located throughout the engine, fuel, and exhaust systems to control various aspects of the vehicles internal combustion engine operation. The on-board data system 4130 can also include a transmission control unit (TCU), powertrain control module (PCM, which can be a combined ECU/TCU), and other control units/on board diagnostic systems located in an automobile monitoring sensors associated with the transmission system, braking system, windows, doors, windscreen wipers, climate control, *etc.*, and information obtained there from can allow the on-board monitoring system 4025 to build an accurate picture of how the vehicle is being operated. In one example, the on-board

monitoring system 4025 can retrieve information from the on-board data system 4130 regarding whether the driver and any other occupants of the vehicle are wearing their seatbelts, and if seatbelts are not worn appropriate feedback can be provided indicating a reduction in insurance premium if the seatbelts were worn. The on-board monitoring system 4025 can be hardwired to the on-board data system 4130 via, in the context of one example, an on-board diagnostics (OBD) connector (*e.g.*, an OBD-II connector) or similar connector/device. Alternatively, the on-board monitoring system 4025 can be coupled to the on-board data system 4130 using wireless technologies, such as Bluetooth, IEEE 802.11 (a, b, g, *etc.*), for example.

[00326] Further, the on-board data system 4130 can obtain information regarding the condition of the vehicle 4030. In one example, if tire pressure is low, an inference can be made that there is a higher likelihood of an accident and thus the insurance rate should be increased.

[00327] One or more video cameras 4140 can be located on a vehicle 4030 to record visual information. In an embodiment comprising of a single camera 4140 the camera could be placed in the vehicle 4030 to be forward facing to the direction of travel and captures visual information regarding the journey. Alternatively, a plurality of cameras 4140 can be located on the vehicle 4030 allowing video to be acquired from a variety of viewpoints from the vehicle 4030, *e.g.*, a second camera can be recording information in a rearward viewpoint gathering information for use in accident analysis such as when the vehicle is reversing or has been involved in an accident, *e.g.*, rear-ended. The visual data acquired by the camera can be streamed to the insurance provider system 4035 via the on-board monitoring system 4025 and/or mobile device 4005 for data analysis. Alternatively the acquired visual data can be stored local to the vehicle 4030, before sending to the insurance provider system 4035, in memory (*e.g.*, buffer 4170) associated with the on-board monitoring system 4025 and/or in memory (not shown) located with the video camera 4140. Memory can be programmed to retain a specific amount of data, *e.g.*, the last X minutes, or until the memory capacity is exceeded, whereupon the first stored video is replaced by most recently acquired video. The acquired video data can be used for a variety of purposes regarding collection of contextual data and/or analysis. Examples of such purposes include the video stream can be analyzed to assist in the determination of the current weather conditions (*e.g.*, it is snowing, windscreen wipers are operating, *etc.*),

during post-collision review the gathered video can be reviewed to determine cause of collision, blame, *etc.*, and the like.

[00328] A context component 4150 can also comprise part of the mobile device 4005 and/or the on-board monitoring system 4025, and interacts with other applications (not shown) such as a calendar application operating on the mobile device 4005. The context component 4150 can review the calendar entries and prompt the driver of an upcoming trip, *e.g.*, to an airport. The context component 4150, in conjunction with a trip planner/geographic location application 4180, can determine the amount of time required to complete the journey and prompt the driver sufficiently ahead of commencing the journey to allow the driver to make the trip in a safe manner.

[00329] A memory buffer 4170 can also be utilized by the on-board monitoring system 4025 and/or the mobile device 4005. Owing to the possibility of lost wireless communications during a journey there may be occasions where the on-board monitoring system 4025 and/or mobile device 4005 are not able to communicate with the insurance provider system 4035. During such occasions, which can be of indeterminate duration, any data gathered by the on-board monitoring system 4025 or the mobile device 4005 can be temporarily stored in the buffer 4170. Upon re-establishment of communications between the insurance provider system 4035, the on-board monitoring system 4025 and/or the mobile device 4005, the data stored in the buffer can be downloaded to the insurance provider system 4035 for analysis and insurance rate determination. Employing the buffer 4170 allows data to be gathered and stored even though communications cannot be conducted between the various components of the real time data gathering system. Conversely, the insurance provider system 4035 can also include a buffer (not shown) which can be employed to store information generated by the various components of the insurance provider system 4035 during the communications outage and, upon re-establishment of communications, the information generated by the insurance provider system 4035 can be forwarded to the on-board monitoring system 4025 and/or the mobile device 4005. The buffer on the insurance provider system 4035 can also be employed to store data to be transmitted to the remote monitoring system 4160 in the event of communication outage therebetween, *e.g.*, a network failure.

[00330] Further, the on-board monitoring system 4025 or the mobile device 4005 can include one or more local applications 4180 to facilitate monitoring, processing,

and generation of data for insurance purposes. The local applications 4180 can be substantially similar to any of the applications operating in the various components that comprise systems 4000, 4100, and 4200. By having the one or more applications 4180 functioning local to the vehicle 4030, insurance rate information and feedback can be presented to a driver which can be beneficial when communications between the various components that comprise systems 4000, 4100, and 4200 are unavailable. Also, the local applications 4180 can be employed to control what data is stored in the buffer 4170. To prevent data overflow of the buffer 4170, the local applications 4180 can process the data as it is gathered thereby allowing the processed data to be stored as opposed to the raw data, where it is envisioned that the processed data occupies less memory than the raw data.

[00331] A particular application 4180 could be a digital road map which in conjunction with the GPS 4110 and the on-board data system 4130 can be used to assist in the determination of whether a vehicle is speeding. The position of a vehicle can be ascertained by the GPS 4110 and in accordance with the digital road map the speed restrictions of the road being navigated can be determined. By comparing the designated speed limit of the road in comparison with the speed of the vehicle (*e.g.*, obtained from the on-board data system 4130) a real time determination can be made regarding the velocity of the vehicle and whether it is breaking the posted speed limit, with an according effect on insurance rate. Alternatively, a digital road map (not shown) can be stored at the insurance provider system 4035 and data provided by the GPS 4110 can be analyzed by the insurance provider system 4035, vehicle velocity determined and the insurance rate affected accordingly.

[00332] Turning to Fig. 42, system 4200 comprises a mobile device 4005 and on-board monitoring system 4025 in communication with an insurance provider system 4035. The on-board monitoring system 4025 further comprises a vehicle control component 4210 which can be employed to ensure the vehicle is being operated in a safe manner. The insurance provider system 4035 further comprises an identification component 4220, an authentication component 4230, an evaluation/authorization component 4240, along with a storage device 4250 containing driver account information database(s) to identify a driver and control their operation of a vehicle as required. Further, system 4200 can include a third party system 4260 which includes account information database 4270.

[00333] During start up of the on-board monitoring system 4025, which can include associating the mobile device 4005 with the on-board monitoring system 4025, various methods can be employed to identify and authenticate the user associated with mobile device 4005. In one embodiment, user identification information can be retrieved from the mobile device 4005 and forwarded to the identification component 4220. Such user identification information can comprise of an IMSI number retrieved from a SIM (not shown) located on the mobile device 4005, *e.g.*, in device ID 4060. The identification component 4220 can access storage device 4250, retrieve any user account information contained therein that is associated with the IMSI number, and, using the retrieved information, identify the user associated with the mobile device 4005 and accordingly the prospective driver of vehicle 4030 (ref. FIG. 40).

[00334] To enable the correlation of a unique identifier (*e.g.*, IMSI number) to identify an individual, associated with mobile device 4005 and driver data stored in database 4250 some form of registration process may have previously been performed. The registration process, for example, can involve a driver informing their insurance provider of the IMSI number associated with their personal cell phone (mobile device 4005), along with any other pertinent information such as address of the driver, social security number, insurance policy number, *etc.* The respective account information can be stored in the database 4250 and retrieved during the initialization of the on-board monitoring system 4025, such as when the mobile device 4005 is being communicatively associated with the on-board monitoring system 4025.

[00335] Alternatively, the identification component 4220 can be incorporated into the on-board monitoring system 4025 to provision user identification (not shown). Including the identification component in the on-board monitoring system 4025 allows the identification process to be conducted local to the vehicle where the on-board monitoring system 4025 identifies the driver and then conducts authentication, evaluation and authorization in conjunction with the insurance provider system 4035, as described supra. In an alternative embodiment, the identification, authentication, evaluation and authorization processes, as described supra, could be performed by various components located on the on-board monitoring system 4025.

[00336] In an alternative embodiment, the driver information can be stored locally on the on-board monitoring system 4025 and during association of mobile device

4005 with the on-board monitoring system 4025 the on-board monitoring system 4025 confirms the identity of the driver and informs the insurance provider system 4035 that driver having identity X is about to operate the vehicle associated with the on-board monitoring system 4025. For example, the mobile device 4005 could include a connector (not shown), the connector is inserted into a receptacle (not shown) located on the on-board monitoring system. The connector can comprise of a unique arrangement of connectors (*e.g.*, copper strips) which can be used to uniquely identify the mobile device 4005 and the driver associated therewith. Alternatively, the on-board monitoring system 4025 can include a bar-code reader or magnetic strip reader, and when a card employing the appropriate technology is swiped through the reader the driver is identified. In an alternative embodiment, the on-board monitoring device 4025 can include a bio-metric device that allows a driver to be identified by their voice signature, iris-scan, fingerprint, or other bio-metric method suitable to identify the driver.

[00337] In another embodiment the driver identification information can be compared with identification information stored in a database 4270 of a third party system 4260 associated with the mobile device 4005, *e.g.*, a cell phone service provider database, and the driver information is compared with a list(s) of phone customers/subscribers or other pertinent information stored by the cell phone system provider. Alternatively, the third party system 4260 and database 4270 can be any suitable information provider which can be used to identify a driver.

[00338] To ensure the identity of the driver an authentication process can be performed. In one embodiment this may involve an authentication process of comparing shared digital key information between a digital key stored on the mobile device 4005 with a digital key stored in the on-board monitoring system 4025. Alternatively, a digital key stored on the mobile device 4005 can be compared with a second digital key stored in a database 4250 associated with the insurance system or, alternatively, a database 4270 associated with the service provider of the mobile device 4005, *e.g.*, in the case where the mobile device 4005 is a cell phone, the second digital key could be provided by the cell phone service provider. The digital keys can be part of a symmetric shared key system (public key) or the digital keys can be part of an asymmetric shared key system (public-private keys). In an alternative embodiment the driver may have to enter authentication information, *e.g.*, type a password, say a password, *etc.*, on an input device associated with the on-board

monitoring system 4025, where such an input device could be the mobile device 4005 keypad/touchscreen or a keypad/touchscreen attached to the on-board monitoring system 4025. The authentication process can be performed by an authentication component 4230 located at the insurance provider, *e.g.*, the authentication component 4230 compares the private key employed by a mobile device 4005 and a public key stored for the user of mobile device 4005 in the account information database 4250. Alternatively, an authentication component (not shown) can be located in the on-board monitoring system 4025, in the mobile device 4005, or other suitable location within the system to provision user authentication. Authentication can be in any form including digital key comparison, password entry, bio-metric data, *etc.*

[00339] At any time during or after the identification and authentication processes (as required) are being performed, the status of the driver can be evaluated and their ability to drive the vehicle authorized. The evaluation and authorization process can be performed by the evaluation/authorization component 4240 located in the insurance provider system 4035. Such an evaluation can include generating evaluation queries such as "Is the driver deemed safe to drive the vehicle?", "Is the driver deemed safe to drive the other passengers in the vehicle?", "Is the driver authorized to drive the vehicle?". A particular evaluation query could be determining whether a particular driver is authorized to drive a vehicle in a company fleet, and more particularly, whether the driver is authorized to drive a particular vehicle from the fleet of company vehicles? Another query could be to determine whether a driver is allowed to drive with a particular passenger in the vehicle, *e.g.*, parents do not want their child in a vehicle being driven by a driver whom they deem to be a dangerous driver. Another example could be to evaluate whether the driver has sufficient insurance to drive a particular vehicle, where, in the event that they do not have sufficient coverage, the driver is informed that they must obtain suitable insurance coverage to drive the vehicle.

[00340] In response to a negative evaluation being returned by the evaluation/authorization component 4240, to prevent the vehicle being driven by a negatively evaluated driver, a vehicle control component 4210 can be employed to immobilize the vehicle associated with the on-board monitoring system 4025. Also, the prospective driver can be informed of their negative evaluation status with the status information being conveyed to them via an output device (not shown) located on their mobile device 4005, the on-board monitoring system 4025, or other suitable

means available to the user and/or installed in the vehicle. In one embodiment, the vehicle control component 4210 can be in communication with the vehicle ECU (not shown) and forwards signals/data/information to the ECU instructing the ECU to prevent operation of the vehicle engine. For example, the ECU controls the ignition circuit preventing ignition, or the signal received by the ECU when the automatic gearshift is in park could be overridden by the vehicle control component 4210 thereby preventing the associated circuitry from allowing ignition of the engine to occur, *etc.*

[00341] In another embodiment a device (not shown) can be installed in a vehicle to measure the blood alcohol content (BAC) of a driver, such a device can be a breathalyzer or other ignition interlock device, for example. Each time a driver wishes to drive the vehicle they have to pass a BAC test administered by the device. The on-board monitoring system 4025 in conjunction with the evaluation/authorization component 4240 can be communicatively associated with a breathalyzer and monitor how often a driver fails the breath test with gathered data being utilized by components of the insurance provider system 4035 (*e.g.*, the dynamic rate determination component 4055) as part of the insurance rate determination process. In another aspect the vehicle control component 4210 in conjunction with the vehicle ECU, in response to a BAC being too high, could immobilize the vehicle.

[00342] After the driver has been identified, with any authentication and evaluation as appropriate being performed, the driver can proceed to drive the vehicle and monitoring of their driving is conducted.

[00343] The on-board monitoring system 4025 can also be part of a wider ranging system that includes positional feedback to the vehicle and allowed actions based thereon. For example, the position of the vehicle can be determined using the GPS 4110 (see FIG. 41) which can be entered into a "mesh" system where the "mesh" comprises other vehicles, information of the various roads, streets, highways, *etc.*, in terms of speed limits, *etc.*, as well as the operation of any traffic signals. If a traffic signal is on red and the junction has a "No Right Turn On Red" limitation, if the driver attempts to make the right turn while the light is on red, an interface associated with the on-board monitoring system 4025 can inform the driver that they are attempting to make an illegal turn, with the vehicle control component 4210 being employed to apply the brakes to the vehicle so preventing the driver from making the

prohibited turn. By employing the on-board monitoring system 4025 and the vehicle control component 4210 in such a manner the likelihood of a driver making an erroneous/potentially dangerous maneuver can be reduced thereby reducing the likelihood of an accident and accordingly minimizing insurance premiums.

[00344] The on-board monitoring system 4025, the GPS 4110 and the vehicle control component 4210 can be employed to control the speed of the vehicle. An on-board digital map (not shown) could be included in the on-board monitoring system 4025, which in conjunction with the location of the vehicle being pinpointed by GPS 4110 the speed limit restriction of the road being navigated can be determined and the speed of the vehicle controlled accordingly by the vehicle control component 4210 to comply with the speed limit. Alternatively, the vehicle control component 4210 can be disabled, but the speed of the vehicle versus the posted speed limit can analyzed to determine whether the driver is speeding and insurance rates can be dynamically generated.

[00345] The on-board monitoring system 4025 can receive input from "intelligent" road signs. The intelligent road signs could transmit the speed limit which they have been placed to enforce. The on-board monitoring system 4025 can receive speed limit data transmitted from the intelligent road sign and, if the vehicle is determined to be speeding, the driver can be informed of the fact that they are speeding, the resulting effect on their insurance premium, and/or the vehicle control component 4210 can be employed to reduce the speed of the vehicle to the respective speed limit by, for example, reducing the engine revolutions per minute, dropping a gear, applying the brakes, *etc.* By employing the real-time monitoring system the driver/vehicle can be incorporated into a mesh network of other drivers to allow awareness of other drivers and conditions, *e.g.*, indication of how fast an oncoming vehicle is approaching, whether the vehicle is in the drivers blind spot, *etc.*

[00346] Information associated with the GPS 4110 in association with the "mesh" system can be employed to assist other drivers. For example, if a vehicle has stopped or is driving below the speed limit the driver can be prompted to indicate what might be the reason for their slow/impeded progress. Via an interface associated with the on-board monitoring system 4025, or the mobile device 4005, the user can respond by selecting the appropriate reason from a list of reasons, *e.g.*, "stuck in traffic jam". Such feedback can be gathered and any other drivers who might be heading in the

direction of the traffic jam can be prompted about the traffic jam, and if required, find an alternative route.

[00347] The on-board monitoring system 4025 can also be employed to assist with reconstruction of accidents. By reviewing the data gathered by real-time data gathering system 4000 it is possible to determine how the vehicle was being driven prior to an accident. Data can be retrieved from the on-board monitoring system 4025, buffer 4170 or from the insurance provider system 4035 and analyzed. The analysis can assist in determining who was at fault in the accident, whether a vehicle was speeding, cell phone usage, had the driver made a prohibited turn?, *etc.* Such data analysis could greatly enhance the insurance accident investigation allowing the insurance claims assessor to expeditiously assess the accident, make insurance payouts and any claims associated with the accident, forward information that might be of use to the law and legal professions, *etc.* The savings realized by the insurance company could be employed to offset the costs of implementing the real time monitoring system 4000 to the insurance customer.

[00348] A common complaint from owners of multiple vehicles is that they are paying to insure all the vehicles they own and yet they can only drive one vehicle at any given time. By monitoring vehicle usage of driver in real-time a proportional insurance rate system can be implemented based upon which vehicle(s) they drove in a given time period. For example, a person owns a sports car and a family van. Typically, a sports car has a higher insurance rate than a family van, but the owner drives the family van on weekdays and the sports car on weekends. Employing a ratio based system to determine the insurance premium could result in a 5:2 ratio of family van usage versus sports car usage, however this system is effectively based on the vehicle owner accurately indentifying when they use the respective vehicles. Alternatively, with the subject invention, the insurance coverage can be adjusted in real-time depending upon which vehicle is being driven, where it is being driven, applying insurance rates for city, highway, unsafe neighborhood, *etc.*, all being applied in real-time. By monitoring actual usage of each vehicle, an insurance premium that more accurately reflects the vehicle usage can be generated. Also, insurance rates can be based on vehicle usage, if a vehicle sits idle for an extended period the coverage could be adjusted to reflect that. For example, a vehicle sits in a garage during the winter months, only fire and theft insurance coverage need be paid during that time period.

[00349] Another concern is the attention of a driver while driving a vehicle. Usage of a mobile device 4005 can be a major source of distraction for a driver, with accounts being commonplace of accidents resulting from the driver not paying attention to the road while using mobile device 4005 (for example, texting/talking on a cell phone, entering information into a PDA, laptop, or the like). In one embodiment, where the mobile device 4005 is a cell phone, by monitoring real-time usage of the cell phone while driving, a knowledge base can built on the driver's attention during driving and appropriate insurance rate determined and charged. For example, limited or no cell phone usage during driving has a lower insurance premium than a driver who frequently talks on a cell phone while driving. A log of cell phone usage can be compiled at the on-board monitoring system 4025 and/or at the insurance provider system 4035.

[00350] It is to be appreciated that while systems 4000, 4100 and 4200, present the on-board monitoring system 4025 and mobile device 4005 interacting with a single insurance provider system 4035, the proposed embodiments are not so limited. It is envisioned that information gathered by the on-board monitoring system 4025 in conjunction with the mobile device 4005 can be shared amongst a plurality of insurance provider systems 4035. Such an approach allows the plurality of insurance providers to analyze the gathered information, determine an insurance rate(s) based upon the gathered information and present the determined rates to the driver to which the gathered information pertains thereby allowing the driver to select one insurance provider over another based upon the particulars of the insurance prospectus and quotes. The insurance provider can present their insurance prospectus and quotes to the driver in real-time by employing a display device associated with mobile device 4005 or the on-board monitoring system 4025. Such a real-time system can allow a driver to use more than one insurance firm throughout the course of a journey. For example, if the driver is partaking in a transcontinental journey they can take advantage of rates offered by a plurality of insurance companies during the journey, while driving through the U.S. Mid-West the driver could use insurance from company X, and while driving in the Central U.S. company Y may offer better insurance rates. The on-board monitoring system 4025 can include an intelligent insurance selection component (not shown) which can review the insurance rates being offered by a plurality of insurance companies and automatically select, in real-time, the best insurance plan. Selection can be based on any factors that determine

insurance coverage costs including driving habits, vehicle being driven, location, driver, *etc.* Further, an insurance company can send information to the user for review at a later date either by traditional means such as by regular mail or electronically for presentation by the remote monitoring system 4160.

[00351] The driver can agree to having all or part of the information gathered by the real-time insurance systems 4000, 4100, and 4200, be passed on to third party vendors. By agreeing to the dissemination of their information a corresponding reduction in their insurance rates can be realized or other benefit could be conferred to the driver. For example, the travel destination(s) and route(s) therebetween can be forwarded to an advertising/marketing company which can forward information regarding businesses in the vicinity of the destination(s) and route(s) to the driver, where, for example, such a business could be a restaurant located at or near the destination.

[00352] The various aspects (*e.g.*, in connection with insurance) can employ various machine learning and reasoning techniques (*e.g.*, Artificial Intelligence based schemes, rules based schemes, and so forth) for carrying out various aspects thereof. For example, a process for determining a reduction (or increase) in insurance premiums can be facilitated through an automatic classifier system and process. The identification component 4220, the authentication component 4230, and the evaluation/authorization component 4240 can, either individually or in combination, employ artificial intelligence (AI) techniques as part of the process of identifying and authorizing a driver of a vehicle. The on-board monitoring system 4025 can use AI to infer such information as proposed route, real-time selection of insurance coverage, driving habits of the driver, operating condition of a vehicle, *etc.*

[00353] A classifier is a function that maps an input attribute vector, x = (x1, x2, x3, x4, xn), to a confidence that the input belongs to a class, that is, f(x) = confidence(class). Such classification can employ a probabilistic and/or statistical-based analysis (*e.g.*, factoring into the analysis utilities and costs) to prognose or infer an action that a user desires to be automatically performed.

[00354] A support vector machine (SVM) is an example of a classifier that can be employed. The SVM operates by finding a hypersurface in the space of possible inputs, which hypersurface attempts to split the triggering criteria from the non-triggering events. Intuitively, this makes the classification correct for testing data that is near, but not identical to training data. Other directed and undirected model

classification approaches include, *e.g.*, naïve Bayes, Bayesian networks, decision trees, neural networks, fuzzy logic models, and probabilistic classification models providing different patterns of independence can be employed. Classification as used herein also is inclusive of statistical regression that is utilized to develop models of priority.

[00355] As will be readily appreciated from the subject specification, the one or more aspects can employ classifiers that are explicitly trained (*e.g.*, through a generic training data) as well as implicitly trained (*e.g.*, by observing user behavior, receiving extrinsic information). For example, SVM's are configured through a learning or training phase within a classifier constructor and feature selection module. Thus, the classifier(s) can be used to automatically learn and perform a number of functions, including but not limited to determining according to a predetermined criteria when to grant access, which stored procedure to execute, *etc.* The criteria can include, but is not limited to, the amount of data or resources to access through a call, the type of data, the importance of the data, *etc.*

[00356] In accordance with an alternate aspect, an implementation scheme (*e.g.*, rule) can be applied to control and/or regulate insurance premiums, real time monitoring, and associated aspects. It will be appreciated that the rules-based implementation can automatically and/or dynamically gather and process information based upon a predefined criterion.

[00357] By way of example, a user can establish a rule that can require a trustworthy flag and/or certificate to allow automatic monitoring of information in certain situations whereas, other resources in accordance with some aspects may not require such security credentials. It is to be appreciated that any preference can be facilitated through pre-defined or pre-programmed in the form of a rule. It is to be appreciated that the rules-based logic described can be employed in addition to or in place of the artificial intelligence based components described.

[00358] Fig. 43, presents an example methodology 4300 for the installation of a real-time insurance system. At 4302 an on-board monitoring system is installed in a vehicle to facilitate the collection of real-time data from the vehicle and forwarding of the real-time data to an insurance provider. At 4304 the on-board monitoring system can be associated with the on-board data/diagnostic control units and system(s) incorporated into the vehicle. The on-board data/diagnostic control units and system(s) can include the vehicles engine control unit/module (ECU/ECM),

transmission control unit (TCU), powertrain control unit (PCU), on-board diagnostics (OBD), sensors and processors associated with the transmission system, and other aspects of the vehicle allowing the on-board monitoring system to gather sufficient data from the vehicle for a determination of how the vehicle is being driven to be made. The on-board monitoring system can be communicatively coupled by hard wiring to the on-board diagnostic system(s) or the systems can be communicatively associated using wireless technologies.

[00359] At 4306 a mobile device, *e.g.*, a cell phone, can be associated with the on-board monitoring system where the mobile device can facilitate communication between the on-board monitoring system with a remote insurance provider system. The mobile device provides identification information to the on-board monitoring system to be processed by the on-board monitoring system or forwarded an insurance provider system to enable identification of the driver.

[00360] At 4308 communications are established between the on-board monitoring system and the mobile device with the remote insurance provider system. In one embodiment it is envisaged that the on-board monitoring system and the insurance provider system are owned and operated by the same insurance company. However, the system could be less restricted whereby the insurance provider system is accessible by a plurality of insurance companies with the operator of the on-board monitoring system, *e.g.*, the driver of the vehicle to which the on-board monitoring system is attached, choosing from the plurality of insurance providers available for their particular base coverage. In such an embodiment, upon startup of the system the insurance provider system can default to the insurance company providing the base coverage and the operator can select from other insurance companies as they require.

[00361] Over time, as usage of the on-board monitoring system continues, at 4310, there is a likelihood that various aspects of the system might need to be updated or replaced, *e.g.*, software update, hardware updates, *etc.*, where the updates might be required for an individual insurance company system or to allow the on-board monitoring system to function with one or more other insurance company systems. Hardware updates may involve replacement of a piece of hardware with another, while software updates can be conducted by connecting the mobile device and/or the on-board monitoring system to the internet and downloading the software from a company website hosted thereon. Alternatively, the software upgrade can be transmitted to the mobile device or the on-board monitoring system by wireless

means. As a further alternative the updates can be conferred to the mobile device or the on-board monitoring system by means of a plug-in module or the like, which can be left attached to the respective device or the software can be downloaded there from.

[00362] Turning to Fig. 44, an example methodology 4400 is shown for initializing on-board monitoring for a real-time insurance system and authenticating/authorizing a driver. At 4402 mobile device, *e.g.*, a cell phone, is associated with an on-board monitoring system. It is to be appreciated that even while the method relates to the mobile device being a cell phone any device that facilitates storing, processing, and communication of information to allow a driver to be identified can be employed by the method.

[00363] At 4404 information is retrieved from the mobile device to allow identification of the driver. The information can be retrieved by an on-board monitoring system and compared with driver information stored therein. In an alternative embodiment the information can be transmitted to an external system where the identification information is compared with driver information stored therein. For example, the information could be forwarded to a system associated with an insurance company and compared with a list of registered/known drivers. In an alternative embodiment the identification information could be forwarded to a database associated with the cell phone system provider and compared with the list of subscribers or similar information stored therein.

[00364] At 4406, as required, the driver can be authenticated to confirm the identity of the driver. In one embodiment this may involve an authentication process of comparing shared digital key information between a digital key on the cell phone with a digital key stored in the on-board monitoring system. Alternatively a cell phone digital key can be compared with a key stored in a database associated with the insurance system or, alternatively, a database associated with the cell phone service provider. In an alternative embodiment the driver may have to enter authentication information, *e.g.*, a password, on an input device associated with the on-board monitoring system, where such an input device could be the cell phone keypad/touchscreen or a keypad/touchscreen attached to the on-board monitoring system.

[00365] At 4408, as required, the status of the driver can be evaluated through the use of a query/evaluation process. The query can be of any grammatical form to

generate a suitable response thereto. Such a query could be one of the following or the like…"Is the driver deemed safe to drive the vehicle?", "Is the driver deemed safe to drive the other passengers?", "Is the driver authorized to drive the vehicle?", "Is the driver authorized to drive that particular vehicle from the fleet of company vehicles?" At 4410, in response to negative feedback to the query/evaluation of the driver, the vehicle can be immobilized to prevent usage of the vehicle by the negatively evaluated driver. At 4412 the driver can be informed that they are not allowed to drive the vehicle, where the information is forwarded by any suitable means. For example, the driver can be informed by a message displayed on the cell phone, via a display component associated with the on-board monitoring system, or a remote device suitable to display the evaluation information. At 4414, in response to a favorable outcome to the "OK to drive vehicle?" of 4408, a favorably evaluated driver is allowed to drive the vehicle.

[00366] Fig. 45, illustrates an example methodology 4500 for gathering information from an on-board monitoring system employed in a real-time insurance system. At 4502, monitoring of the driver and the vehicle they are operating is commenced. Monitoring can employ components of an on-board monitoring system, mobile device components, *e.g.*, cell phone system, or any other system components associated with monitoring the vehicle as it is being driven. Such components can include a global positioning system (GPS) to determine the location of the vehicle at any given time, such a GPS can be located in a cell phone, as part of the on-board monitoring system, or an external system coupled to the monitoring system/cell phone - such an external system being an OEM or after sales GPS associated with the vehicle to be/being driven. A video data stream can be gathered from a video camera coupled to the on-board monitoring system recording the road conditions, *etc.* throughout the journey. Information can also be gathered from monitoring/control system(s) that are integral to the vehicle, *e.g.*, the vehicle's engine control unit/module (ECU/ECM) that monitors various sensors located throughout the engine, fuel and exhaust systems, *etc.*

[00367] At 4504, the dynamically gathered data is transmitted to an insurance evaluation system. At 4506, the gathered data is analyzed. Such analysis can involve identifying the route taken by the driver, the speed driven, time of day the journey was undertaken, weather conditions during the journey, other road traffic, did the user use their cell phone during the journey?, and the like. At 4508, the gathered data is

assessed from which an insurance rate(s) can be determined. For example, if the driver drove above the speed limit then an appropriate determination could be to increase the insurance premium. At 4510, the driver can be informed of the newly determined insurance rate. Any suitable device can be employed such as informing the user by cell phone, a display device associated with the on-board monitoring system, or another device associated with the vehicle. The information can be conveyed in a variety of ways, including a text message, a verbal message, graphical presentation, change of light emitting diodes (LED's) on a display unit, a HUD, *etc.*

[00368] At 4512, the driver can continue to drive the vehicle whereby the method can return to 4502 where the data gathering is commenced once more. Alternatively, at 4512, the driver may complete their journey and data gathering and analysis is completed. At 4514 the driver can be presented with new insurance rates based upon the data gathered while they were driving the vehicle. The new insurance rates can be delivered and presented to the driver by any suitable means, for example the new insurance rates and any pertinent information can be forwarded and presented to the driver via a HUD employed as part of the real time data gathering system. By employing a HUD instantaneous notifications regarding a change in the driver's insurance policy can be presented while mitigating driver distractions (*e.g.*, line of sight remains substantially unchanged). Alternatively, the on-board monitoring system can be used, or a remote computer/presentation device coupled to the real time data gathering system where the information is forwarded to the driver via, *e.g.*, email. In another embodiment, the driver can access a website, hosted by a respective insurance company, where the driver can view their respective rates/gathered information/analysis system, *etc.* Further, traditional means of communication such as a letter can be used to forward the insurance information to the driver.

[00369] Fig. 46 illustrates an example methodology 4600 for determining insurance rates based upon vehicle usage. At 4602, vehicle usage information is obtained for a driver. In one example scenario the driver owns a plurality of vehicles and wants to have their insurance rates to be based upon the how much they drive each respective vehicle. Traditionally an owner who owns a number of vehicles has to pay a substantially higher insurance premium than someone who only owns a single vehicle. However, the multiple vehicle owner feels aggrieved that they are paying a seemingly disproportionate amount. By employing the real time insurance system it is possible to gather information based upon when the driver was driving

each particular vehicle and determine an insurance rate based thereon. At 4604, the usage for each vehicle is assessed and, accordingly, at 4606, based upon the assessed usage an insurance rate for the multiple vehicles can be determined. For example, it is determines that the driver only drives the vehicle (vehicle A) with the highest insurance premium approx 10% of the time, while the vehicle (vehicle B) with the lower insurance premium is driven the remaining 90%. Based on such information an insurance rate can be determined comprising of 0.1(vehicle A insurance premium) + 0.9(vehicle B insurance premium). At 4608, the determined insurance premium based upon actual vehicle usage is forwarded to the driver/owner of the vehicles.

[00370] In another embodiment of methodology 4600 the vehicle usage at 4602 can indicate how much a particular vehicle is driven and for how long it is in a garage. For example, in the Great Lakes region of the continental USA an owner of a vintage vehicle may choose to place the vehicle in storage during the winter months and hence only wants to have insurance to cover when the vehicle is being driven in the summer.

[00371] Vertical insurance market specialization is provided where policies can be created based on granular information related to actual usage of an object. The information can be received in real time or near real time, and specific market definitions can be created based on the information. Insurance companies can bid on specific market definitions, and an owner of the object can select coverage. In cases of automobile insurance, route information or other sensed parameters (such as driving behavior) can be provided to define an insurance market for a specific driver. Allowing companies to bid on the specific instances allows for increased competition and lower cost than current blanket solutions.

[00372] Systems and methods that customize insurance rates in real time to correspond to unique behavior/character traits of a user/driver. A rate adjustment component can interact with insurance companies that provide bids based on the contextual data - wherein, insurance costs can be dynamically adjusted, and the user/driver switched in real-time between such insurance companies (*e.g.*, based on bids), to ensure obtaining optimum rates. A switching component can switch user/driver) to an insurance company that bids the best rate. Hence, during a trip the user/driver can actually be insured by various suppliers during different segments of such trip.

[00373] Real-time insurance rates can be generated and presented to a driver – as the rate changes, the change can be shown through an interface. Different factors can be evaluated and based upon a result of the evaluation, the rate can be determined. The determination can be performed locally at a vehicle as well as by an insurance company. A bidding process can be used where different insurance companies supply rates and a user or automated process selects the rate for use – the selected rate is conveyed upon the interface.

[00374] An on-board monitoring system in conjunction with a mobile device can be employed to gather real-time information regarding how a vehicle is being operated by the owner of the mobile device. The mobile device has information stored thereon that allows the user to be identified by the on-board monitoring system. The real-time information is forwarded to a remote insurance provider system that, based upon the gathered real-time information, determines an insurance rate. The determined insurance rate can be transmitted to the owner allowing them to see how their driving style is affecting their insurance rate and can adjust their driving style accordingly.

[00375] Referring to the drawings, **FIG. 47** is a high-level representation of a system 4700 that promotes adoption of real-time or nearly real-time insurance benefit(s) in accordance with aspects of the subject disclosure. As indicated supra, the real-time or nearly real-time insurance benefit(s) includes insurance for vehicle 4710; however, the real-time benefit(s) can include other benefits, such as health insurance, life insurance, or the like, related to operator(s) or occupant(s) of vehicle 4710. Such real-time or nearly real-time insurance benefit(s) are provided (e.g., offered, marketed, issued, administered, or effected) by service provider platform 4720.

[00376] To promote adoption of real-time or nearly real-time insurance benefit(s), vehicle 4710 or a device linked thereto supplies service provider platform 4720 with information 4734 on performance, or operation, of vehicle 4710 and, in response, incentive offer(s) 4738 is received. Information 4734 and incentive offer(s) 4738 can be exchanged through a communication framework 4730, which can include various communication networks, mobile and non-mobile, and associated functional elements (e.g., component(s), server(s), access point(s) …) that enable communication; communication networks can include personal network(s) (e.g., point-to-point short-range telecommunication network based on, for example, wearable devices); local

area network(s); or wide area network(s). Service provider platform 4720 or related third-party network(s) 4750 can issue incentive offer(s) 4738 based at least in part on available information, which can be current or nearly current information or historical information. Service network platform 4720 is functionally connected to third-party network(s) 4750 via interface 4752, which can include I/O interface components (e.g., modem(s), gateway(s), router(s), server(s) …), wired or wireless links, or the like.

[00377] Information 4734 can correspond to performance information of vehicle 4710 at an instantaneous position $\mathbf{R}(t)$, which is a time-dependent position vector and indicates a trajectory of vehicle 4710, and after a period of operation $\Delta t=t-t_0$, with t a current or substantially current instant and t_0 a time at which vehicle operation started. In addition, information 4734 can include cumulative performance data, or historical performance data. Performance data can be collected by vehicle 4710, or a device functionally coupled thereto, and can include data intrinsic to vehicle 4710 or data extrinsic to vehicle 4710. Intrinsic data can comprise location (e.g., latitude, longitude, altitude), velocity, acceleration or deceleration (e.g., driven by actuation of brake(s) of vehicle 4710), or operational condition(s) (e.g., mileage, maintenance and repair records) of vehicle 4710. In the alternative, extrinsic data includes data on operator or occupant(s) of vehicle 4710, or data on operation environment 4740. As an example, the operation environment 4740 can be a highway in which vehicle 4710 travels and the extrinsic data can include position of surrounding (in-road or off-road) vehicles relative to vehicle 4710; velocity or acceleration of surrounding vehicles; traffic data (average velocity of a group of cars, presence of accident(s), etc.) at nearby location(s) that is part of a planned trajectory of vehicle 4710; identified road hazards; intended destination or departure location ($\mathbf{R}(t_0)$); or the like. As another example, operation environment 4740 can include location(s) in which vehicle 4710 operates (e.g., high or low accident area, high car damage or theft area, safe garage parking area …). Moreover, with respect to operator of vehicle 4710, extrinsic data can include biometrics information or vitals data of such operator, e.g., heart rate, blood pressure, blood glucose, perspiration level, etc., which can affect performance of vehicle 4710. For example, when vehicle 4710 is a car, irregular heartbeat and high blood pressure can suggest the driver of vehicle 4710 is highly stressed and thus prone to unsafe driving conduct, which may warrant increase insurance benefit(s) rate. For another example, an operator with dangerously low blood glucose can be

likely to cause an accident in view of risk of loosing consciousness due to inadequate blood sugar level; thus, an increase in insurance benefits(s) may be warranted.

[00378] It can be appreciated that information 4734 conveys rich, highly segmented contextual data (e.g., data on several facets of operation of vehicle 4710, or operator or occupant(s) thereof) that service provider platform 4720 or related third-party network(s) 4750 can exploit to generate incentive offer(s) 4738. Thus, in contrast to conventional incentivation systems, incentive offer(s) 4738 described herein are highly customized, beneficiary-centric offer(s). In addition, incentive offer(s) 4738 can be adjusted in real-time or nearly real-time in response to time-dependent variations in information 4734. Furthermore, in view that incentive offer(s) 4738 are exchanged for information 4734, such incentive offer(s) can provide value to both service provider platform and prospective beneficiary of retained insurance benefits.

[00379] In an aspect of the subject disclosure, incentive offer(s) 4738 can be directed to provision of (i) insurance benefit(s), or coverage, that is adequate to current or nearly-current operation condition(s) of vehicle 4710, in addition to specific incentive package(s); (ii) discounted real-time or nearly real-time insurance benefit(s) for vehicle 4710; (iii) subsidized service(s) that operator of vehicle 4710 or occupant(s) thereof can consume; or (iv) enhanced incentive package(s), particularly in scenarios in which service provider platform 4720 increases price-point, or rate, of insurance benefit(s) in view of received information 4734. In connection with (i), if operator of vehicle 4710 adopts real-time or nearly real-time insurance benefit(s), the operator not only benefits from received specific incentive package(s) (e.g., coupons for merchandise related to trajectory of vehicle 4710), but in view of pattern(s) of operation of vehicle 4710 as revealed by information 4734, the operator also mitigates risk of underinsured operation of vehicle 4710 or unnecessary acquisition of insurance benefit(s) (e.g., excessive comprehensive coverage). Thus, incentive offer(s) 4738 directed primarily to provision of adequate coverage can increase customer loyalty through generation of highly customized, dynamic insurance benefit(s).

[00380] With respect to (ii), service provider platform 4720 or one or more of third-party network(s) 4750 can subsidize discounts for insurance benefit(s) that operator of vehicle 4710 can acquire. Magnitude of discounts can be assessed based at least in part on at least one of volume and detail of information 4734 that is communicated to service provider platform 4720; scope of incentive offer(s) 4738

allowed to be received; or scope of recipients of information 4734. In an aspect, higher detail, or granularity, and/or higher scope can result in higher discounts. In the alternative or in addition, higher granularity can result in "forgiveness" of specific information within information 4734 that can be typically adverse to beneficiary, e.g., operator of vehicle 4710, and can result in increase of rate of insurance benefit(s); for instance, an operator that discloses received tickets for traffic violation(s), e.g., camera-captured speeding infraction, can avoid increase in insurance benefit rate if the unlawful speed was within a predetermined threshold (e.g., 2-4 miles per hour) of a speed limit in the area in which the camera captured the traffic violation. Such threshold or other forgiveness criteria can be established by service provider platform 4720, e.g., insurance company, based on normal or expected conduct of operation of vehicle 4710.

[00381] In another aspect, with respect to incentive offer(s) 4738 allowed to be received, discounts for insurance benefit(s) can be determined by type and volume of advertisement that operator of vehicle 4710 agrees to receive from service provider platform 4720 or third-party network(s) 4750. In such an aspect, service provider platform 4720 can subsidize insurance benefit(s) through revenue originated from sale or lease of resources (e.g., radio channel(s) or radio time slot(s), display real estate in navigation device) for advertisement within vehicle 4710. Specific departments of service provider platform 4720, retailers, third-party network(s) can purchase or lease such advertisement resources. In addition or as an alternative, discounted price-point for insurance benefit(s) can be achieved if operator of vehicle 4710 accepts an incentive offer to receive customized, or contextual, promotional content from the service provider platform 4720 or specific advertiser(s). Such promotional content can be customized based at least in part on a portion of information 4734 that is made available to the service provider platform 4720 or the specific advertiser. Based on the portion of information 4734, customization can be accomplished as a function of at least one of time, location, or event(s). As an example, the portion of information 4734 that is made available can include typical mobility trajectories of vehicle 4710; such information can be provided to retailers (restaurants, bookstores, coffee shops, etc.) located in the vicinity of the mobility trajectories, e.g., a route of vehicle 4710 from a starting point to a destination, a retailer within such retailers can deliver advertisement(s) or incentives, e.g., coupons, at times in which vehicle 4710 is in proximity of the retailer location. As another example, if the portion of information

4734 that is supplied includes common destinations, e.g., historically re-incident locations, of vehicle 4710, retailers can advertise specific merchandise related to the destination. In particular, if the common destinations are, for example, a childcare facility, a coffee shop, and a health club, retailers that sale diapers, baby formula, children clothing; custom coffee blends and espresso machines; and nutrition supplements can supply advertisement to vehicle 4710 or related operator. As yet another example, if the available portion of information 4734 includes specific mechanical condition(s) of vehicle 4710 and position, coupon(s) and contact information (e.g., telephone number, email address, website address) of a nearby repair shop and towing service can be delivered to vehicle 4710 in an emergency event. It should be appreciated that as the portion of information 4734 that is allowed to be made available to advertiser(s) becomes more comprehensive, such information allows improved customization or targeting of advertisement content(s) and thus discount in price-point of insurance benefit(s) can become substantial (e.g., 50% discount over regularly quoted price-point) as the advertiser(s) can pay premium fees for advertisement opportunities.

[00382] In yet another aspect, operator (e.g., driver) or vehicle 4710 can elect to allow or block specific information from service provider platform 4720 (e.g., insurance company) or other entities such as law enforcement agencies (e.g., third-party network(s) 4750). Based on such election, scope of information 4734 can be determined, and service provider (e.g., insurance company) can provide lower or higher rate(s) for insurance benefit(s); in one example, allowing broad information to be conveyed as part of information 4734 may result in lower rates.

[00383] With respect to (iii), if an operator of vehicle 4710 allows exposure of information 4734 that allows rich context identification, e.g., extraction of patterns of mobility and operation habits related to vehicle 4710, an advertiser or service provider exposed to such information can subsidize one or more services for the operator. The service can include wireless service, such as voice, data, or voice and data; road assistance; medical or dental services, e.g., if the dentist office is in proximity of workplace of operator, dentist can provide discounted service; salon or barber service; etc.

[00384] Regarding (iv), as indicated supra, in scenarios in which granularity or scope of information can adversely affect assessed rate for insurance benefit(s), service provider platform 4720 can promote adoption of real-time or nearly real-time