PATROLL Claim Chart Submission

U.S. Patent 10,882,399

U.S. Patent 10,882,399 ("*IQar*" or the "patent-at-issue") was filed on June, 6, 2019, and claims an earliest priority date on November 17, 2005. 1 of the patent-at-issue is directed to a method of electric vehicle operation and power management. The method includes determining a route, segmenting the route into one or more segment destinations, calculating an energy efficient speed for the vehicle to travel to the segment destination, and calculating the applied power from the optimized speed for all of the segments. The processor receives a first input comprising information about the environment of the vehicle, a second input comprising information about the operational status of the vehicle, a third input comprising a command input from the driver of the vehicle, and a fourth input comprising vehicle information about the operational parameters of the vehicle. The method also includes the step of applying the applied power to the engine of the vehicle and/or to notifying the driver of the optimal speed.

The primary reference, U.S. Patent Publication 2008/019799 ("*Sierra*"), was filed on December 14, 2007, and claims an earliest priority date on January 21, 2004. The patent is directed to a method of remotely monitoring the operations of a vehicle. The method includes a telemetry system coupled to a vehicle that communicates with a remote site using the overhead control channels of a wireless network, such as a cellular mobile radiotelephone network. The telemetry system can monitor and control aspects of the vehicle's operations based on remote user input. The telemetry system can monitor a driver's driving practices and report incidences that meet preset criteria, such as violating a speed limit for a selected amount of time or a crossing of a geographical boundary.

The secondary reference, U.S. Patent Publication 2005/0125110 ("*Motors Liquidation*"), was filed on January 24, 2005, and claims an earliest priority date on June 27, 2003. The patent is directed to a method of vehicle component control. The method includes receiving a voice command in a unit in a vehicle, wherein the voice command indicates a maximum speed for the vehicle; and sending a vehicle component control command to a control entity from the unit based on the received voice command, wherein the control entity stores a value used during engine operation to limit speed of the vehicle to the maximum speed.

A sample claim chart comparing claim 1 of *IQar* to *Sierra* and *Motors Liquidation* is provided below.

US-10882399-B2 ("*IQar*")	A. US-20080197992-A1 ("*Sierra*") B. US-20050125110-A1 ("*Motors Liquidation*")
[1.pre] A method of **electric vehicle operation**, comprising:	**A. US-20080197992-A1** "Each vehicle 105 has a telemetry system 165 that senses and **controls various aspects of the vehicle 105 or the vehicle's operating environment**…" *Sierra* at para. 50 "A vehicle owner can enter into the GUI 125 a request for data from the telemetry system 165 or a command that **controls some aspect of the vehicle's operations**…" *Sierra* at para. 64 "The telemetry system 165 comprises relays 230 that support outputting signals to **various electrical, mechanical, or computer-based systems of the vehicle 105**…" *Sierra* at para. 75 "1. A method for **remotely monitoring operations of a vehicle** comprising…" *Sierra* at claim 1 **B. US-20050125110-A1** "7. A method for **vehicle component control**, comprising…" *Motors Liquidation* at claim 1
[1.a] determining a **segment of a vehicle route**;	**A. US-20080197992-A1** "Further, the telemetry system can **track the vehicle's geographic location, compare the location to a geographic boundary, and send the resulting path information to a central location** for recording or analysis. If a driver leaves a defined geographic boundary (i.e., region) or moves outside of a permitted driving area, the telemetry system may send a notification to the vehicle's owner or another party. The notification may be sent in an e-mail or using a web-based graphical user interface (GUI)." *Sierra* at para. 26 **B. US-20050125110-A1** "An example telematics unit 120 includes, either internally or accessible through an in-vehicle network… **a global positioning system (GPS) receiver or GPS unit 126… In one embodiment, GPS unit 126 provides longitude and latitude coordinates of the vehicle**…" *Motors Liquidation* at para. 13

(cont.) **[1.a]** determining a **segment of a vehicle route**;	"…Control of non-telematics components 114 usually requires access to the vehicle bus 112 for communication with the particular vehicle component's control entity. A control message is placed on vehicle bus 112 **directing a particular non-telematics component 114 to function in a particular manner**. The control message is received and processed by the vehicle component's control entity. **Examples of non-telematics components 114 are… the navigation system…**" *Motors Liquidation* at para. 24
[1.b] determining information about an **external environment of a vehicle, information about operational status of the vehicle**, **information from external command input telemetry in combination with user command inputs to the vehicle including voice command inputs**; and	**A. US-20080197992-A1** "…The user can obtain telemetry data from sensors or other data acquisition apparatus coupled to the device to remotely acquire **information about the device's operations, operating status, or operating environment**…" *Sierra* at para. 4 "…A **user can enter a message, such as a command, a prompt, or a request for information**, into a remote station for transmission over the wireless link to the telemetry system…" *Sierra* at para. 24 "…**communicating data to and from the vehicle 105** in overhead control channels preserves the CMR system's communication bandwidth for other **communication functions, such as voice traffic**…" *Sierra* at para. 53 "…the data processing system 46 comprises an interactive voice response ("IVR") module 190 that can include software programs. The term "interactive voice response module" or "IVR module," as used herein, refers to a computer-based system that **processes a voice message or spoken word to determine that the message has a specific meaning selected from multiple possible meanings**." *Sierra* at para. 62 "The GUI 125 can comprise a personal computer ("PC") through which the **user enters data, requests information, performs other input-related interactions**, and views displayed data, operational recommendations, and other information…" *Sierra* at para. 65 "**Exemplary sensing devices 250, 260, 270, 275 can measure, monitor, or detect some aspect of the operation or state of the vehicle 105 or the vehicle's operating environment**. On the other hand, exemplary control devices 280, 290, 295 can change, alter, or refine some aspect of the

(cont.) [1.b] determining information about an **external environment of a vehicle, information about operational status of the vehicle**, information from external command input telemetry in combination with user command inputs to the vehicle including <u>voice command inputs</u>; and	operation or state of the vehicle 105 or the vehicle's operating environment. In one exemplary embodiment of the present invention, the telemetry system 165 comprises such sensing and control devices. The telemetry system 165 can also interface with external sensing and control devices…" *Sierra* at para. 68 **B. US-20050125110-A1** "In a preferred example, <u>a vehicle user presses a button and the voice recognition is activated to accept voice commands</u>. The user interacts with a voice prompt menu that includes choices allowing the user to control vehicle components, functions and systems. Some of the functions and systems can be within the telematics unit 120, while others… are not part of the telematics unit 120, but are connected thereto through an in-vehicle data bus represented by reference 112." *Motors Liquidation* at para. 16 "Referring now to FIG. 2, at 200, the voice recognition engine of the telematics unit receives an activation signal because the user has pressed a button the telematics unit 205. A voice prompt informs the user that the voice recognition engine is ready to receive a voice command 210. <u>The voice recognition engine receives the voice command 215 spoken by the user</u>." *Motors Liquidation* at para. 27 "…In one embodiment, the telematics unit is configured to send a confirmation message 280. **The confirmation message provides data regarding the use of the selective vehicle component control function**…" *Motors Liquidation* at para. 32 "Referring now to FIG. 3, the schematic shown includes a selection table 310 resident in memory 128 of telematics unit 120. **A voice command 300 is processed,** by voice recognition engine 119, into a vehicle component control command sent from telematics unit 120…" *Motors Liquidation* at para. 37 "…<u>receiving a voice command in an in-vehicle telematics unit</u>…" *Motors Liquidation* at claim 7

[1.c] **applying** <u>calculated electric</u> <u>power to the vehicle</u> to **travel along** **the segment of the vehicle route at a** **calculated speed**.	**A. US-20080197992-A1** "For example, in conjunction with collecting data from and sending commands to the vehicle 105, the data collection system 40 can monitor one or more loads of an electrical utility system and **communicate energy consumption data to a** **central site for processing**…" *Sierra* at para. 115 "The <u>**power module 930**</u> comprises computer-executable instructions or software for **controlling the operations of the** **telemetry system 165 to conserve battery power**…" *Sierra* at para. 203 "…The <u>**power module 930**</u> operates each of these four systems 250, 260, 230a, 210 to **control electrical** **consumption and thereby extend the battery's power or** **life**." *Sierra* at para. 209 "At Step 1050, the <u>**power module 930**</u> **operates** the relay 230a that controls the starter circuit 280 in a manner **that conserves** **battery power**…" *Sierra* at para. 212 "At Step 1620, **the speed module 960 compares each** <u>**speed**</u> <u>**measurement**</u> **to the speed threshold 1620. Based on that** **comparison, at Step 1625, the speed module** <u>**determines if a**</u> <u>**speed measurement has exceeded the speed threshold**</u>**. If** **the speed measurement has not exceeded the speed** **threshold, Step 1625 causes Process 1600 to iterate Steps** **1610-1625**. The driver continues driving, and the telemetry system 165 continues monitoring the driver's driving practices." *Sierra* at para. 264 **B. US-20050125110-A1** "In a preferred example, **unit 116 is a control module utilized** **by the in-vehicle power train system, and preferably is an** **engine control module**. The telematics unit offers a voice menu that provides the user a choice **to select a restricted** **maximum speed for the vehicle**..." *Motors Liquidation* at para. 17 "When the command is accepted and the user is authenticated, **the telematics unit 120 sends a command over the vehicle** **bus 112 to engine control unit 116 commanding a value to** **be entered into the vehicle speed control system**…" *Motors Liquidation* at para. 19

(cont.) **[1.c] <u>applying</u> calculated electric power to the vehicle** to **travel along the segment of the vehicle route at a calculated speed**.	"…Vehicle component **<u>control commands are either directed to the telematics unit 120 for control of its functions</u>** or to the vehicle bus 112 in communication with the component's control entity 350, for example, an engine control unit. Within the engine control unit there is a **maximum vehicle speed control 352 which can take any known form of maximum vehicle speed control**…" *Motors Liquidation* at para. 39 "Step 406 responds to a voice command to set the maximum vehicle speed and **sends a control command to the power train or engine control module**. The control command sent to the power train or engine control module causes a **value to be set to limit the vehicle maximum speed** to that corresponding to the selected voice command for **<u>all future vehicle operation until the value is reset or overwritten</u>**." *Motors Liquidation* at para. 40 "…transmitting a first **<u>vehicle component control command from the telematics unit to a control entity within a power train control system</u>** in a vehicle in response to the received first voice command, **wherein the control entity stores a value used during engine operation to limit speed of the vehicle to the maximum speed**." *Motors Liquidation* at claim 7 "8. The method of claim 7, **wherein the control entity is an engine control module**." *Motors Liquidation* at claim 8