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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
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Secrecy Order 37 CFR 5.2

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Christopher	P.	Ricci	

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

City	Saratoga	State/Province	CA	Country of Residence i	US

Mailing Address of Inventor:

Address 1	20650 4th Street, Unit 2		
Address 2			
City	Saratoga	State/Province	CA
Postal Code	95070	Country i	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Douglas	W.	Swartz	

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

City	Wheat Ridge	State/Province	CO	Country of Residence i	US

Mailing Address of Inventor:

Address 1	3850 Ammons St.		
Address 2			
City	Wheat Ridge	State/Province	CO
Postal Code	80033	Country i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

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☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	22442		
Email Address	srlaw@sheridanross.com	Add Email	Remove Email

Application Information:

Title of the Invention	VEHICLE MIDDLEWARE		
Attorney Docket Number	6583-247	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	30	**Suggested Figure for Publication (if any)**	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

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Customer Number	22442		

Domestic Benefit/National Stage Information:

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

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61560509	2011-11-16

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61637164	2012-04-23
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61646747	2012-05-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653275	2012-05-30
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653264	2012-05-30
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653563	2012-05-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61663335	2012-06-22
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61672483	2012-07-17
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61714016	2012-10-15

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

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country i	Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

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

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

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

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

Applicant Information:

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

Applicant 1

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

Remove

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

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

Name of the Deceased or Legally Incapacitated Inventor :	
If the Assignee is an Organization check here.	☒
Organization Name	Flextronics AP, LLC

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Title of Invention	VEHICLE MIDDLEWARE	

Mailing Address Information:			
Address 1	847 Gibraltar Drive, Building 5		
Address 2			
City	Milpitas	**State/Province**	CA
Country [i]	US	Postal Code	95035
Phone Number		Fax Number	
Email Address			

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

Signature:

Remove

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

Signature	/Douglas W. Swartz/			Date (YYYY-MM-DD)	2012-11-16
First Name	Douglas W.	Last Name	Swartz	Registration Number	37739

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

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

VEHICLE MIDDLEWARE

CROSS REFERENCE TO RELATED APPLICATION

The present application claims the benefits of U.S. Provisional Application Serial Nos. 61/560,509, filed November 16, 2011; 61/637,164, filed April 23, 2012; and 61/663,335, filed June 22, 2012, all entitled "COMPLETE VEHICLE ECOSYSTEM", 61/646,747, filed on May 14, 2012, entitled "Branding of Electrically Propelled Vehicles Via the Generation of Specific Operating Sounds"; 61/653,275, filed on May 30, 2012, entitled "Vehicle Application Store for Console"; 61/653,264, filed on May 30, 2012, entitled "Control of Device Features Based on Vehicle State"; 61/653,563, filed on May 31, 2012, entitled "Complete Vehicle Ecosystem"; 61/672,483, filed on July 17, 2012, entitled "Vehicle Climate Control"; 61/714,016, filed on October 15, 2012, entitled "Vehicle Middleware;" each of which is incorporated herein by this reference in its entirety.

Cross reference is made to U.S. Patent Application Nos. 13/420,236, filed on March 14, 2012, entitled, "Configurable Vehicle Console"; 13/420,240, filed on March 14, 2012, entitled "Removable, Configurable Vehicle Console"; 13/462,593, filed on May 2, 2012, entitled "Configurable Dash Display"; 13/462,596, filed on May 2, 2012, entitled "Configurable Heads-Up Dash Display"; __/___,___, filed on November 16, 2012, entitled "Implementation of Conquest Functionality in Automotive Console" (Attorney Docket No. 6583-228); __/___,___, filed on November 16, 2012, entitled "Gesture Recognition for On-Board Display" (Attorney Docket No. 6583-229); __/___,___, filed on November 16, 2012, entitled "Vehicle Application Store for Console" (Attorney Docket No. 6583-230); __/___,___, filed on November 16, 2012, entitled "Sharing Applications/Media Between Car and Phone (Hydroid)" (Attorney Docket No. 6583-231); __/___,___, filed on November 16, 2012, entitled "In-Cloud Connection for Car Multimedia" (Attorney Docket No. 6583-232); __/___,___, filed on November 16, 2012, entitled "Music Streaming" (Attorney Docket No. 6583-233); __/___,___, filed on November 16, 2012, entitled "Control of Device Features Based on Vehicle State" (Attorney Docket No. 6583-234); __/___,___, filed on November 16, 2012, entitled "Insurance Tracking" (Attorney Docket No. 6583-235); __/___,___, filed on November 16, 2012, entitled "Law Breaking/Behavior Sensor" (Attorney Docket No.

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6583-236); __/___,___, filed on November 16, 2012, entitled "Etiquette Suggestion" (Attorney Docket No. 6583-237); __/___,___, filed on November 16, 2012, entitled "Parking Space Finder Based on Parking Meter Data" (Attorney Docket No. 6583-238); __/___,___, filed on November 16, 2012, entitled "Parking Meter Expired Alert" (Attorney Docket No. 6583-239); __/___,___, filed on November 16, 2012, entitled "Object Sensing (Pedestrian Avoidance/Accident Avoidance)" (Attorney Docket No. 6583-240); __/___,___, filed on November 16, 2012, entitled "Proximity Warning Relative to Other Cars" (Attorney Docket No. 6583-241); __/___,___, filed on November 16, 2012, entitled "Street Side Sensors" (Attorney Docket No. 6583-242); __/___,___, filed on November 16, 2012, entitled "Car Location" (Attorney Docket No. 6583-243); __/___,___, filed on November 16, 2012, entitled "Universal Bus in the Car" (Attorney Docket No. 6583-244); __/___,___, filed on November 16, 2012, entitled "Mobile Hot Spot/Router/Application Share Site or Network" (Attorney Docket No. 6583-245); __/___,___, filed on November 16, 2012, entitled "Universal Console Chassis for the Car" (Attorney Docket No. 6583-246); __/___,___, filed on November 16, 2012, entitled "Middleware" (Attorney Docket No. 6583-247); __/___,___, filed on November 16, 2012, entitled "Real Time Traffic" (Attorney Docket No. 6583-248); __/___,___, filed on November 16, 2012, entitled "Map Updating" (Attorney Docket No. 6583-249); __/___,___, filed on November 16, 2012, entitled "Communications Based on Vehicle Diagnostics and Indications" (Attorney Docket No. 6583-250); __/___,___, filed on November 16, 2012, entitled "Felon Identifier" (Attorney Docket No. 6583-251); __/___,___, filed on November 16, 2012, entitled "Behavioral Tracking and Vehicle Applications" (Attorney Docket No. 6583-252); __/___,___, filed on November 16, 2012, entitled "Improvements to Controller Area Network Bus" (Attorney Docket No. 6583-314); __/___,___, filed on November 16, 2012, entitled "Location Information Exchange Between Vehicle and Device" (Attorney Docket No. 6583-315); __/___,___, filed on November 16, 2012, entitled "In Car Communication Between Devices" (Attorney Docket No. 6583-316); __/___,___, filed on November 16, 2012, entitled "Configurable Hardware Unit for Car Systems" (Attorney Docket No. 6583-317); __/___,___, filed on November 16, 2012, entitled "Feature Recognition for Configuring a Vehicle Console and Associated Devices" (Attorney Docket No. 6583-318); __/___,___, filed on November 16, 2012, entitled

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"Configurable Vehicle Console" (Attorney Docket No. 6583-412); __/___,___, filed on November 16, 2012, entitled "Configurable Dash Display" (Attorney Docket No. 6583-413); __/___,___, filed on November 16, 2012, entitled "Configurable Heads-Up Dash Display" (Attorney Docket No. 6583-414); and __/___,___, filed on November 16, 2012, entitled "Removable, Configurable Vehicle Console" (Attorney Docket No. 6583-415). The entire disclosures of the applications listed above are hereby incorporated by reference, in their entirety, for all that they teach and for all purposes.

FIELD

The disclosure relates generally to vehicle middleware systems and particularly to vehicle middleware systems for drivers and third-parties.

BACKGROUND

Modern vehicles use a number of communication systems and/or networks. Each of these communication systems and/or networks may have a bus structure that is open or proprietary. Each of these buses may also be specifically designed to work in a vehicle or may be available as a general communication protocol. These communication systems and/or networks connect the various individual components of the vehicles through their respective buses. Examples of proprietary vehicle bus architecture include Controller Area Network (CAN) Bus, Local Interconnect Network (LIN) Bus, and the various Original Equipment manufacturer (OEM) Bus among others. Examples of open and general bus architecture include wired or wireless Ethernet and Low-Voltage Differential Signaling (LVDS) among others.

Taking the CAN bus for example, the CAN bus is a serial network developed primarily for use with automotive applications. CAN bus allows devices and microcontrollers in a vehicle to communicate with each other without a host computer.

The CAN protocol allows various devices and microcontrollers to be connected to a single CAN bus. According to the protocol, communication along the CAN bus is message-based to allow messages and data to be sent from one connected device to another.

To facilitate communication on the CAN bus without the need of a host computer, CAN features an arbitration-free transmission mechanism. A CAN transmission includes an arbitration field (message ID) representing the priority of the message being transmitted. A

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dominant bit ('0') indicates a higher priority than a recessive bit ('1'). For example, in a hypothetical two-bit ID CAN network, a device sending a '10' ID will have priority over a device sending a '11' ID on the CAN bus. In this example, both devices have a recessive bit in the first bit; however, the first device has a dominant second bit which could be used to arbitrate against a recessive second bit in the second device. The second device will back-off from transmitting over the bus upon this determination in favor of the second device and will attempt to retransmit a few clock cycles after the first device has finished transmitting. It is recognized that each message ID transmitted must be unique over the CAN bus for this arbitration-free transmission mechanism. According to the CAN specification, standard CAN (version 2.0A) uses 11-bit IDs, and extended CAN (version 2.0B) uses 29-bit IDs.

The CAN specification (ISO 11898) further described two types of CAN buses, the high-speed CAN bus (ISO 11898-2) (such as for engine, suspension, and transmission controllers and safety equipment) and the low-speed CAN bus (ISO 11898-3) (such as for less critical components including non-safety sensors). The high-speed CAN bus is designed to carry data at high speed (up to 1Mbit/s in some implementation). The low-speed CAN bus is designed to carry data at a lower speed (up to 125Kbit/s in some implementation) but is more fault tolerant than the high-speed CAN bus. Further, the low-speed CAN bus can serves as a back-up for the high-speed CAN bus in case there is a failure to the high-speed CAN bus.

As usage of the CAN standard evolves, many vehicles and systems implementing CAN are using both a high-speed and a low-speed CAN bus in parallel. The high-speed CAN bus carries information that is vital for vehicle operation or safety and is delivered to various part of the vehicle or system in substantially real time. For example, the high-speed CAN bus would be used in a situation where an airbag deploys. When sensors in the bumper or at the front of the vehicle indicate that the vehicle has been involved in a frontal collision, the sensors can send priority information via the high-speed CAN bus to the airbag deployment unit to deploy the airbag. The low-speed CAN bus would be used for other less critical applications.

A number of extensions have been proposed and used to extend the capabilities of the various bus architectures. For example, On-Board Diagnostics (OBD) adds support for

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requesting data from vehicle components for diagnostics purposes using Parameter Identifiers (PIDs). While OBD is designed to work with CAN bus, OBD can be implemented to work with other general and/or OEM specific buses. Further, specific vehicle components such as the Engine Control Unit (ECU), Transmission Control Unit (TCU), Anti-lock Braking System (ABS), and generally Body Control Modules (BCMs) can have specific protocol extensions to work with the various bus architectures. Further, extensions to the bus architectures are needed to support carrying information regarding various environmental type issues such as emissions information to comply with various government regulation mandates.

Vehicles, particularly passenger vehicles, are evolving rapidly with emerging safety, entertainment, and communication technologies. Existing vehicle bus protocols, which are largely designed for safety, are generally unsuitable for other non-safety communications, due to low bus bandwidth and transmission speed. There are therefore various needs in the art including improving information flow between vehicle components, leveraging the various communication systems and/or networks in the art to enhance vehicle safety, data security, and/or data processing, and providing remote authorized third party (*i.e.* peace officers, vehicle manufacturers, vehicle security services, and owners) access to a vehicle's functions and state information while maintaining security against unauthorized parties and components.

SUMMARY

These and other needs are addressed by the various aspects, embodiments, and/or configurations of the present disclosure. The present disclosure is directed to a vehicle having a variety of networking and other capabilities.

The vehicle can include one or more of:

(a) a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions;

(b) an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules;

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(c) a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations;

(d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants;

(e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system;

(f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal;

(g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal;

(h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request;

(i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant;

(j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle;

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(k) a computational module selector to select a computational module to perform a selected task, operation, and/or function;

(l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network;

(m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station;

(n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation;

(o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle; and

(p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information.

The first and second processing modules can be in wireless communication with one another, such that a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module.

The arbitration module can select one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module.

The health check module can perform a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module.

The displayed object movement module can select the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system.

The selected rule applied by the media filter can be one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle.

The network selector can select one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service.

The diagnostic module can provide the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service.

The remote control module can be associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer, wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator.

The media controller, in a dependent mode, can provide common content synchronously to each of the input/output systems and, in an independent mode, provide different content to different ones of the input/output systems.

The newly installed software and/or hardware and/or other component can be one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module.

The computational module can be selected by the computational module selector from among plural computational modules, wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational

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devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

The computational module can be selected by the computational module selector from among plural computational modules, wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

The network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components.

The media controller can permit a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station.

The network controller can cache automatically streaming media in response to the vehicle state changing from a parked state to an unparked state.

The unified communications presence reporting module can determine that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion.

The present disclosure further includes a non-transient, tangible computer readable medium comprising processor executable instructions to perform one or more of operations (a)-(p) and a method to perform one or more of the operations (a)-(p).

The vehicle described in the present disclosure can provide a number of advantages. For example, the vehicle can provide for improved control of data stream management and integration to accommodate the ever-increasing sophistication of each data segment and enable data sharing amongst all segments. It can enable interoperability amongst diverse systems. It can provide an open architecture, thereby obviating existing constraints on design changes due to locked-in technology. It can enable drivers freely and conveniently to integrate his or her digital lifestyle into a vehicle while enabling voice and fingertip activation. It can implement a dynamic software environment and on board vehicle network that does not need to change over technology generations. Car manufacturers can have the freedom to specify any type of processor, memory or storage technology and to make appropriate changes at any time. The architecture can integrate presentation functions,

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sensor/control functions and infotainment functions in a highly modular extensible way ensuring that the system design can scale up or down easily and evolve over many model years without battling technological obsolescence. For example, the architecture can allow the vehicle owner and/or manufacturer to upgrade and/or add application engines, upgrade the in-vehicle networking capabilities, upgrade Internet connectivity, upgrade display capabilities, and migrate to high availability capabilities, all without radical changes to the software environment and/or for inter- and intra-model line differentiation. The vehicle can support multiple processing and expansion modules that anchor specific functions to a selected processor. It can support a variety of embedded Electronic Control Unit ("ECU") data sources, such as those provided by LIN, CAN, and FlexRay, and IPv6 connectivity that enables seamless migration to Ethernet-based sensor technology and new bus architectures supported by the AutoStar initiative. It can employ a single data management hub, providing improved vehicle safety in the face of security threats posed by connectivity to the Ethernet. It can enable vehicle manufacturers to manage multiple display subsystems that are unique to the subsystem location in the vehicle and deliver vehicle occupants a personalized experience. The subsystems can include, for example, a console display (providing information and input/output control), a configurable dashboard display, a configurable heads-up display, and passenger display units. Configurable displays allow drivers to add/change gauges for non-vehicle operation information that is displayed on the dashboard and heads-up display to suit user preferences and needs. Direct video can be delivered through display controllers and/or an interactive touch screen, optionally equipped with proximity sensors, all implemented with Ethernet-based intelligent display subsystems. Handheld devices, such as personal digital assistants, cellular phones, and tablet and laptop computers, can interface wirelessly, via one or more tethered networks, with the vehicle's processing module(s) and be integrated into the processing resources available to perform vehicle-related tasks, operations, and functions. Assignment of an IPv6 address or other electronic address on a network to the vehicle can provide an address to locate the vehicle on the Internet (or other network), simplify implementing cyber security, enable applications that support safety and data collection for predictive analytics, enable voice-over-IP calls from the vehicle, and furnish reliable presence information to a presence service or server.

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These and other advantages will be apparent from the disclosure.

The phrases "at least one", "one or more", and "and/or" are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions "at least one of A, B and C", "at least one of A, B, or C", "one or more of A, B, and C", "one or more of A, B, or C" and "A, B, and/or C" means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together.

The term "a" or "an" entity refers to one or more of that entity. As such, the terms "a" (or "an"), "one or more" and "at least one" can be used interchangeably herein. It is also to be noted that the terms “comprising”, “including”, and “having” can be used interchangeably.

The term “automatic” and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation uses material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be “material”.

The term “automotive navigation system” is a satellite navigation system designed for use in automobiles. It typically uses a GPS navigation device to acquire position data to locate the user on a road in the unit's map database. Using the road database, the unit can give directions to other locations along roads also in its database. Dead reckoning using distance data from sensors attached to the drivetrain, a gyroscope and an accelerometer can be used for greater reliability, as GPS signal loss and/or multipath can occur due to urban canyons or tunnels.

The term “bus” and variations thereof, as used herein, refers to a subsystem that transfers information and/or data between various components. A bus generally refers to the collection communication hardware interface, interconnects, bus architecture, and/or protocol defining the communication scheme for a communication system and/or communication network. A bus may also be specifically refer to a part of a communication hardware that interfaces the communication hardware with the interconnects that connect to other

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components of the corresponding communication network. The bus may be for a wired network, such as a physical bus, or wireless network, such as part of an antenna or hardware that couples the communication hardware with the antenna. A bus architecture supports a defined format in which information and/or data is arranged when sent and received through a communication network. A protocol may define the format and rules of communication of a bus architecture.

The terms "communication device," "smartphone," and "mobile device," and variations thereof, as used herein, are used interchangeably and include any type of device capable of communicating with one or more of another device and/or across a communications network, via a communications protocol, and the like. Exemplary communication devices may include but are not limited to smartphones, handheld computers, laptops, netbooks, notebook computers, subnotebooks, tablet computers, scanners, portable gaming devices, phones, pagers, GPS modules, portable music players, and other Internet-enabled and/or network-connected devices.

The term "communication system" or "communication network" and variations thereof, as used herein, refers to a collection of communication components capable of one or more of transmission, relay, interconnect, control, or otherwise manipulate information or data from at least one transmitter to at least one receiver. As such, the communication may include a range of systems supporting point-to-point to broadcasting of the information or data. A communication system may refer to the collection individual communication hardware as well as the interconnects associated with and connecting the individual communication hardware. Communication hardware may refer to dedicated communication hardware or may refer a processor coupled with a communication means (*i.e.* an antenna) and running software capable of using the communication means to send a signal within the communication system. Interconnect refers some type of wired or wireless communication link that connects various components, such as communication hardware, within a communication system. A communication network may refer to a specific setup of a communication system with the collection of individual communication hardware and interconnects having some definable network topography. A communication network may include wired and/or wireless network having a pre-set to an ad hoc network structure.

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The term "computer-readable medium" as used herein refers to any tangible storage and/or transmission medium that participate in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, NVRAM, or magnetic or optical disks. Volatile media includes dynamic memory, such as main memory. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, magneto-optical medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, a solid state medium like a memory card, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. A digital file attachment to e-mail or other self-contained information archive or set of archives is considered a distribution medium equivalent to a tangible storage medium. When the computer-readable media is configured as a database, it is to be understood that the database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Accordingly, the disclosure is considered to include a tangible storage medium or distribution medium and prior art-recognized equivalents and successor media, in which the software implementations of the present disclosure are stored.

The terms “dash” and “dashboard” and variations thereof, as used herein, are used interchangeably and include any panel and/or area of a vehicle disposed adjacent to an operator, user, and/or passenger. Typical dashboards may include but are not limited to one or more control panel, instrument housing, head unit, indicator, gauge, meter, light, audio equipment, computer, screen, display, HUD unit, and graphical user interface.

The terms “determine”, “calculate” and “compute,” and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation or technique.

The term “display” refers to a portion of a screen used to display the output of a computer to a user.

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The term "displayed image" or "displayed object" refers to an image produced on the display. A typical displayed image is a window or desktop or portion thereof, such as an icon. The displayed image may occupy all or a portion of the display.

The term "electronic address" refers to any contactable address, including a telephone number, instant message handle, e-mail address, Universal Resource Locator ("URL"), Universal Resource Identifier ("URI"), Address of Record ("AOR"), electronic alias in a database, like addresses, and combinations thereof.

The terms "online community", "e-community", or "virtual community" mean a group of people that primarily interact via a computer network, rather than face to face, for social, professional, educational or other purposes. The interaction can use a variety of media formats, including wikis, blogs, chat rooms, Internet forums, instant messaging, email, and other forms of electronic media. Many media formats are used in social software separately or in combination, including text-based chatrooms and forums that use voice, video text or avatars.

The term "means" as used herein shall be given its broadest possible interpretation in accordance with 35 U.S.C., Section 112, Paragraph 6. Accordingly, a claim incorporating the term "means" shall cover all structures, materials, or acts set forth herein, and all of the equivalents thereof. Further, the structures, materials or acts and the equivalents thereof shall include all those described in the summary of the invention, brief description of the drawings, detailed description, abstract, and claims themselves.

The term "module" as used herein refers to any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software that is capable of performing the functionality associated with that element. Also, while the disclosure is presented in terms of exemplary embodiments, it should be appreciated that individual aspects of the disclosure can be separately claimed.

The term "presence" is a status indicator that conveys ability and willingness of a potential communication partner—for example a user--to communicate. A user's client provides presence information (presence state) via a network connection to a presence service, which is stored in what constitutes his personal availability record (called a presentity) and can be made available for distribution to other users (called *watchers*) to

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convey his availability for communication. Presence information has wide application in many communication services and is one of the innovations driving the popularity of instant messaging or recent implementations of voice over IP clients. A user client may publish a presence state to indicate its current communication status. This published state informs others that wish to contact the user of his availability and willingness to communicate. The most common use of presence today is to display an indicator icon on instant messaging clients, typically from a choice of graphic symbols with easy-to-convey meanings, and a list of corresponding text descriptions of each of the states. Even when technically not the same, the "on-hook" or "off-hook" state of called telephone is an analogy, as long as the caller receives a distinctive tone indicating unavailability or availability.

The term "satellite positioning system receiver" refers to a wireless receiver or transceiver to receive and/or send location signals from and/or to a satellite positioning system, such as the Global Positioning System ("GPS") (US), GLONASS (Russia), Galileo positioning system (EU), Compass navigation system (China), and Regional Navigational Satellite System (India).

The term "social network service" is a service provider that builds online communities of people, who share interests and/or activities, or who are interested in exploring the interests and activities of others. Most social network services are web-based and provide a variety of ways for users to interact, such as e-mail and instant messaging services.

The term "social network" refers to a web-based social network.

The term "screen," "touch screen," or "touchscreen" refers to a physical structure that enables the user to interact with the computer by touching areas on the screen and provides information to a user through a display. The touch screen may sense user contact in a number of different ways, such as by a change in an electrical parameter (e.g., resistance or capacitance), acoustic wave variations, infrared radiation proximity detection, light variation detection, and the like. In a resistive touch screen, for example, normally separated conductive and resistive metallic layers in the screen pass an electrical current. When a user touches the screen, the two layers make contact in the contacted location, whereby a change in electrical field is noted and the coordinates of the contacted location calculated. In a

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capacitive touch screen, a capacitive layer stores electrical charge, which is discharged to the user upon contact with the touch screen, causing a decrease in the charge of the capacitive layer. The decrease is measured, and the contacted location coordinates determined. In a surface acoustic wave touch screen, an acoustic wave is transmitted through the screen, and the acoustic wave is disturbed by user contact. A receiving transducer detects the user contact instance and determines the contacted location coordinates. The touch screen may or may not include a proximity sensor to sense a nearness of object, such as a user digit, to the screen.

The term "vehicle" refers to a device or structure for transporting animate and/or inanimate or tangible objects (e.g., persons and/or things), such as a self-propelled conveyance. The term "vehicle" as used herein includes any conveyance, or model of a conveyance, where the conveyance was originally designed for the purpose of moving one or more tangible objects, such as people, animals, cargo, and the like. The term "vehicle" does not require that a conveyance moves or is capable of movement. Typical vehicles may include but are in no way limited to cars, trucks, motorcycles, busses, automobiles, trains, railed conveyances, boats, ships, marine conveyances, submarine conveyances, aircraft, space craft, flying machines, human-powered conveyances, and the like.

The preceding is a simplified summary of the disclosure to provide an understanding of some aspects of the disclosure. This summary is neither an extensive nor exhaustive overview of the disclosure and its various aspects, embodiments, and/or configurations. It is intended neither to identify key or critical elements of the disclosure nor to delineate the scope of the disclosure but to present selected concepts of the disclosure in a simplified form as an introduction to the more detailed description presented below. As will be appreciated, other aspects, embodiments, and/or configurations of the disclosure are possible utilizing, alone or in combination, one or more of the features set forth above or described in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 depicts a vehicle configured in accordance with an embodiment;

Fig. 2 is a block diagram of a processing module according to an embodiment;

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Fig. 3 depicts a vehicle implementing processing modules configured in according with an embodiment;

Fig. 4 depicts a flow diagram of a health-check method according to an embodiment;

Fig. 5 depicts a flow diagram of a hand-off procedure method according to an embodiment;

Fig. 6 depicts a flow diagram of a system stand-by method according to an embodiment;

Fig. 7 depicts a flow diagram of a processor off-load method according to an embodiment;

Fig. 8 depicts a flow diagram according to an embodiment;

Fig. 9 depicts a flow diagram according to an embodiment;

Fig. 10 depicts a flow diagram according to an embodiment;

Fig. 11 depicts a flow diagram according to an embodiment;

Fig. 12 depicts a flow diagram according to an embodiment;

Fig. 13 depicts a flow diagram according to an embodiment;

Fig. 14 depicts a flow diagram according to an embodiment;

Fig. 15 is a block diagram of a computational system according to an embodiment;

Fig. 16 is a block diagram of an input/output system according to an embodiment;

Fig. 17 depicts a flow diagram according to an embodiment;

Fig. 18 depicts a flow diagram according to an embodiment;

Fig. 19 depicts a flow diagram according to an embodiment;

Fig. 20 is a block diagram of a vehicle computational system according to an embodiment;

Fig. 21 depicts a flow diagram according to an embodiment;

Figs. 22A-B depict configurations of input/output systems according to an embodiment;

Fig. 23 depicts a flow diagram according to an embodiment;

Fig. 24 depicts a flow diagram according to an embodiment;

Fig. 25 depicts a flow diagram according to an embodiment;

Fig. 26 depicts a flow diagram according to an embodiment;

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Fig. 27 depicts a communication system according to an embodiment;

Fig. 28 depicts a flow diagram according to an embodiment;

Fig. 29 depicts a flow diagram according to an embodiment; and

Fig. 30 depicts a flow diagram according to an embodiment.

DETAILED DESCRIPTION

Overview

The present disclosure describes a vehicle implementing one or more processing modules. These modules are configured to connect and interface with the various buses in the vehicle, where the various buses are connected with the various components of the vehicle to facilitate information transfer among the vehicle components. Each processing module is further modularized with the ability to add and replace other functional modules now or in the future. These functional modules can themselves act as distinct vehicle components. Each processing module may hand-off processing to other modules depending on its health, processing load, or by third-party control. Thus, the plurality of processing modules help to implement a middleware point of control to the vehicle with redundancy in processing and safety and security awareness in their applications.

Exemplary processing modules include one or more of:

(a) an active-active or active-standby duplicated processing module configurations in fully or partially wirelessly networked vehicles;

(b) an arbitration module to handle hand-off conflicts in duplicated processing module configurations;

(c) a health check module which checks critical and non-critical tasks, functions, and operations of each processing module to determine which to designate as the active or primary processing module;

(d) a displayed object movement module to move displayed objects from a source input/output system to a target or destination input/output system ;

(e) a media filter which filters third party sourced signals, particularly multimedia signals, in a manner consistent with a vehicle universal or occupant-specific whitelist, blacklist, or other user preference, sensed occupant context, and/or a governing federal, state, provincial, and/or local law or regulation;

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(f) in a vehicle equipped with an internal wireless network and optionally bus-type network, a network selector which selects a network for signal transmission based on network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s) (e.g., availability, packet drop or loss, jitter, latency, buffer capacity, throughput, and the like) quality of service, and/or other parameters and configures the signal for transmission over the selected network;

(g) a diagnostic module handles warning/error signals in a predetermined manner;

(h) a remote control module which receives a request from a remote source or third party to command a vehicle function (which function may be identified by a suitable function-specific code), authenticates the requestor, and if successfully authenticated and if privileged to request the performance of the vehicle function, executes the request notwithstanding a contrary command from the vehicle operator;

(i) a media controller, which receives a media stream from a remote node, identifies which input/output systems are disabled due to operator command and/or as a result of governing law, and provides the media stream to an input/output system associated with the associated occupant;

(j) an installation supervisor which, for a newly installed software and/or hardware and/or other device (such as an on-board sensor, processing module or component thereof, software application, circuit board, expansion module or component thereof (which expansion module may be hardware, software, or a combination thereof), critical or non-critical device (such as those discussed above with respect to the critical or non-critical system controller(s)), cellular upgrade module (e.g., 2G, 3G, 4G, 5G, LTE, or other cellular standard upgrade or Subscriber Identity Module ("SIM") card, board, or other upgrade module, and the like), determines whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component, license restrictions, and other criteria, and, if satisfied, creates data structures in the component (if it has a resident memory) and the vehicle memory to bind the component to the current vehicle;

(k) a computational module selector to perform processing load balancing over multiple processing modules;

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(l) network security which isolates a component encountering a security breach and/or isolates the primary processing module from other components in the local network if the former is not possible;

(m) a "cone of silence" capability by the media controller for external computational devices;

(n) an automated caching, potentially by individual input/output systems, by the media controller of media based on various factors;

(o) a presence reporting module considering local laws in determining whether an individual is present (e.g., for unified communications) and, if so, by what communication channel(s); and

(p) a social networking module to enable processing modules of different vehicles to wirelessly connect for to exchange vehicle information.

The Vehicle

Figs. 1, 3, and 15 collectively illustrate a vehicle 100 incorporating various features.

Referring to Fig. 1, the vehicle 100 includes, among many components common to vehicles, wheels 104, a power source 108 (such as an engine, motor, or energy storage system (*e.g.,* battery or capacitive energy storage system)), a manual or automatic transmission 112, a manual or automatic transmission gear controller 116, a power controller 120 (such as a throttle), a braking system 136, a steering wheel 140, a display panel 144 (*e.g.,* a dashboard displaying information regarding components in vehicle 100), and an occupant seating system 148.

Other components in vehicle 100 include communication components such as a wireless signal receiver 152 to receive wireless signals from signal sources such as roadside beacons and other electronic roadside devices, and a satellite positioning system receiver 156 (*e.g.,* a Global Positioning System ("GPS") (US), GLONASS (Russia), Galileo positioning system (EU), Compass navigation system (China), and Regional Navigational Satellite System (India) receiver).

The vehicle 100 also includes a number of control units and sensors for the various components of vehicle 100. Exemplary control units and sensors therefor include wheel state sensor 160 to sense one or more of vehicle speed, acceleration, deceleration, wheel rotation,

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wheel speed (*e.g.,* wheel revolutions-per-minute), wheel slip, and the like. Power source controller and energy output sensor 164 controls the power source and to senses a power output of the power source 108. Example aspects of power source controller and energy output sensor 165 include balancing the mixture of fuel (*e.g.* gasoline, natural gas, or other sources of fuel) and other elements (*e.g.* air for combustion) and measuring one or more of current engine speed (*e.g.*, revolutions-per-minute), energy input and/or output (*e.g.,* voltage, current, fuel consumption, and torque), and the like. Switch state control unit 168 activates or deactivates the power source (*e.g.* the ignition). Transmission control unit ("TCU") 170 sets the current state the transmission (e.g., gear selection or setting) based on the state of gear controller 116. Power control unit 174 sets the throttle for power source 108 given the state of power controller 120. Brake control unit 176 operates the current state (braking or non-braking) of braking system 136 based on the state of the brake controller (which could be linked to power controller 120).

Vehicle 100 also includes other control units and sensors for safety purposes. An airbag deployment system includes an airbag deployment control unit 133 and a collision sensor 132. When a collision is detected by collision sensor 132, data is sent to airbag release control unit 133 which determines whether to deploy the airbag based on the data received (*e.g.*, the speed of the collision and the area of impact to determine whether an airbag deployment can promote safety). Other safety components include seat belt control unit and sensors for setting the seat belt (*e.g.* engaging or disengaging the seat belt during hard breaking), head light control unit and sensors for headlight 128 and other lights (*e.g.* emergency light, brake light, parking light, fog light, interior or passenger compartment light, and/or tail light state (on or off)), door settings (locking and unlocking), window settings (opening or closing), one or cameras or other imaging sensors (which commonly convert an optical image into an electronic signal but may include other devices for detection objects such as an electromagnetic radiation emitter/receiver that emits electromagnetic radiation and receives electromagnetic waves reflected by the object) to sense objects, such as other vehicles and pedestrians and optionally determine the distance, trajectory and speed of such objects, in the vicinity or path of the vehicle, and other components and sensors as known in the art.

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Vehicle 100 further includes components for the convenience and enjoyment of the occupants or operators. Seating system controller and sensor 178 sets the position and other settings of a seat and measure various attributes of an occupant of the seat (*e.g.*, the current weight of seated occupant) in a selected seat of the seating system 148. Entertainment system 190, preferably located in the head unit of the passenger compartment, provides entertainment options such as music or video for occupants of vehicle 100.

Examples of other vehicle components include one or more cameras or other imaging sensors (which commonly convert an optical image into an electronic signal but may include other devices for detection objects such as an electromagnetic radiation emitter/receiver that emits electromagnetic radiation and receives electromagnetic waves reflected by the object) to sense objects, such as other vehicles and pedestrians and optionally determine the distance, trajectory and speed of such objects, in the vicinity or path of the vehicle, odometer reading sensor, trip mileage reading sensor, wind speed sensor, radar transmitter/receiver output, brake wear sensor, steering/torque sensor, oxygen sensor, ambient lighting sensor, vision system sensor, ranging sensor, parking sensor, heating, venting, and air conditioning (HVAC) sensor, water sensor, air-fuel ratio meter, blind spot monitor, hall effect sensor, microphone, radio frequency (RF) sensor, infrared (IR) sensor, vehicle control system sensors, wireless network sensor (e.g., Wi-Fi and/or Bluetooth sensor), cellular data sensor, and other sensors known to those of skill in the vehicle art.

Vehicle 100 includes one or more vehicle buses 180 for connecting the various components and systems of vehicle 100 as described above. In modern vehicles, subsystems such as an anti-lock braking system (ABS), which may be used by brake control unit 176 and braking system 136, engine control unit (ECU), which may be used by power source control 164, transmission control unit (TCU), which may be used by transmission control unit 170 and gear controller 116, and supplemental restraint system (SRS), such as airbag deployment control unit 133 and collision sensor 132 and seating system controller and sensor 178, are frequently interconnected using a standardized bus. Standardized buses for use in vehicles include Controller Area Network (CAN), and Local Interconnect Network (LIN) and others, as are known in the art. In particular, these components and subsystems may use the high-speed CAN bus for real-time information. Other components with lower priorities may use

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the low-speed CAN bus to transmit information. Vehicle bus 180 (which is optional) is illustrated as one bus in Fig. 1. However, vehicle 100 may include one or more of these standardized buses, such as a combination of the high-speed and low-speed CAN, LIN, and/or other buses. Also, vehicle bus 180 may further include and support extensions to standardized buses, such as the FlexCAN extension to the CAN bus. Further, vehicle bus 180 may include standardized communication networks that can be implemented vehicle 100. Well known networks include Ethernet, Wi-Fi, USB, I^2C, RS232, RS485 and FireWire.

Vehicle 100 also includes processing module 124. Preferably, processing module 124 is placed in the trunk, hood (not shown), behind the head unit (not shown), and/or other accessible but unseen locations. Processing module 124 is coupled to vehicle bus 180 and provides processing for data related to vehicle bus 180 and other vehicle components.

Processing modules, for example, can perform, monitor, and/or control critical and non-critical tasks, functions, and operations, such as interaction with and/or monitoring and/or control of critical and non-critical on board sensors and vehicle operations (*e.g.,* engine, transmission, throttle, brake power assist/ brake lock-up, electronic suspension, traction and stability control, parallel parking assistance, occupant protection systems, power steering assistance, self-diagnostics, event data recorders, steer-by-wire and/or brake-by-wire operations, vehicle-to-vehicle interactions, vehicle-to-infrastructure interactions, partial and/or full automation, telematics, navigation/SPS, multimedia systems, audio systems, rear seat entertainment systems, game consoles, tuners (SDR), heads-up display, night vision, lane departure warning, adaptive cruise control, adaptive headlights, collision warning, blind spot sensors, park/reverse assistance, tire pressure monitoring, traffic signal recognition, vehicle tracking (e.g., LoJack™), dashboard/instrument cluster, lights, seats, climate control, voice recognition, remote keyless entry, security alarm systems, and wiper/window control). Processing modules can be enclosed in an advanced EMI-shielded enclosure containing multiple expansion modules. Processing modules can have a "black box" or flight data recorder technology, containing an event (or driving history) recorder (containing operational information collected from vehicle on board sensors and provided by nearby or roadside signal transmitters), a crash survivable memory unit, an integrated controller and circuitry

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board, and network interfaces. Processing module 124 is further disclosed with reference to Fig. 2.

As set forth below and as shown in Fig. 3, multiple processing modules 124a-c may be located at various locations in a common vehicle. The disparate, spaced apart locations of the processing modules 124a-c provide redundancy in the event of a collision or other catastrophic event. For example, a collision with the rear of the vehicle 100 may damage the processing module 124c but not the processing modules 124a,b.

As will be appreciated, the multiple processing modules 124a-c may be configured to operate in an active/active and/or active/standby mode. These operating modes describe the manner in which first and second (redundant) devices operate under normal conditions. In active/standby implementations, only the primary device in a pair processes information and issues commands. The standby device sits idle, ready to assume the active role should the primary device fail. The standby device may receive, from the primary device, processing, command, and primary device state information to facilitate stateful failover, but it does not itself commonly perform meaningful work until the primary device fails. In active/active implementations, both devices are online and collaboratively process information and issue commands under normal conditions. When one device fails, all processing is handled by the remaining device.

A user can be an occupant of a vehicle 100 that implements the system of Fig. 1. A user can further be an assembler, technician, or mechanic working on the vehicle to configure the system of Fig. 1 for use by an end-user of the vehicle.

Fig. 2 illustrates an exemplary block diagram for a (primary and/or secondary) processing module 124a-c.

Processing module 124 may include processor 210, memory 220, storage 230, and interfaces for one or more buses 240-270. Among the interfaces 240-270 include high-speed CAN bus 240, low-speed CAN bus 250, LIN bus 260, network interface 270, and/or wireless interface 280. One skilled in the art will recognize that processing module 124 may take other configurations and with other buses as known in the art, and interfaces 240-290 may be implemented with more or fewer buses than those shown.

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The operations of processing module 124 will now be described with respect to the high-speed CAN bus interface 240 and low-speed CAN bus interface 250 as an exemplary configuration in one embodiment of the invention. In one implementation, processing module 124 receives data transmitted over vehicle bus 180 through high-speed CAN bus interface 240 and/or low-speed CAN bus interface 250. Data transmitted over the high-speed CAN bus includes priority data from subsystems such as anti-lock braking system (ABS), which may be used by brake control unit 176 and braking system 136, engine control unit (ECU), which may be used by power source control 164, transmission control unit (TCU), which may be used by transmission control unit 170 and gear controller 116, and supplemental restraint system (SRS), such as airbag deployment control unit 133 and collision sensor 132 and seating system controller and sensor 178, as described above. Data transmitted over the low-speed CAN bus includes other noncritical data, such as engine temperature and oil pressure sensor readings.

Wireless interface 280, by contrast, can be a transceiver for one or more long, intermediate, or short range wireless networks, such as a radio (e.g., cellular such as CDMA, GSM, or IS-95 network), 802.X, a WiFi™ network, a Bluetooth™ network, and the like, sending and receiving a wide variety of information, including lower priority information, such as data for the convenience and enjoyment of the occupants in entertainment system 190 or seating system 148. The wireless interface 280 can access information over one or more wireless networks using an appropriate protocol, such as the Wireless Application Protocol, Wireless Internet Protocol, Wireless Session Protocol, Bluetooth Wireless Protocol, Wireless Datagram Protocol, Wireless HART Protocol, Wired Equivalent Privacy (WEP), MiWi and MiWi P2P, RuBee (IEEE standard 1902.1), Wireless USB, Wireless Transport Layer Security (WTLS), and the like. In one vehicle configuration, the wireless interface 280 connects, via a short distance protocol such as Bluetooth™ or WiFi™, to an external computational device, such as a cell phone, personal digital assistant, laptop, personal computer, or tablet computer, for access to remote nodes over the Internet.

Local network interface 270 is a transceiver for signals exchanged with other on board components of the vehicle (including the components discussed above with respect to Fig. 1). The signals may be sent over a wired or wireless (or combination thereof) network.

In one configuration, the local network interface is a wireless access point. Any suitable local area network protocol may be used, with the Ethernet protocol and the short-range protocols mentioned above being examples.

The processor 210 may comprise a general purpose programmable (micro)processor or controller for executing application programming or instructions. In accordance with at least some embodiments, the processor 210 may include multiple processor cores, and/or implement multiple virtual processors. In accordance with still other embodiments, the processor 210 may include multiple physical processors. As a particular example, the processor 304 may comprise a specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. The processor 210 generally functions to run programming code or instructions implementing various functions of the device 200.

Memory 220 for use in connection with the execution of application programming or instructions by the processor 210, and for the temporary or long term storage of program instructions and/or data. As examples, the memory 220 may comprise RAM, DRAM, SDRAM, or other solid state memory. Alternatively or in addition, data storage 230 may be provided. Like the memory 220, the data storage 230 may comprise a solid state memory device or devices. Alternatively or in addition, the data storage 230 may comprise a hard disk drive or other random access memory.

Fig. 3 depicts a vehicle 300 with multiple processing modules according to an embodiment. Vehicle 300 includes bus 180, vehicle component 310, and processing modules 124A-C.

Vehicle component 310 is an exemplary vehicle component for illustration purposes that is connected to bus 380. Vehicle component 310 may represent any of the vehicle components discussed in connection with vehicle 100 (Fig. 1).

Each of the processing modules 124A-C is each coupled to bus 180. Processing module 124A is located in the engine compartment of vehicle 300; processing module 124B is located in the passenger compartment of vehicle 300; and processing module 124C is located in the truck of vehicle 300.

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In one configuration, some of the processing modules 124A-C may have limited processing functions as compared to the others. For example, processing module 124A may act as the default processing module for vehicle 300 normally because of its location being close to most critical vehicle components in the engine compartment (*i.e.*, ECU, TCU). If the other processing modules 124B-C are only needed for redundancy, they may be implemented to only have limited capabilities (*i.e.*, these processing modules would not be require to have processing all critical and non-critical functions). This implementation has the advantage of reduced costs and/or space as compared to fitting processing module will full capabilities. The processing modules 124A-C may also have cascading levels of capabilities. For example, processing module 124B is fitted in the passenger compartment and is deemed to most likely survive a collision; it may be required to have capabilities critical to vehicle operation but no other capabilities to save space in the passenger compartment. Processing module 124C may have additional capabilities such as a cellular module so that emergency calls may be automatically placed if the default processing module 124A fails.

In another configuration, each of the processing modules 124A-C may have different capabilities. For example, processing module 124A may have capabilities only for critical vehicle functions; processing module 124C may have capabilities only for non-critical vehicle functions; and processing module 124B may be reserved for back-up processing of both critical and non-critical vehicle functions. In one implementation, processing may be off-loaded to another processing module if one module becomes overloaded. This configuration has the advantage further reduction in costs and space because processing power is not wasted due to redundancy. In the case where one processing module malfunctions, the other processing modules may pick up processing duties via a processor off-load procedure. If there is not enough processing power all wanted functionalities, the processing modules may work together to prioritize critical vehicle functions ahead of non-critical functions.

Fig. 20 depicts computational modules and data structures in memory 220 according to an embodiment.

An arbitration module 2000 selects a processing module to currently possess or own token 2004 (which is used to designate the processing module 124, in an active-standby

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configuration, being the active or standby processing module or, in an active-active configuration, having the responsibility for certain tasks, functions, or operations, such as critical tasks, operations, or functions, while the other processing module has responsibility for other different tasks, operations, or functions, such as non-critical tasks, operations, or functions.

A heath check module 2008 performs checks or tests, in response to internally generated interrupts or requests from the other processing module, its ability to perform both critical and non-critical tasks, functions, and operations. Individual scores and composite or cumulative scores for the tasks, functions, and operations can be determined and compared to thresholds to determine an absolute state of health and/or to the individual and/or cumulative scores of the other processing module to determine a relative state of health.

Critical system controller(s) control, monitor, and/or operate critical systems. Critical systems can include one or more of (depending on the particular vehicle) monitoring, controlling, and/or operating the ECU, TCU, door settings, window settings, and/or blind spot monitor, monitoring, controlling, and/or operating the safety equipment (e.g., airbag deployment control unit 133, collision sensor 132, nearby object sensing system, seat belt control unit, sensors for setting the seat belt, *etc.*), monitoring and/or controlling certain critical sensors such as the power source controller and energy output sensor 164, engine temperature, oil pressure sensing, hydraulic pressure sensors, sensors for headlight 128 and other lights (*e.g.* emergency light, brake light, parking light, fog light, interior or passenger compartment light, and/or tail light state (on or off)), vehicle control system sensors, wireless network sensor (e.g., Wi-Fi and/or Bluetooth sensor), cellular data sensor, and/or steering/torque sensor, controlling the operation of the engine (*e.g.,* ignition), head light control unit, power steering, display panel, switch state control unit 168, power control unit 174, and/or brake control unit 176, and/or issuing alerts to a user and/or remote monitoring entity of potential problems with a vehicle operation.

Non-critical system controller(s) 2016 control, monitor, and/or operate non-critical systems. Non-critical systems can include one or more of (depending on the particular vehicle) monitoring, controlling, and/or operating a non-critical system. emissions control, seating system controller and sensor 178, entertainment system 190, monitoring certain non-

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critical sensors such as ambient (outdoor) weather readings (e.g., temperature, precipitation, wind speed, and the like), odometer reading sensor, trip mileage reading sensor, road condition sensors (e.g., wet, icy, etc.), radar transmitter/receiver output, brake wear sensor, oxygen sensor, ambient lighting sensor, vision system sensor, ranging sensor, parking sensor, heating, venting, and air conditioning (HVAC) system and sensor, water sensor, air-fuel ratio meter, hall effect sensor, microphone, radio frequency (RF) sensor, and/or infrared (IR) sensor.

On board sensor monitor(s) 2020 include interfaces to receive signals from and transmit signals to a corresponding on-board sensor, including the on-board sensors discussed above, and the logic to monitor sensor operation and readings.

The displayed object movement module 2024 monitors display input received from occupants for commands to move a displayed object from a first display to a different second display in the vehicle for viewing by, for instance, a different occupant. The display input may include, for example, a sensed gesture, an icon selection, or other input indicative to a desire or request to move a displayed object from the first display to the second display. The moved object may or may not be retained for view on the first display after movement.

The diagnostic module 2028 handles warning/error signals in a predetermined manner. The signals, for instance, can be presented to a third party and/or occupant and/or cause the performance of on board diagnostics.

The media filter 2032 filters third party sourced signals, particularly multimedia signals, in a manner consistent with a vehicle universal or occupant-specific whitelist, blacklist, or other user preference, sensed occupant context, and/or a governing federal, state, provincial, or local law or regulation.

The network selector 2036 selects a network for signal transmission based on network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s) (e.g., availability, packet drop or loss, jitter, latency, buffer capacity, throughput, and the like) quality of service, and/or other parameters and configures the signal for transmission over the selected network.

The remote control module 2040 receives a request from a remote source or third party to command a vehicle function (which function may be identified by a suitable

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function-specific code), authenticates the requestor, and if successfully authenticated and if privileged to request the performance of the vehicle function, executes the request notwithstanding a contrary command from the vehicle operator. The requestor can, for example, be a vehicle owner, a law enforcement authority, a vehicle manufacturer, a lender having a loan collateralized by the vehicle, and the like.

The installation supervisor 2044, for a newly installed software and/or hardware and/or other device (such as an on-board sensor, processing module 124 or component thereof, software application, circuit board, expansion module 290 or component thereof (which expansion module 290 may be hardware, software, or a combination thereof), critical or non-critical device (such as those discussed above with respect to the critical or non-critical system controller(s) 2012 and 2016), cellular upgrade module (e.g., 2G, 3G, 4G, 5G, LTE, or other cellular standard upgrade or Subscriber Identity Module ("SIM") card, board, or other upgrade module, and the like), determines whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component, license restrictions, and other criteria, and, if satisfied, creates data structures in the component (if it has a resident memory) and the vehicle memory 220 to bind the component to the current vehicle.

The media controller 1524 receives a media stream from a remote node, identifies which input/output systems are disabled due to operator command and/or as a result of governing law, and provides the media stream to an input/output system associated with the associated occupant.

The computational module selector 2052 identifies the computational modules, particularly software applications, currently available within the local area network of the vehicle, the identification including not only the type (*e.g.,* game, multimedia, music, utility, and the like), source or vendor (*e.g.,* Apple, Microsoft, and the like), capabilities and requirements (e.g., operating system, processing, memory, display, and other requirements) but also the version of the computational module, and records this information in memory 220. The selector 2052 can select not only, for duplicated computational modules, a most current version of the duplicated module to execute and a computational platform (e.g., first, second, . . . processing module or external computational device 1532) for the execution.

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The presence reporting module 2056 considers local laws, individual (contactee) context, and other factors in determining whether an individual (contactee) is present (e.g., for unified communications) and, if so, by what communication channel(s).

The social networking module 2070 creates, manages, and/or maintains a social networking session with one or more other vehicles. The social networking module 2070 can identify operational vehicles having an occupant in a social networking relationship with an occupant of the selected vehicle, notify one or both occupants of the capability of instantiating a social networking session, and effectuate and maintain such a session.

In one application, processing module 124 is configured to process information sent over the CAN buses. As priority data is received by processing module 124 from high-speed CAN bus interface 240 and/or low-speed CAN bus 250, processing module 124 may determine the nature of the received data and independently do further processing on the received data. In a preferred embodiment, processor 210 executes instructions stored in memory 220 to perform these functions. Further, memory 220 serves as stores and retrieves for data by processor 210.

In one configuration, processing module 124 only receives data over high-speed CAN bus 240 and may send the data back over low-speed CAN bus 250. As the CAN bus provides arbitration-free transmission, processing module 124 may passively listen to information traffic, which includes priority data from the various components as discussed, sent over high-speed CAN bus 240. Processing module 124 then determines if a piece of received information may need further processing and should be sent to devices via low-speed CAN bus 250.

For example, collision sensor 132 may have detected a frontal collision. In one data path, collision sensor 132 may send a signal with details to the collision (*i.e.* areas of impact and/or force and/or velocity of impact) over high-speed CAN bus 240 with specific target to airbag release control unit 133 to potentially deploy the airbags once airbag release control unit 133 determines that it is suitable to do so upon the receipt of the sent data. Since the CAN bus is arbitration-free, processing module 124 also receives the collision information from collision sensor 132. Processing module 124 then processes the information received to

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determine to relay the information to an information display (*i.e.*, display console of entertainment system 190) via the low speed CAN bus 250.

It is noted that the data rate is limited in the current implementations of the CAN bus. However, future implementations may allow for higher speeds such that the CAN bus may support data rate suitable for multimedia application. In these implementations, processing module 200 may be configured to leverage the CAN bus for multimedia use. For example, real-time multimedia information (*i.e.* analog/digital radio or television signal) may be received by an antenna and transmitted through a CAN bus via processing unit 200 to entertainment system 190. At some point in time, one component of vehicle 100 may have suffered a malfunction that requires information the driver. In the default implementation of the CAN bus, the higher priority signal from the malfunctioning component will have priority over the multimedia information. With the leveraged CAN bus by processing module 200, the high priority signal from the malfunctioning component can be further processed by processor 210. If processor 210 determines that the malfunction is minor, processor 210 may relay the malfunction information to the low speed CAN bus 250 but being mixed in with the multimedia information such that there is little disruption to playing backing the multimedia information. Further, processor 210 may also consider if the malfunction requires further processing such as notification to a repair facility or emergency services.

In another configuration, processing module 200 may leverage other buses such as the network interface 270 and/or wireless interface 280 that have more bandwidth for the data. For example, while the present implementation of the CAN bus would not support multimedia information with any substantial bit rate, the network interface 270 may be leveraged such that while CAN bus information is received via the high speed CAN bus 240, multimedia information is relayed separately via the network interface 270. This enables the processing module 200 to implement the previous example discussed involving relaying information regarding malfunctioning component without waiting for a future implementation of the CAN bus.

In another application, a processing module 124 may add further expansion modules 290A-N for further capabilities. For example, expansion modules 290A-N may contain a cellular telephony module. The cellular telephony module can comprise a GSM, CDMA,

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FDMA, or other digital cellular telephony transceiver and/or analog cellular telephony transceiver capable of supporting voice, multimedia and/or data transfers over a cellular network. Additionally, expansion modules 290A-N can include other cellular telephony modules from different providers or modes for other wireless communications protocols. As examples, the modules for other wireless communications protocols can include a Wi-Fi, BLUETOOTH TM, WiMax, infrared, or other wireless communications link. The cellular telephony module and the other wireless communications module can each be associated with a shared or a dedicated antenna. Further, expansion modules 290A-N may also include other wired bus modules that may connect to additional essential and nonessential vehicle components that may be installed or upgraded in the future. Processing modules 290A-N may contain functions critical to the operation of the vehicle such as engine control (ECU), transmission control (TCU), airbag control, various sensors, or other operational or safety related components. Further, processing modules 290 may take on more processing duties from a vehicle component 310 connected to bus 380. Thus, processing modules 124A-C benefits from redundancy in the case that one of modules malfunctions. Further, in a vehicle collision, it is expected that at least some of the processing modules may totally malfunction. In these cases, the remaining processing modules may take over limited or full processing duties of the malfunctioning vehicle components 310 or processing modules 390A-C.

In one configuration, processor 210, memory 220, storage 230, and the bus interfaces 240-280 may also be expansion modules similar to 290A-N. For example, processor 210 may be initially implemented as an OMAP 4 processor. In the future, OMAP 5 processors may be developed and processor 210 may be upgraded as a modular component.

In another application, processing module 124 is able to support additional vehicle hardware and/or software components that are added to the vehicle and is connected to processing module 124 via a bus. For example, vehicle 100 may have installed an additional entertainment system. In one configuration, processing module 124 can treat the additional component that is connected to processing module 200 via a bus as an expansion module 290A-N.

In another configuration, the additional hardware and/or software component may require further processing for it to work with processing module 124. For example, the bus

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protocol may need to be modified to support communicating with the additional component because the additional component has capabilities beyond the existing protocol (*i.e.*, an extension to an existing bus architecture). In one implementation, processing module 124 must first check to ensure that the additional component complies with OEM defined standards such that rogue components not recognized for a particular vehicle would not be supported.

Fig. 15 depicts the vehicle 100 in communication, via first, second, . . . networks 1504 a, b, . . ., with a remote node 1500, such as a computational device, *e.g.,* a server, mobile phone, tablet computer, laptop computer, personal computer, and the like, of the vehicle owner, law enforcement authority, insurance company, vehicle or parts manufacturer/vendor (*e.g.,* to provide vehicle diagnostics, maintenance alerts, vehicle or part recall notifications, and/or predictive analytics), a service provider (e.g., a convenience service provider such as a service to connect the vehicle operator with a dealer, a service to locate the vehicle, a service to provide vehicle information and/or feature assistance, an automotive navigation system service and a service to start a vehicle (OnStar™ being an example), a location-based service provider (e.g., traffic and/or weather reporting and/or adviser on gas, accommodations, navigation, parking assistance, and/or food), Internet content provider, software vendor, concierge service provider, a processing module of another vehicle, a roadside monitor, sign, beacon, and the like, to name a few.

The first, second, . . . networks1504a,b, . . . can be any wireless network, such as a radio or cellular network (e.g., CDMA, CDMA2000, AMPS, D-AMPS, TACS, ETACS, CSK, CDMAOne, GSM, EDGE, GPRS, HSCSD, UMTS, WCDMA, HSPA, WIMAX, WIMAX ADVANCED, LTE ADVANCED, or FDMA in accordance with the 1G, 2G, 2G transitional, 3G, 3G transitional, 4G or 5G cellular network standards), a Wi Fi network, a Bluetooth network, and the like.

The vehicle 100 includes a transceiver 1508 to send and receive signals over a selected one of the first, second, . . . networks 1504 a, b, . . ., a gateway/firewall 1512 to provide secure connectivity between the various components of the vehicle 100 and the first, second, . . . networks 1504a, b, . . ., primary and secondary processing modules 124a and b, memory/storage 220 or 230, on board sensors 1516 (discussed above with reference to Fig.

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1), input/output system(s) 1520 and associated media controller (discussed below) to manage and control the output presented by the input/output system(s) to the user, network controller 1528 to supervise local networks and nodes thereof and identify and, if possible, isolate malfunctioning networks and/or nodes to avoid detrimental impact on other networks and/or nodes of the vehicle 100, and external computational device(s) 1532 of occupants, such as wireless capable mobile phones, personal digital assistants, tablet computers, laptop computers, and the like. As will be appreciated, the logic for the gateway/firewall 1512, media controller 1524 and network controller 1528 can be contained within memory/storage 220, 330. The various components are connected by a bus, wireless network, or combination thereof (denoted by reference 1536).

The gateway/firewall can be any suitable module that can maintain secure connectivity. The need for the gateway/firewall is necessitated by the assignment of a wireless data network address, such as defined by IPv6 (Internet Protocol version 6), with the corresponding processing module 124. As will be appreciated, IPv6 addresses, as commonly displayed to users, consist of eight groups of four hexadecimal digits separated by colons, for example 2001:0db8:85a3:0042:0000:8a2e:0370:7334.

Each processing module 124 can have an independent network address or use a common network address. The gateway can be any module equipped for interfacing with another network that uses one or more different communication protocols. The firewall can use any technique to maintain security, including network address translation, network layer or packet filtration, application-layer firewall, and the like.

Fig. 16 depicts an exemplary input/output architecture for the vehicle 100. The architecture includes first, second, . . . nth input/output systems 1600a-n, the media controller 1524, display controller(s) 1604 to receive user input via the input/output system(s) and configure the output presented by the input/output system(s) to the user, audio controller(s) 1608 to control audio output to the user, and rule sets 1612 (stored in memory/storage 220, 230) to regulate corresponding features/functions of the vehicle 100, particularly the information and/or other output provided to each occupant by a respective input/output system. Generally, each of the multiple occupants has a separate and corresponding input/output system 1600. For example, each seat 148 can have a corresponding input/output

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system 1600.

As can be appreciated, the functionality disclosed herein may be affected by the geographical location and/or movement of a vehicle. A vehicle may cross a jurisdictional line where different laws exist that concern behavior in or about vehicles. These laws may be stored, as one or more rule set(s) 1612, in a database on-board and/or remotely accessible by the vehicle. A vehicle may use its location-based features to determine the appropriate applicable laws and enable or disable certain features to a user. For example, in the event that an individual crosses a state line where the local laws prohibit texting while driving, the vehicle may disable texting for the vehicle operator. This blocking would not prevent others in a vehicle from texting, and if allowed may provide for the operator to continue to send voice-activated texts, etc. Movement and location of the vehicle may be determined using location-based features as described herein. Moreover, to prevent false blocking of features, a specific user device position may be determined by sensors on the device, sensors in the vehicle, and/or combinations thereof. Although described with reference to blocking the texting ability of a specific user, it can be appreciated that the ability to surf the Internet, view photos, access streaming content, and other predetermined distractions may also be disabled.

For an additional external computational device 1532 that connects to processing module 124 via wireless interface 280, a secured connection protocol is needed. Unlike a wired bus connection, which is generally electronically confined to vehicle 100, a wireless connection via wireless interface 280 may be broadcast to other communication systems within the vicinity of vehicle 100. Thus, other wireless communication hardware, systems, and networks might be able to communicate with the communication system of the vehicle 100. This ability is potentially a security hazard.

To resolve this issue, wireless security rules should be used to ensure that only trusted devices, such as the external computational device 1532, communicate wirelessly, via the wireless interface 280, with the on board vehicle components through the wireless interface 280. Such security is provided by the gateway/firewall 1512 applying known security algorithms. In one implementation, wireless security may be implemented by the gateway/firewall 1512 using the current security setup in the 802.11 standard such as Wired

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Equivalent Privacy (WEP) or Wi-Fi Protected Access (WPA) or other security systems as known in the art. OEMs may also choose to implement security by using a propriety security system and/or wireless protocol to work with the in-vehicle wireless communication network.

Upgrading the vehicle 100 using different processing modules and/or other on board components, such as on board sensors 1516, can be done securely and seamlessly. A limit may be imposed on the place and manner in which an additional component communicating via the in-vehicle wireless network may be added to the vehicle 100. For example, installation of the additional component may only be available at an automobile shop or may even more limited to only in OEM approved shops or dealership to ensure that the newly installed component is fully tested to communicate only with vehicle 100 and not with other adjacent vehicles.

To facilitate this process, a handshake procedure may be used during the initial installation of the component. In one implementation, an OEM approved shop may have codes that will allow the new component to accept a link with vehicle 100. During this handshake procedure, vehicle 100 and its relevant components, such as processing module 200, may negotiate a protocol and/or security settings to communicate with the new component. For example, a symmetric or asymmetric code or key pair may be developed for encrypting communications. Alternatively, codes for WEP, WPA, or other security systems as known in the art may be developed for secured communication. After this initial handshake procedure, the new component and vehicle 100 will not have to do any further security setup in the future to prevent leaking the secured codes. In a further implementation, the new component is considered married or bound to vehicle 100 and may not communicate with any other vehicles unless unmarried or unbound when the component is removed at an approved shop. The dedication of the component to the vehicle may be done by using a unique code, such as a serial number of the component or vehicle, to enable a type of routine licensing compliance check when the car is activated. This can be done, for example, by comparing a unique code received by the installed component from another vehicle component or by the other vehicle component from the installed component. The licensing check is successful when the received code matches a code stored in memory of the receiving

device.

In another configuration, the additional, or installed, component may also communicate wirelessly with other vehicle components of vehicle 100 without needed processing module 200 to relay any communication. This may be done by sharing a vehicle encryption scheme and code for the wireless use. This may be useful for emergency purposes (*i.e.* the police may have a need to control certain components in a vehicle).

Operation of Arbitration and Health Check Modules 2000 and 2008

The processing modules 124 can use any of a variety of techniques to determine relative status and/or processing role of each. For example, under one technique a token is passed to signify the active or passive processing module or the processing module performing a specified set of processing operations. The processing module in possession of the token at any one time has the status and/or is responsible for the set of processing operations associated with the token. Rules may be used to arbitrate between the processing modules when each asserts ownership and/or non-ownership of the token.

By way of illustration, the processing modules 124 can determine which module is active and which is standby by employing the following rules. Upon detection of a selected stimulus (e.g., at vehicle start-up, processing module power-up, and/or periodically during vehicle or processing module operation), the health check module 2008 in each processing module 124 runs self-tests or queries the health check module 2008 other processing module 124 to perform selected computational tasks and provide the result. The processing modules 124 thus exchange messages with each other. Based on the results of its self-test (or queried tests), each processing module 124 decides whether it can become active. If so, the processing module 124 asserts an available signal to an arbitration module 2000, which propagates the signal to the other processing module 124. The arbitration module 2000, applying rules, chooses the active processing module 124 and forwards the token to the selected processing module 124, along with an interrupt. Rules may include a default selection, an ordered, random or pseudorandom periodic change in which processing module 124 is active and which is standby, which processing module 124 is healthier (or has a higher state of health score, the relative capabilities of the processing modules 124 (with the more capable processing module being active), and the like. The arbitration module 2000

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propagates a token non-ownership signal to the other processing module 124, along with an interrupt. Each processing module 124, in response, sets its status in memory to "primary" or "standby". If the active processing module 124 is removed, powered down, or voluntarily de-asserts ownership or possession of the token, the standby processing module immediately receives the available token 2004, along with an interrupt. It then assumes, and records in memory, the primary state.

In one variation, arbitration is performed by the arbitration module 2000 using a health check procedure 400 shown in Fig. 4.

Health check procedure 400 by the health check module 2008 is one way in which each processing modules 124A-C may self-check to determine a respective state of health (*e.g.,* if the processing modules remains fully functional or is only partially functional). Health check procedure 400 may be activated by each processing module 124 or one of the other processing modules 124 at a certain time interval or may be manually activated by user (*i.e.* a user directly activating the module or whenever the ignition is started). Health check procedure 400 may also be continuous running while the vehicle 300 is running to ensure the fastest response time in case a collision occurs resulting in an immediate loss of processing functions.

In step 410, the health check module 2008 in each processing module 124 performs a health check on its critical tasks, functions or operations of which losing one would result in a potentially critical loss to vehicle operation. As discussed previously, the critical tasks, functions or operations may include, for example (depending on the particular vehicle), monitoring, controlling, and/or operating a critical system. Health check 410 may involve procedures such as testing or monitoring that each critical function or operation is operating within predetermined or selected operating parameters and/or causing each critical component (safety equipment, selected sensors, engine, power steering, and/or brakes) to operate within selected operating parameters. In some configurations, a critical system, such as the ECU, may include both critical (*i.e.* engine failure) and non-critical tasks or functions (*i.e.* minor oil leak). Health check 410 may be configured to check only the critical tasks or functions.

In pass test check 411, if any malfunction to a critical task, function or operation is

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detected, the procedure activates hand-off procedure in step 440, which will be discussed with reference to Fig. 5. In one variation, a cumulative score is computed for all critical tasks, functions, and operations. The individual scores of the tasks, functions, and operations and cumulative score for the processing module is provided to the arbitration module 2000, which compares both sets of scores for the two processing modules 124 and selects and designates the healthier of the two processing modules 124 as the primary or active processing module 124.

If the processing module 124 passes test check 411, health check on non-critical tasks, functions or operations 420 is performed. Non-critical tasks, functions or operations may include, for example (depending on the particular vehicle) monitoring, controlling, and/or operating a non-critical system. In step 420, health check is done on various functions of the non-critical system, with each function having a score for passing the health check. The score may be adjusted according to the level non-criticality of the system. For example, an emissions control unit, while it may be non-critical to vehicle operation, may nonetheless be fairly important so as to comply with environmental regulations; therefore an emissions control unit could be weighted a comparatively high score for passing. In contrast, an entertainment system's failure may not be deemed to be important (except for operator/occupant inconvenience) and may be weighted with a relatively low score for passing.

In step 421, the score is tabulated for all non-critical systems and compared to see if it is above a certain threshold. If the score is below the threshold, a hand-off procedure is activated in step 450. For example, if emissions control by the processing module 124 is detected to be failing, causing or potentially causing harmful gas emissions to rise significantly above the legal limit, health check 421 may give a very low score to this non-critical system. Therefore, even if the entertainment system is working perfectly, health check may still give a score that is below the threshold and hand-off procedure will be activated.

In one configuration, the score weight for each non-critical system may be defined dynamically according to the location of the vehicle or other factors. For example, vehicle-use laws may affect how a non-critical system should be weighted (*i.e.* the stringency of

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emissions law, noise control law, or other laws in one area). Thus, vehicle -use laws may be provided by an organization, governmental entity, group, individual, and/or combinations thereof. The laws may be stored locally or retrieved from a remotely located storage. The vehicle-in-use laws may be statutes and/or regulations that are enforced by a government entity, such as a city, municipality, county, province, state, country, and the like. These laws may define vehicle, traffic, transportation, and/or safety rules associated with a given geographical region. An exemplary vehicle-in-use law governs texting, cellular phone use, and video availability to the operator when the car is in motion and the like). The laws may be updated from time to time to, among other things, account for changes in the laws. Thus, a first task, operation, or function may be critical in a first geographic location but noncritical in a different second geographic location. Likewise, a first task, operation, or function may be non-critical and have a first score (if operating properly) in a first geographic location but be non-critical and have a lower second score (if operating properly) in a second geographic location.

In step 430, if the score for non-critical systems is above the threshold, the active processing module 124 may be continued to be used as the active processor. In one variation, a cumulative score is computed for all non-critical tasks, functions, and operations. The individual scores of the tasks, functions, and operations and cumulative score for the processing module is provided to the arbitration module, which compares both sets of scores for the two processing modules and selects and designates the healthier of the two processing modules as the primary or active processing module.

The operation of a an arbitration module 2000 procedure 500 for a processing module will now be discussed with reference to Fig. 5.

The arbitration module 2000 can activate a token arbitration procedure 500 by steps 440 and 450 (Fig. 4) where either (a) the one or more critical tasks, functions, and operations has failed health check or (b) where one or more non-critical tasks, functions, and operations has not tabulated enough score to represent that the selected processing module is healthy enough for processing. Arbitration may be based on an absolute and/or relative state-of-health.

In step 510, a health check is performed, by a respective health check module 2008,

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on each processing module 124 and the pass/fail results and scoring information reported to the other processing modules 124 and/or the arbitration module 2000.

In step 514, the arbitration module 2000 selects a next processing module 124 (until all are considered) and proceeds to decision diamond 518.

In decision diamond 518, the arbitration module 2000 determines whether the selected processing module 124 passes the health test on set of critical tasks, functions, and operations. If so, the arbitration module 2000 proceeds to decision diamond 524.

In decision diamond 524, the arbitration module 2000 determines whether the selected processing module 124 passes the health test on set of non-critical tasks, functions, and operations. If so, the arbitration module 2000 proceeds to step 528.

In step 528, the arbitration module 2000 creates or updates data structures indicating that the selected processing module 124 is healthy and recording the selected processing module's respective scoring information. Optionally, the arbitration module 2000 can determine and record the relative state-of-health of the selected processing module 124 relative to other processing modules.

When the selected processing module 124 fails to pass one or more sets of critical tasks, functions, and operations (decision diamond 518) or non-critical tasks, functions, and operations (decision diamond 524), the arbitration module 2000 proceeds to step 532 and creates or updates data structures indicating that the selected processing module 124 is unhealthy and recording the selected processing module's respective scoring information. Optionally, the arbitration module 2000 can determine and record the relative state-of-health of the selected processing module 124 relative to other processing modules.

After performing steps 528 or 532, as appropriate, and when no processing module 124 remains to be analyzed, the arbitration module 2000 proceeds to decision diamond 536. In decision diamond 536, the arbitration module 2000 determines whether a healthy processing module 124 is available and, when available, designates, in step 540, the healthiest (based on absolute or relative state-of-health or both) processing module 124 as the active processing module 124 (or, in an active-active configuration, as being primarily responsible for handling critical tasks, functions, and operations).

When no healthy processing module 124 is available, the arbitration module 2000

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implements emergency measures, activates an alarm indicating that there is currently no available healthy processing module 124, and reports the alarm to the user and/or a remote node 1500, such as the vendor, manufacturer, servicing entity, roadside service, and the like.

The emergency measures implemented can vary by application. In one application, the emergency measure is to identify which processing module 124 is healthy to perform each set of critical and optionally non-critical tasks, functions and operations. If a healthy processing module exists for each set of critical and optionally non-critical tasks, functions and operations, the arbitration module 2000 assigns each set of critical and optionally non-critical tasks, functions, and operations to a processing module 124 having a sufficiently high health score (e.g., above a selected threshold) to perform the selected set of critical and optionally non-critical tasks, functions and operations. Where multiple processing modules are healthy enough to perform the selected set of critical and optionally non-critical tasks, functions and operations, the arbitration module 2000 can select the processing module having the highest health score for the selected set of critical and optionally non-critical tasks, functions and operations and/or having the highest available or unused processing units or resources to perform the selected set of critical and optionally non-critical tasks, functions and operations. Where no processing module 124 is healthy to perform a selected set of critical and optionally non-critical tasks, functions and operations, the selected set of critical and optionally non-critical tasks, functions, and operations can be performed by a remote node, via first, second, . . . network 1504a, b, . . . The remote node 1500 can be, for example, the vendor, manufacturer, servicing entity, roadside service, and the like. In one application, the critical and optionally non-critical tasks, functions, and operations are performed by a remote node 1500, via first, second, . . . network 1504a, b, . . ., rather than by a local or on board processing module 124.

An important aspect of an active-standby configuration can be how to maintain synchronicity between the active and standby processing modules to enable "hot" hand-offs, which can be particularly important for automotive applications, without loss of memory as to the current operational state of the vehicle and its component tasks, functions, and operations. One technique is to have the standby processing module 124 perform "shadow" processing in which it receives all input received by the active processing module 124 and

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performs the same processing tasks, functions, and operations as the active processing module 124. The assumption is that the two processing modules 124 have identical processing rates and therefore, at any one time, precisely duplicate the other as to processing state of completion as to any task, function, and/or operation. Due to varying processing loads on the processing modules, delays in signal transmissions, and other factors, this assumption may or may not be true. Another technique is to have the standby processing module 124 receive, and store in memory 220, time-stamped processing state information from the active processing module 124. The time-stamped processing state information relates to any processing task, function or operation currently being performed by the active processing module 124 and the results thereof. A potential issue with this approach is latency between the current and reported states of the active processing module 124. Another technique is a combination of the foregoing techniques. In this technique, the standby processing module 124 performs "shadow processing" but periodically checks its processing state information against the time-stamped processing state information received from the active processing module 124 and resets, alters, or updates its state information to reflect the received processing state information. Where a processing string is being performed correctly, it does not typically need to be revised to reflect a potentially earlier point reflected in the received and time stamped state information (which may be delayed). A reset to an earlier point in the processing string may be appropriate where the standby processing module 124 is too far ahead of the active processing module 124. The primary purpose of this combined approach is to confirm processing accuracy by the standby processing module 124 and to keep the standby processing module 124 from getting too far in advance of the active processing module 124 in processing information.

Operation of Remote Control Module 2040

Fig. 27 depicts a particular configuration of a remote node 1500. The remote node 1500, configured as a central repository for vehicle information, includes a server 2700 and associated database 2704. The remote node 1500 is in wireless communication, via network 1504, with first, second, . . . nth vehicles 100a-n. Currently, car drivers have the option to sign up for a service like General Motors OnStar® to remotely unlock cars, and provide other features such as remote start, tracking vehicles, and/or locking cars, etc.

In some embodiments, the present disclosure is directed to a central repository 2704 that can be used in conjunction with an individual vehicle. The central repository may be stored remotely (as shown) or on-board the vehicle. In the event that the central repository is stored remotely, it may be supervised by a law enforcement agency, or secure administrative agency. It is anticipated that strong security procedures may be employed to avoid hacker attacks, especially if stored at a remote central repository like the Department of Motor Vehicles (DMV), or other security-approved location. In the event that a vehicle is stolen, the true owner of a vehicle may prove ownership to the central repository and locate, lock, shutdown, etc. the vehicle.

In another embodiment, a police device may communicate to another vehicle to slowly reduce that vehicle's speed, shutdown the engine, cut power, etc. The communication can be securely effected using unique codes or other cryptographic techniques. Moreover, the communication may be through a server associated with a central repository. It is anticipated that the module controlling these functions is securely guarded and designed to prevent hacking attempts.

The operation of a system stand-by procedure 600 implemented by a remote control module 2040 and/or other component of a processing module 124 will now be discussed with reference to Fig. 6. Stand-by procedure 600 may be activated when the selected processing module 124 transitions from active to standby or standby to active or in response to a command from the operator or the remote node 1500. In one configuration, stand-by procedure 600 may also be activated manually by the driver of the vehicle or by another third party. For example, the driver or another third party may wish to disable certain aspects of vehicle 300 (*i.e.*, the driver may wish to disable certain functions, either critical or non-critical, of the vehicle to prevent another user of the vehicle, such as a valet, from accessing them, a third party, which may be the police or a theft prevention service such as On-Star, may wish to disable a stolen vehicle or a vehicle which is otherwise in violation of the law).

Manual activation of stand-by procedure 600 may be done locally or remotely. For local activation, an additional component in the form of a switch may be added and connected to the processing module via a bus or as a expansion module 290A-N. The driver may then manually activate the switch as needed.

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Most likely, manual activation of stand-by procedure 600 is done remotely (*i.e.* by the police, theft prevention service, or the owner of the vehicle at a remote location). As such, in one implementation, the corresponding processing module may be accessed via a non-physical bus such as by wireless interface 280. However, this is not the preferred method. As discussed previously, vehicle components communicating with a processing module wirelessly should only work with a secured scheme. The in-vehicle wireless network should not be accessible to third parties for further security purposes. A direct access to the in-vehicle wireless bus would defeat these principles. The wireless interface 280 may have a limited range such that connection and control can only be effected within the vicinity of the vehicle. Nevertheless, this implementation may be useful in cases where there is an emergency that is within the vicinity of the vehicle (*i.e.*, emergency road closure) that requires a third party such as the police to disable passing vehicles for safety reasons. In such cases, the authorized third party may activates codes that bypasses securities of the in-vehicle wireless network that is normally off-limit and directly access the processing module.

In another implementation, the vehicle may have a cellular or satellite communication component that has the capability of accessing an outside cellular or other communication network. Alternatively, this communication component may be installed as an additional expansion module 290A-N as discussed previously. Access to processing module is granted through a valid security verification within this component. Therefore, access to the processing module using this implementation does not require open access to the in-vehicle wireless bus.

In another configuration, stand-by procedure 600 may also be activated by a control system within the vehicle when some automated condition is met. For example, a leased or rental car company may wish to limit the geographical location where the vehicle can be driven. The vehicle may be automatically disabled if it is detected that the vehicle has left the allowed zone of operation (*i.e.* detected via a GPS).

In step 601, the method confirms if any critical subsystem would be unavailable. As discussed above, a critical subsystem may be unavailable because it did not pass the health check, because it was disabled by the driver or a third party, or because some automated condition has been met.

If critical subsystems are unavailable, step 610 performs general vehicle stand-by. In one configuration, general vehicle stand-by disables all components of the vehicle rendering the vehicle unusable. However, this may lead to safety issues where a sudden shut-down of the vehicle while operating on the road may be hazardous to both the driver of the vehicle and other vehicle on the road. In another configuration, general vehicle stand-by performs a shut-down of non-critical systems while placing a limit on critical system designed to bring the vehicle to stop. For example, a speed limiter may limit the speed of the vehicle to a minimal speed so that the vehicle can be bought to a safe stop subsequently but cannot operate effectively. After the vehicle is brought to a stop, general shut-down that disables all components of the vehicle may be performed.

In step 620, an alarm is activated to inform about the status of a general stand-by. Here, similar to step 540, an alarm is normally sent to at least components like display 144 or entertainment system 190 of vehicle 100 via a reliable bus such as the high speed CAN bus to inform the driver of the generally stand-by. In one implementation, an alarm may also be sent to a remote node 1500, such as a service or maintenance provider, *e.g.,* a nearby or a default car repair facility with possible system diagnosis information, emergency services if it is detected that a emergency affecting road safety has occurred, and/or to car manufacturers for data collection and other purposes..

If critical subsystems are not unavailable in step 601, the method further confirms if any non-critical subsystem is unavailable 602. If any of the non-critical subsystem is indeed unavailable, the method performs specific stand-by on the specific subsystem 630.

Specific stand-by 630 involves performing stand-by only for a specific non-critical subsystem. For example, if entertainment system 190 malfunctions, entertainment system 190 can be safely turned off without affecting the operation of the vehicle. However, some non-critical functions may be affected such as an alarm function announcing certain information that is pre-disposed to be announced by entertainment system 190. In this case, specific stand-by 630 may include rerouting the information to display 144, perhaps with the information to be presented in abbreviated form to ensure the information will be presentable on display 144. Specific stand-by 630 for entertainment system 190 may also involve rerouting information to other perceptible methods such as by light or sound.

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In step 640, the method activates an alarm to information driver and third-party services of specific subsystem stand-by similar to step 620.

Fig. 9 depicts a method of operation of the remote control module 2040. There are a number of examples of operation by a remote control module 2040.

In one example, a police officer or other law enforcement authority and/or rule trap sensor can "ping" an automobile for information relating to its speed and driving conditions. By comparing this received data from the automobile to known data relating to stop signs, speed limits, and the like, a decision can be made on whether the law has been broken. For example, the sensor itself may not necessarily determine the speed of a vehicle. The sensor asks the vehicle to respond to the sensor with the vehicle's speed and possibly other information. Therefore, the speed detection is achieved through responding to a sensor's question and the vehicle's answer. It is anticipated that a specific sensor may use alternate detection methods to verify the accuracy of a received signal. For instance, if a vehicle is asked to respond with a current speed value, and does so, the sensor may send a radar signal to verify the response. If the response does not match the verification signal, a note is made of the anomaly and the data is recorded. This data may be used by law enforcement to later identify vehicles that are malfunctioning and/or have been compromised. The identity of the car, including serial number, owner identity (e.g., name, home address, contact information, driver's license number, insurance information (e.g., name and address of insurance company, owner's insurance policy identification, and coverage limits), and the like), and/or licensing information (e.g., license plate number) can be provided by the vehicle to the requestor.

In another example, a law enforcement authority, owner, or other privileged entity may request a critical or non-critical task, function or operation to be disabled or behave in a selected manner. For instance, a law enforcement officer can cause the vehicle to decelerate in a high speed pursuit or, for a high speed pursuit or stolen car, can disable the engine.

In another example, a remote node 1500, such as a law enforcement authority, an insurance company, an intelligent sign or traffic signal, a roadside monitor, or the owner himself or herself requests historic or current vehicle operating information, such as speed, and/or information received by the vehicle from an external source, such as a stop light,

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speed limit sign, yield or stop sign, and the like. This information can be compared to identify poor driving practices and/or breaking of the law. It can also be used in accident reconstruction to determine who is at fault in an automobile accident where vehicle operators frequently dishonestly represent who is at fault. Currently, responsible drivers pay inflated insurance premiums because the insurance industry cannot guaranty a particular driver's adherence to the law or general driving behavior. To address this concern, current insurance companies may allow a driver to install a device in a vehicle to randomly monitor behavior. This device can only monitor certain functions and requires the installation of a device separate from the vehicle's ecosystem. The present disclosure is directed to using various data compiled by the system to analyze factors contributing to an individual's driving behavior and/or habits. In the event that an individual wishes to receive better insurance rates for responsible driving, a lower quantity of driving, or other good driving indicators, the driver may agree to provide insurance tracking information. The insurance tracking system may consider GPS and other location-based information (to compare actual speed with speed limit data), g-force sensors (to detect rapid acceleration, hard turns, etc.), perimeter sensors (to detect close-calls, inattention while changing lanes, etc), in order to determine conformance with the good-driving terms established by an insurance company. Because the device may be integrated, and/or associated, with the vehicle's ecosystem total behavioral data may be recorded and sent in real-time to a receiving module. Moreover, the system may detect the user and provide accurate information for each user of a vehicle.

Referring to Fig. 9, the remote control module 2040, in step 900, receives a request to command a vehicle task, function and/or operation and/or to transmit specified information to the requestor.

In step 904, the remote control module 2040 attempts to authenticate the requestor. User authentication is a way of identifying a user and verifying that the user is allowed to access some restricted service. Authentication can be performed by, for example, by encrypted symmetric or asymmetric key exchange, public and private key cryptography, a secure remote password, multi-factor authentication (e.g., three major factors include verification by something a user knows (such as a password or PIN), something the user has (such as a smart card, ATM card, or a security token), and something the user is (such as the

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use of biometrics, such as a fingerprint or retina scan)), time-based authentication, a unique digital identity, closed-loop authentication, access control service, and the like.

Control then passes to decision diamond 908 where the remote control module determines whether authentication was successful. When authentication is successful, the remote control module, in decision diamond 912, determines whether the requestor is privileged to make the request. In other words, a first requestor is entitled to a first set of privileges with respect to access to vehicle information and/or control of vehicle tasks, functions, and operations while a second requestor is entitled to a different second set of privileges with respect to access to vehicle information and/or control of vehicle tasks, functions, and operations. A law enforcement entity or vehicle owner, for example, will generally have a highest level of privilege (enabling broad access to vehicle information and/or control of vehicle tasks, functions, and operations) while an insurance company or servicing entity will not have the highest level of privilege.

When the requestor is entitled to make the request, the remote control module, in step 916, executes or causes execution of the request in accordance with rules governing what the privilege accorded the requestor, which may override operator and/or other occupant commands.

When the requestor is not entitled to make the request, the remote control module, in step 920, ignores the request and logs in memory 220 the information surrounding the request, *e.g.,* the identity of the requestor, the time stamp of the request, and the request itself.

Operation of Computational Module Selector 2052

The operation of a processor off-load procedure 700 by computational module selector 2052 one or more processing module(s) will now be discussed with reference to Fig. 7. This operation is particularly beneficial in an active-active configuration but may be used in an active-standby configuration. As discussed with respect to vehicle 300 of Fig. 3, some configurations of expansion modules 290A-C may require processor off-load to share processing functions of tasks among a number of expansion modules in a common host processing module 124 or across different processing modules 124. For example, a first expansion module 290A and/or host processing module 124 may be specialized for critical

functions while a different second expansion module 290B and/or host processing module 124 is specialized for non-critical functions. In an event where the first expansion module 290A and/or its host processing module 124 loses some processing power, the first expansion module 290A and/or its host processing module 124 may be able to off-load some critical function to second expansion module 290B and/or its host processing module 124.

In step 701, the method continuously checks if a next processing module, expansion module, and/or external computational device(s) 1532 (in wireless communication with the network controller 1528 via the gateway/firewall 1512) is available with excess processing power. If a next processing module, expansion module, and/or external computational device(s) 1532 is not available, the method will check at some time interval later to see if a new processing module, expansion module, and/or external computational device(s) 1532 would have a change in a number of available and/or unavailable processing power units and/or bandwidth. Other stimuli for this step 701 include a user request to initiate execution of an application, notification of a processing resource having unused bandwidth below a selected threshold, notification of a processing resource having used bandwidth above a selected threshold, a power level of a processing resource falling below a selected threshold, notification of a processing resource having an operational error, malfunction, or outage, and the like.

If a next processing module, expansion module, and/or external computational device(s) 1532 is available, the method confirms with the next processing module, expansion module, and/or external computational device(s) 1532 on its available processing power units and/or bandwidth for a task 710. Other factors considered in determining whether a selected processing module, expansion module, and/or external computational device is available include not only the processing resources available but also the application and operating system requirements as compared to the capabilities of the selected processing module, expansion module, and/or external computational device and power level in the selected processing module, expansion module, and/or external computational device.

In one configuration, processing module, expansion module, and/or external computational device(s) 1532 may be distinguished depending on the type of processing needed. For example, a critical function might not be suitable for a processing module that deals only

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with non-critical functions and vice versa due to safety, security, or other concerns. In other configurations, a critical function might look for a processing module that is tasked with a disproportionally high non-critical function load to balance the processing load.

If the selected processing module, expansion module, and/or external computational device(s) 1532 is available to process a given task, function or operation 710, the task is off-loaded to the selected processing module, expansion module, and/or external computational device(s) 1532.

If the selected processing module, expansion module, and/or external computational device(s) 1532 is not available to process a given task, function or operation 710, the procedure continues to check if any other processing module, expansion module, and/or external computational device(s) 1532 is available 702. If there is a different processing module, expansion module, and/or external computational device(s) 1532 available, the method returns to step 701.

If there is no other processing module, expansion module, and/or external computational device(s) 1532 available, the method informs the active processing module, expansion module, and/or external computational device(s) 1532 of no available offload capacity 730. In one configuration, the active processing module may decide to drop the task that it is unable to handle. The active processing module, expansion module, and/or external computational device(s) 1532 may also decide to return to step 701 to continue to check for a next available processing module, expansion module, and/or external computational device(s) 1532.

A further set of operations for the computational module selector 2052 will now be discussed with reference to Fig. 23. This set of operations identifies, for a selected computational module, such as an expansion module, software application, or other computational module, which processing modules or external computational device(s) 1532 contain the selected computational module for purposes of computational module selection. While the prior flow chart depicts a method to balance processing load amongst plural processing devices, the present flow chart selects which duplicative computational module should perform a request by a user.

In step 2300, the computational module selector 2052 detects a stimulus. Exemplary

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stimuli include a user or operator request to initiate a computational module and/or perform a selected task, function, or operation, an interrupt based on a passage of a predetermined time, installation of a computational module, a request by a different user to use a platform currently executing the computational module, notification of a processing resource having unused bandwidth below a selected threshold, notification of a processing resource having used bandwidth above a selected threshold, a power level of a processing resource falling below a selected threshold, notification of a processing resource having an operational error, malfunction, or outage, and the like.

In step 2304, the computational module selector 2052, in step 2308, determines duplicated computational modules and the host processing platform(s) therefor. Host processing platforms can include a processing module, expansion module, and/or external computational device(s) 1532. Duplication may be for a specific computational device (e.g., from a common vendor and commonly named) or for a common type of computational device. For example, duplication may be determined for the differing versions of automotive navigation system applications GPS Drive™ by MotionX™, Garmin GPS™, Magellan GPS™, Tomtom GPS™, and other SPS systems or for all navigation applications generally regardless of vendor, application identity, or version.

In step 2312, the computational module selector 2052 selects a computational module and platform to execute each duplicated computational module. For example, if an occupant requests, by an input/output system of the vehicle, a game or multimedia application and if different versions of the game or multimedia application are on a processing module 124 and external computational device(s) 1532, the computational module selector 2052 can select the most recent version of the game or multimedia application and host platform containing same, regardless of whether the host platform is a processing module or external computational device 1532 currently in communication with a processing module and by what device, whether an input/output system or user interface of the external computational device 1532 receiving the request. If the request were to be received by an input/output system 1600 to initiate a game and the most recent version of the game were located on a processing module, the processing module would be selected to execute the game and output would be provided to an occupant by the corresponding input/output system 1600. If the

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request were to be received by an input/output system 1600 to initiate a game and the most recent version of the game were located on an external computational device 1532, the external computational device 1532 would be selected to execute the game and output would be provided to processing module for presentation to an occupant by the occupant's input/output system 1600. If the request were to be received by an external computational device 1532 to initiate a game and the most recent version of the game were located on a processing module, the processing module would be selected to execute the game and output would be provided to an occupant by the external computational device 1532. If the request were to be received by external computational device 1532 to initiate a game and the most recent version of the game were located on the external computational device 1532, the external computational device 1532 would be selected to execute the game and output would be provided to processing module for presentation to an occupant by the external computational device 1532.

In decision diamond 2316, the processing module, or external computational device 1532, by the user interface receiving the stimulus, whether an input/output system or the user interface of the external computational device 1532, queries the user whether or not the older versions of the computational module should be updated to the newer locally available or newest remotely available version.

If no or a negative response is received, the computational module selector 2352 proceeds to decision diamond 2324.

If a positive response is received, the computational module selector 2052, in step 2320, requests the host platform to upgrade the computational module.

In decision diamond 2324, the computational module selector 2052 determines whether the selected platform is currently available to execute the computational module. The selected platform may currently be executing other computational modules and have insufficient available processing resources for execution. The computational module selector 2052, in that event, would attempt to off load some of the processing to another platform to free up sufficient processing resources for execution. In other words, the computational module selector 2052 would perform processing load balancing to more optimally use processing resources. A user may currently be using the selected platform, such as engaged

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in a call if the selected platform is a cellular phone or watching multimedia content. The computational module selector 2052 would determine if the platform can request the user for permission to use the platform for processing the computational module. When the user is on a call, such a request cannot be made. If a request can be made, the user is requested. The platform is only deemed to be available when the user provides input indicating availability.

When the platform is not available, the computational module selector 2052 in step 2328 selects a next available platform even though the platform may contain an older version of the computational module.

When the selected module is currently available or when the computational module selector 2052 selects a different platform in step 2328, the computational module selector in step 2328, initiates execution, by the selected platform, of the computational module.

Operation of Network Controller 1528

Fig. 24 depicts another operation of the network controller 1528. As noted, security for cyber attacks is important for an Internet-enabled vehicle. Drivers are accessing data from Internet service providers via smart phone, tablet computer, and/or on board or embedded technologies as well as utilizing hands-free communication technology to send and receive phone calls and text messages. Automotive manufacturers are sending and receiving data based on electronic sensor readings and event data recording. Due to the potentially dire consequences of a security breach on on board processing module operation, rigorous security measures should be deployed. While the vehicular network can employ passive techniques, such as configuration of access restrictions in access points (such as encryption, checks on MAC addresses, disabling ESSID broadcasting, isolation of the vehicular network by the firewall and gateway, hiding the SSID (Service Set Identifier), MAC ID filtering (allowing access from know, pre-approved MAC addresses, static IP addressing , IEEE 802.11, 802.11i, and/or 802.1x security, use of the wired equivalent privacy encryption, TKIP, EAP, LEAP, PEAP, WPAv 1, and/or WPAv2 protocols, end-to-end encryption (in one or more of 2, 3, and/or application layer), and RF shielding substantially surrounding the interior of the vehicle (to attenuate signals and prevent wireless signals from propagating outside the vehicle), active techniques may also be employed. Communications with external computational devices 1532 can be channeled through the

gateway/firewall 1512.

One active technique is depicted in Fig. 24.

In step 2400, the network controller 1528 detects a stimulus, such as an instance of a virus, malware, unauthorized access, misuse, modification, denial-of-service attack, spoofing, man-in-the-middle attack, ARP poisoning, smurf attack, buffer overflow, heap overflow, format string attack, SQL injection, identity theft (or MAC spoofing), network injection, caffe latte attack, or denial of a computer network and/or network-accessible resource. The stimulus may be a warning signal received by the network controller 1528 from the gateway/firewall 1512, a honeypot (which is a decoy network-assistant resource to provide network surveillance and early-warning tool, a network node, mapping a template corresponding to a specific attack type to received signals, a network probe, and the like.

In step 2404, the network controller 1528 attempts to confirm the instance of potential security breach. This can be done by reviewing historical behavior, such as shown by communication logs (containing signal description (e.g., type, source, destination, protocol, and payload type) and signal receipt timestamps) not only for the current node but also for other nodes and comparing the behavior to templates characteristic of differing types of attacks and/or applying rules to the historical behavior. The security breach details, signal description (e.g., type, source, destination, protocol, and payload type) and signal receipt timestamps), are recorded in memory 220 and firewall settings, including whitelists and blacklists, are updated.

In decision diamond 2408, the network controller 1528 determines whether or not the computational devices impacted or potentially impacted by the security breach can be isolated from other vehicular network components or whether the active processing module can be isolated from other non-critical computational components. For an external computational device 1532, such as a tablet computer, smart phone, laptop computer, personal digital assistant, and the like, isolation is possible simply by denying vehicular wireless network access or access, by a component of the vehicular wireless network, to the external computational device 1532. For components in the vehicular wireless network, communications to and from the affected components, which normally do not pass through the gateway/firewall, can be redirected through and filtered by the gateway/firewall or,

depending on the criticality of the affected component(s), such communications can be blocked. For the active processing module 124, non-critical communications to and from other non-critical computational components, which normally do not pass through the gateway/firewall, can be redirected through and filtered by the gateway/firewall before being provided to the active processing module or, depending on the criticality of the communication(s), such communications can be blocked. Critical communications, or communications with critical components, typically cannot be delayed by firewall processing. In one variation, a critical communication security mechanism is activated when a security breach is detected. The security mechanism can include, for example, one or more of encrypting access restrictions in critical components and the active processing module (such as encryption, checks on MAC addresses, disabling ESSID broadcasting, hiding the SSID (Service Set Identifier), MAC ID filtering (allowing access from know, pre-approved MAC addresses, static IP addressing , IEEE 802.11, 802.11i, and/or 802.1x security, use of the wired equivalent privacy encryption, TKIP, EAP, LEAP, PEAP, WPAv 1, and/or WPAv2 protocols, and end-to-end encryption (in one or more of 2, 3, and/or application layer).

When isolation is possible, the network controller 1528, in step 2412, isolates the affected computational device(s) from further communications with or filters communications with the active processing module 124 or the active processing module from further communications with the affected computational component(s) and alerts the user and/or a remote node 1500 of the security breach and details regarding it.

When isolation is not possible, the network controller 1528 alerts the user and/or a remote node 1500 of the security breach and details regarding it. The critical security mechanism may be activated to protect the critical components and active processing module.

Operation of Network Selector 2036

The operation of the network selector 2036, a subcomponent of the network controller 1528, will now be discussed with reference to Figs. 8 and 10-11.

Referring to Fig. 8, an active processing module 124, in step 800, receives a signal to transmit to a separate vehicle component. The signal can be, for example, from any on board

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computational component, including an on board sensor 1516 (including those discussed above), a critical or non-critical system controller 2012 or 2016, an on board sensor monitor 2020, the displayed object movement module 2024, the diagnostic module 2028, the media filter 2032, the remote control module 2040, the installation supervisor 2044, the multimedia control module 2048, the computational module selector 2052, the media controller 1524, the gateway/firewall 1512, another processing module 124, the transceiver 1508, an input/output system 1520, a network controller 1528, and/or an external computational device 1532.

The network selector 2036, in step 804, selects a network compatible with the type and/or required format of the signal, such as one or more of local wired network 808, local wireless network 812, and/or the internet 816, to deliver the signal to a selected local or remote endpoint, including those set forth in the prior paragraph. The selection is based on one or more factors, including a type, urgency, importance and/or requirements of the signal (e.g., whether the signal contains an urgent flag or other urgency indicator, a source of the signal (such as from an on-board sensor or sensor monitor, a critical component, a non-critical component, and the like), a type of signal payload (such as whether the signal contains multimedia), transmission and/or bandwidth requirements for the signal (e.g., requisite maximum latency, packet loss, jitter, and/or transmission rate, transport protocol, quality of service, and the like)), an operational status (e.g., operational or nonoperational) of each of the compatible networks, an operational status of an intermediate node on the compatible networks, a signal/noise ratio over each of the compatible networks, available and/or unavailable bandwidth for each of the compatible networks, current compatible network performance parameters (e.g., packet drop, latency, jitter, throughput, quality of service, and the like), and other factors influencing signal quality, reliability, and/or transmission speed.

Generally, the network selector 2036 determines the type, urgency, importance and/or requirements of the signal and one or more of the above parameters for each of the compatible networks, compares the signal parameters with the compatible network parameters and selects the compatible network able to currently best satisfy the requisite signal parameters. For example, a signal from a critical component generally is transmitted by a local wired network 808, such as a bus, due to the high signal quality, reliability and/or

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transmission speed required for the signal. A multimedia signal would generally not be transmitted by a local wired network as it is not commonly incompatible with the signal payload. Such a signal would more typically be transmitted by a local wireless network 812 (e.g., by Bluetooth™ or WiFi™ or a "hot spot") or, if the signal recipient (whether or not an on board component or remote node) has a corresponding IP address, by the internet 816.

Once the compatible network is selected for signal transmission, the network selector 2036, in step 820, configures or causes to be configured the signal in accordance with the selected network's transmission protocol. For example, when the signal is to be transmitted over a local wireless network 812, the signal payload and/or signal itself would generally be packaged (such as by a protocol stack) in a header and trailer in accordance with an appropriate one of the WiFi™ or Bluetooth™ protocols. By way of further example, when the signal is to be transmitted over the Internet 816, the signal payload and/or signal itself would generally be packaged (such as by a protocol stack) in a header and trailer in accordance with TCP/IP suite of protocols.

The properly configured or formatted signal is then transmitted over the selected compatible network.

A further operation of the network selector 2036 will now be discussed with reference to Fig. 10. In this operation, the network selector 2036 receives a media stream from a remote node 1500, such as a radio or television station or other Web site, and selects an intermediate local network to carry the media stream to an input/output system for presentation to an occupant of the vehicle.

In step 1000, a processing module 124 receives the media stream from the remote node 1500. The media stream packets contain destination information associating the media stream with one or more input/output systems of the vehicle.

In step 1004, the network selector 2036 determines the transmission mode and/or network based on various parameters, including network status, intermediate node status, signal/nose ratio of the network, type and/or source of media, available and/or unavailable bandwidth, network performance parameters (e.g., availability, packet drop, latency, jitter, throughput, etc.), quality of service, and the like. The network selector 2036 selects which of the local on board wireless network 812 (e.g., generated by a on board or portable component

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within the vehicle), local wired network 808, and nearby independent wireless network 1008 (e.g., generated by a component external to the vehicle) is to carry the media to the destination input/output system(s) of the vehicle.

In step 1012, the media is provided, over the selected network, to the destination input/output system(s).

Operation of Media Controller 1524

A further operation of the network selector 2036 and operations of the media controller 1524 will now be discussed with reference to Fig. 11. In this operation, the network selector 2036 receives a signal, which typically includes a media payload, from a local or remote node and selects an intermediate local compatible network to carry the media stream to an input/output system for presentation to an occupant of the vehicle. Depending on an input/output system mode, the signal is directed by the media controller 1524 only to a subset or to all of the input/output systems. In a dependent mode, common content is provided synchronously to each of the input/output systems while in an independent mode different content is provided to different ones of the input/output systems. While each occupant controls his or her input/output system in independent mode, the operator controls all input/output systems in the dependent mode. This is particularly beneficial for young children as occupants. The operator typically selects which of the modes is in effect in the vehicle at any one time.

In step 1100, the processing module 124 receives a signal for graphical presentation to one or more occupants. The signal typically comprises media as a payload.

In step 1104, the network selector 2036 determines the transmission mode and/or compatible network based on various parameters, including network status, intermediate node status, signal/nose ratio of the network, type and/or source of media, available and/or unavailable bandwidth, network performance parameters (e.g., availability, packet drop, latency, jitter, throughput, etc.), quality of service, and the like. The network selector 2036 selects which of the local on board wireless network 812 (e.g., generated by a on board or portable component within the vehicle), local wired network 808, and Internet 818 is to carry the media to the destination input/output system(s) of the vehicle.

In step 1108, the media controller 1524 determines which of the input/output systems

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are to receive the media. There are a number of factors that can influence this decision. The first is whether the input/output systems are in dependent or independent mode. The second is whether an applicable law, whether federal, state, provincial, or local, limits the operation of one or more of the input/output systems. The satellite positioning system receiver on board the vehicle can provide, at any time, the precise vehicle position to a processing module. The processing module can use the position coordinates to determine a set of applicable laws and, from the set of applicable laws, determine restrictions on input/output systems of vehicles within that jurisdiction. Restrictions may also be configured by the operator of the vehicle. These legal and operator restrictions are collectively referred to as rule set(s) 1612. For example, exemplary restrictions, or rule sets 1612, include not providing videos to the operator when the vehicle is in gear or moving, banning texting in the vehicle when the vehicle is in gear or moving, and banning cellular calls when the vehicle is in gear or moving. Restrictions may, alternatively, require the media to be presented to the operator and/or occupant in a specific manner. For example, the audio channel of a video may be permitted to be played in the absence of the video channel of the video. A cellular call may be permitted using a hands-free mode but not using a handheld phone.

In step 1112, the media controller 1524 configures and transmits the signal in accordance with the selected network and the restrictions, if any, determined in step 1108. Configuration refers not only to formatting and including the addresses of the input/output systems to receive the signal but also to changing the media payload, such as, for instance, removing video content while leaving audio content.

Upon receipt, the signal is processed by the display and/or audio controllers 1604 and 1608 and presented, by the recipient input/output system and over the corresponding input/output system to the occupant.

Fig. 17 depicts another operation of the media controller 1524.

In step 1700, the media controller 1524 detects a stimulus, such as an occupant request to change the operational mode of an input/output system.

In step 1704, the media controller 1524 determines a current operational mode of the input/output system associated with each of the occupants (e.g., independent or dependent operation) and whether the occupant has authority or is privileged to request the change. The

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mode is changed only when the occupant is authorized or privileged to make the change.

In step 1708, the media controller 1524 determines when the requestor is authorized or privileged to request the operational mode change, the input/output system preferences of each of the occupant user(s) including the requestor.

In step 1712, the media controller 1524 determines when the requestor is authorized or privileged to request the operational mode change, the pertinent rule set(s) 1612. As noted, the rule set(s) 1612 include rules set by the owner or operator of the vehicle, manufacturer of the vehicle, and as a matter of applicable law.

In step 1716, the media controller 1524 determines when the requestor is authorized or privileged to request the operational mode change, a current state of each of the input/output system(s). The current state includes not only the on/off status and settings but also the content being displayed and operations currently being performed by the occupant for each of the input/output systems.

In step 1720, the media controller 1524 determines when the requestor is authorized or privileged to request the operational mode change, a current display configuration of each of the input/output systems.

In step 1724 and when the requestor is authorized or privileged to request the operational mode change, the media controller 1524 configures or reconfigures each of the input/output systems and the corresponding displays as required by the new operational mode. For example, when the current operational mode is independent and the new operational mode is dependent, the media controller 1524 blocks content currently being provided to each of the subservient input/output displays in favor of providing to each of the subservient input/output displays the content provided to the master input/output display controlled by the requestor or to display content selected by the requestor. When the current operational mode is dependent and the new operational mode is independent, the media controller 1524 continues to provide the content formerly provided to all of the input/output systems to the requestor's input/output system but returns each of the other input/output systems to a default display. From the default display, the respective user can select customized content, which may be the same as or different from the content being provided to the requestor's input/output system.

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Fig. 18 depicts another operation of the media controller1524.

In step 1800, the media controller 1524 receives a signal from a local or remote node 1500. The signal includes, for example, media from a web site or server or communication from a third party.

In optional step 1804, the media controller 1524 unpacketizes the signal and analyzes the payload. This is done, for example, when the destination for the signal and/or type of payload is not clear from the packet header and/or trailer.

In step 1808, the media controller 1524 selects an input/output system to receive the packet payload. This can be based, for example, on the destination information in the header and/or results of the analysis of optional step 1804.

In step 1812, the media controller 1524 determines the applicable rule set 1612 governing the destination input/output system and/or payload type or content.

In step 1816, the media controller 1524 determines a current input/output system configuration(s). The current configuration includes not only settings and capabilities but also whether the input/output system is in the dependent or independent operational mode.

Based on the above information, the media controller 1524 determines whether the payload can be provided to each of the destination input/output systems and, if so, generates a command incorporating the payload and including commands to the input/output system on how to render and display the content. As noted, the payload cannot be provided to a subservient input/output system when in the dependent operational mode and the content differs from that provided to the master input/output system. It cannot be provided when an applicable rule set 1612 prohibits such presentation. It may need to be filtered to remove some of the payload to comply with the applicable rule set 1612.

In step 1824, the command is forwarded to each of the destination input/output systems.

Fig. 19 depicts another operation of the media controller 1524.

In step 1900, the media controller 1524 determines a location of each external computational device 1532 by a suitable technique. In one example, a signal receiver or transceiver or other connectivity access point, such as a wireless access point, WiFi™ antenna, and the like is placed at each input/output system and/or near each occupant seating

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location and/or at the operator's seat. The network interface on the network controller can force external computational devices to connect via a specified communication protocol, such as by Bluetooth™ or WiFi™.

In step 1904, the media controller 1524 determines a spatial location of each of the external computational devices relative to one or more selected connectivity access points. Continuing the example of the prior paragraph, the media controller 1524 measures, at each connectivity access point, a signal strength for each detected external computational device and, using the measured signal strengths and a suitable algorithm such as triangulation, determines a spatial location of each external computational device and, in step 1908 for each located external computational device, a nearest input/output system and/or occupant seat.

In step 1912, the media controller 1524 determines a pertinent rule set 1612 for the determined location of each external computational device.

In decision diamond 1916, the media controller 1524, based on the pertinent rule set 1612, determines whether or not to accept connectivity access by each of the external computational devices or what limitations to place on such access. In the latter case, specific tasks, functions, and/or operations may be permitted by the pertinent rule set but not others. For example, a cellular phone may be forced into hands free calling mode or prevented from texting or using an instant messaging application or protocol when located at the operator's seat. The rule set 1612 may be configured as a table listing, by vehicle location, an applicable set of legal restrictions and/or permissions and the restrictions or permissions on specific tasks, functions, and/or operations.

When unlimited or limited access is permitted by the rule set 1612, such access is provided by the media controller.

In decision diamond 1920, the media controller 1524 monitors each of the external computational devices for a change in spatial location. In other words, the media controller detects movement of any external computational device from a first connectivity access point or input/output system or seat governed by a first rule set to a second different connectivity access point or input/output system or seat governed by a different rule set. This is so because each connectivity access point or input/output system or seat has a corresponding rule set. When no change detected, decision diamond 1920 is repeated by the media

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controller substantially continuously or periodically.

When limited or unlimited access is not accepted (decision diamond 1916) or a location change is detected (decision diamond 1920), the media controller returns to step 1904.

Fig. 25 depicts a further operation of the media controller 1524. Currently, a particular vehicle radio may have access to XM, AM, FM, and in some cases "streaming audio" capabilities through separate sources (remote node(s) 1500). However, it is necessary to change the input on a console to receive the information and music from a specific source.

It is an aspect of the present disclosure to provide a console capable of compiling and playing music and multimedia information (such as a streaming video) by a general and/or specific category. It is anticipated that the console may adaptively select the source providing the content according to specific rules, such as music type. For example, the console may select the strongest signal, or highest quality of channel. Furthermore the data is collected regardless of the source and represented by icons (independent of source) on the console. These icons may be selected by the user to access content. In one configuration, the icon corresponds to a type of music. The music is band and/or communication mode independent. For example, a "classical music" icon indexes and/or links to all classical music channels, whether AM, FM, streaming, XM, etc.

In some cases, a user may be listening to one station/source while media information is being received and cached from another station/source. In the event that the first signal is lost, the cached media signal or stream may play. Additionally, the system may adaptively "signal surf," for a given category, to determine the best channel to receive the highest or best quality signal (e.g., S/N ratio, stream or radio wave). Moreover, the system may be able to determine that a reception limit is being neared (by pilot signal back or satellite positioning system receiver location) and may push delayed broadcast media information or other content to a vehicle computer to be cached and listened to after coverage is lost.

In step 2500, the media controller 1524 detects a stimulus indicating that caching of media content is to be performed. This may be a request by a user, a media signal falling below a specified signal-noise ratio, the vehicle nearing an estimated broadcast limit or range

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of the media source (or remote node 1500), a request by a remote node 1500 (or signal source) to forward content to the vehicle for caching for later presentation to the user, a user action requiring the media not to be presented by the vehicle (e.g., the vehicle operation moves from being "parked" to being in gear (or in "drive" or "reverse"), and the like. As will be appreciated, many jurisdiction's laws prohibit displaying media to a driver while a vehicle is in operation.

In decision diamond 2504, the media controller 1524 determines whether or not to cache media. Depending on the stimulus, rules configured by the user or default rules, may cause the stimulus to be ignored. For example, when the request is from a remote node 1500 the media controller 1524 may have a rule denying such SPAM-like requests, may determine that insufficient memory resources are available to cache the content, may determine that the media content or remote node 1500 constitutes a potential security breach, or may have the remote node 1500 address, identity, or other identifier on a blacklist. When the media is a video, the video may be cached for one input/output system, name that of the driver, but not for another input/output system, namely that of a passenger.

In step 2508, when caching is to be performed the media controller 1524 commences caching the streaming media for delayed presentation to the user. As will be appreciated, the media controller 1524 can continue normal buffering of streaming media packets.

In step 2512, when caching is not to be performed, the media controller 1524 can continue normal buffering of streaming media packets but does not perform media caching.

Fig. 26 depicts a further operation of the media controller 1524. The operation involves conforming media presentation, by input/output system, in a manner comply with a pertinent rule set 1612. For example, instant messages, RSS feeds, Twitter messages, can, in response to a vehicle moving from a parked (non-operational) to an operational (in motion) state, cease displaying this content to the driver and, instead, audibly present the content and message source identifier to the driver, such as reading the source name or address and RSS feeds or Twitter or instant messages or enabling the audio channel for streaming multimedia while disabling the video channel.

In step 2600, the media controller 1524 detects a stimulus indicating that media

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presentation is to be altered for one or more input/output systems. This may be a request by a user or a change in vehicle state from operational to non-operational or from non-operational to operational (e.g., a user action requiring the media not to be presented by the vehicle (e.g., the vehicle operation moves from being "parked" or a non-operational state to being in gear (or in "drive" or "reverse" or in motion), or an operational state). As will be appreciated, many jurisdiction's laws prohibit displaying media to a driver while a vehicle is in operation.

In decision diamond 2604, the media controller 1524 determines whether or not to alter the media presentation for a selected input/output system. When, for example, the vehicle moves from an operational to a non-operational state, the media presentation for the selected input/output system can revert automatically to a more functional format. For instance, multimedia can have all channels, both audio and video, enabled for presentation, by the selected input/output system to the user. An RSS feed or Twitter or instant message, among others, can revert to text presentation, with automated reading being disabled.

In step 2608, the media presentation is altered, as determined, for one or more selected input/output systems.

In step 2612, media continues to be presented, in an unchanged format, on the selected input/output system.

Operation of Installation Supervisor 2044

An operation of the installation supervisor 2044 will now be discussed with reference to Fig. 12. The operation can provide a plug-and-play functionality for automotive components, whether device, hardware and/or software.

In step 1200, the installation supervisor 2044 detects an attempt to install a new computational component in the vehicle. The attempt can be detected by receipt of an installation notification or request from a user or the computational component itself. The computational component can be software, hardware, or a combination thereof. Exemplary computational components include an on board sensor 1516, a media controller 1524, a gateway/firewall 1512, a processing module 124, a network controller 1528, an input/output system 1520, a display and/or audio controller 1604 and/or 1608, an arbitration module 2000, a health check module 2008, a critical system controller 2012, a non-critical system

controller 2016, an on board sensor monitor 2020, a displayed object movement module 2024, a diagnostic module 2028, a media filter 2032, a network selector 2036, a remote control module 2040, a computational module selector 2052, an expansion module 290, an application, a plug-in module, and the like.

In step 1204, the installation supervisor 2044 determines the characteristics of the computational component. Exemplary characteristics include manufacturer, model number, serial number, date of manufacturer, and capabilities.

In decision diamond 1208, the installation supervisor 2044 determines whether the component is already linked to another vehicle. This can be done by accessing the memory of the installation component itself to check for a prior installation or accessing the records of the manufacturer via remote node 1500.

When the component has not yet been linked to another vehicle, the installation supervisor 2044, in decision diamond 1212, determines whether the installation is in compliance with licensing restrictions on the use of the computational component. Licensing conditions and/or restrictions can include payment of funds to vendor, use restrictions (e.g., user-based license restrictions (e.g., authorized user, concurrent user, floating user, and user value unit restrictions), capacity-based license restrictions (e.g., install, processor value unit, server and virtual server restrictions), territorial restrictions (e.g., use permitted only in certain countries, states, provinces, and the like), and other license restrictions (e.g., client device (or host vehicle-based restrictions) and resource value unit restrictions)), and other conditions and/or restrictions.

When the component installation is in compliance with applicable license restrictions, the installation supervisor 2044, in decision diamond 1216, determines whether the computational component is eligible for use in the current vehicle. Eligibility is based not only on specifications and capabilities of the computational component but also vehicle manufacturer approval or disapproval of the computational component for vehicles having this particular make, model and year of manufacture.

When the computational component is eligible for use in the current vehicle, the installation supervisor 2044, in step 1220, creates data structures in the memories of the computational component and computational module binding the computational component

to the vehicle. This can be done, for example, by creating data structures in the memory of the computational component containing a serial number or vehicle identification number of the vehicle and in the memory 220 of the processing module containing a serial number or other unique identifier for the computational component and a description of the type, make, model, year of manufacture, and date of installation of the computational component.

When any of the following is true, namely the computational component is already linked to another vehicle (decision diamond 1208), the license does not permit the installation of the computational component (decision diamond 1212), and/or the component is ineligible for use with the current vehicle (decision diamond 1216), the installation supervisor 2044, in step 1224, ignores the computational component, and therefore refuses installation of same, logs the attempted installation (including a description of the computational component and time stamp associated with the attempted installation) and/or notifies a remote node 1500 (such as a manufacturer for purposes of warranty invalidation) and/or the operator of the invalid attempt.

Operation of Media Filter 2032

An operation of the media filter 2032 will be discussed with reference to Fig. 13.

In step 1300, a processing module 124 receives a signal from a third party source, such as a web site or server (in response to web browsing) or a communication from a third party, such as email, text, cellular call, and the like, for presentation to an occupant.

In step 1304, the media filter 2032 determines preferences of the occupant and/or other restrictions. Preferences include, for example, a white or black list (of approved or disapproved message sources respectively), presence of the destination occupant as received from a presence server or service associated with the destination occupant, preferences of or rules relating to the destination occupant as determined by another occupant having privileges to control content presented to the destination occupant (e.g., parental control of content and/or communications presented to a child), context of the destination occupant (e.g., driving the vehicle, engaging in an unrelated higher priority activity on the input/output system associated therewith, etc.), and governing laws (or an applicable rule set 1612).

In decision diamond 1308, the media filter 2032 determines, based on the determined preferences and/or restrictions from step 1304, whether or not to block the signal or alter the

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payload of the signal to conform with the preferences and/or restrictions.

When the signal is not to be blocked, the media filter 2032 proceeds to step 1312 and presents the signal or its payload to the destination occupant. The signal may be blocked, for example, when it is a call to an operator while the vehicle is in motion (to comply with a state or local law). Electronic SPAM may be blocked.

When the signal is to be blocked, the media filter 2032 proceeds to step 1316 and blocks the signal. The signal may be blocked, for example, when it is a call to an operator while the vehicle is in motion (to comply with a state or local law). Electronic SPAM may be blocked.

Operation of Diagnostic Module 2028

The diagnostic module 2028 queries on board sensors 1516 and/or on board sensor monitor(s) 2020, and/or critical and/or non-critical system controller(s) 2012 and 2016 to determine states of various parts, components, subsystems, tasks, functions, and/or operations of the vehicle. The diagnostic module 2028 can then perform diagnostics using locally stored or remotely stored (at remote node 1500) pre-determined logic to identify faults, malfunctions, or other problems and, optionally, generate repair advice and/or warnings and/or instructions and/or recommendations to the vehicle operator. This diagnosis can also locate and/or determine and/or identify any parts or components required to repair the vehicle, the source and/or source(s) for replacement parts and/or components, identify a nearest and/or preferred service or repair facility or service, provide an estimate of the repair cost at a selected facility and/or comparative estimates at different facilities in proximity to the vehicle's current location, and/or obtain any manufacturer's and/or vendor's update information required to repair or resolve the identified fault, malfunction, or other problem. The diagnostic module 2028 can provide any repair instructions and/or recommendations to the operator, pre-order the replacement parts and/or components, contact the nearest and/or preferred service facility for a repair estimate, contact the nearest and/or preferred service facility to schedule an appointment for the repair or service, and/or forward, optionally at the owner's and/or operator's instructions, the collected information regarding the fault, malfunction, or other problem to a remote node 1500 (specified by the operator and/or owner) for monitoring and/or evaluation. The owner and/or operator can have a default

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location or select a location for fault, malfunction, or other problem analysis assistance.

Fig. 14 depicts an operation of the diagnostic module 2028.

In step 1400, the diagnostic module 2028 receives, from a local or remote source (such as the remote node 1500), a signal warning of an actual or potential malfunction of an on board component, including any of the components discussed above.

In step 1404, the diagnostic module 2028, in step 1404, determines user and/or default preferences regarding treatment of the signal. The various options include one or more of present the signal to a third party such as a manufacturer or servicing entity (option 1408), presenting the signal to an occupant of the vehicle (option 1412), contacting an emergency service provider or first responder (e.g., request tow truck or roadside service provider, contact police, and/or request dispatch of an ambulance), and performing on board diagnostics (option 1416) to obtain more diagnostic information regarding the actual or potential malfunction followed by option 1408 or 1412. In one application, the signal is forwarded to a manufacturer or repair service vendor that compares the reported fault and vehicle-specific parameters (e.g., mileage, date of last service, and/or environmental conditions) to the maintenance and/or fault history for the vehicle model and provides, to the vehicle operator, the result of the comparison along with a probability of the diagnosis being correct. The signal can include, for example, a current (SPS or map) location of the vehicle, an identity of the vehicle and/or vehicle owner or occupant, and diagnostic information and/or diagnosed cause of the warning signal. The manufacturer or service vendor also updates its database for the particular model of the vehicle to reflect the reported fault. The manufacturer or service vendor can dispatch an emergency service provider or first responder to the location reported by the vehicle SPS, and/or schedules the workload for the repair shop and pre-orders the required part(s) for the repair shop. The diagnostic module can recommend a source of conduct or action (including those discussed above) for the vehicle operator and, if accepted, execute or cause execution of same.

In step 1420, the diagnostic module 2028 determines a further treatment of the warning or error signal. The determination may be based, for instance, on a command or request received from the third party or occupant or an applicable set of rules and/or policies.

Fig. 28 depicts another operation of the diagnostic module 2028.

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Fig. 28 depicts a vehicle ecosystem capable of providing accurate indications for purposes of service and maintenance in accordance with embodiments of the present disclosure. Currently, vehicles may offer a warning light and/or series of lights to provide information to a user regarding vehicle condition. These lights may have a multitude of meanings that may require further inspection by a mechanic or other qualified individual. In order to interpret and decode the meanings behind a light combination, the user is routinely required to consult the owner's manual, the Internet, or to call the dealer. In some cases, these lights are only maintenance reminders and need not be immediately addressed. However, in other cases, the lights are urgent and require immediate attention.

The present disclosure can provide an Internet enabled car that is capable of transmitting vehicle codes, error code readings, and to remotely diagnose and display these codes to a user and/or a mechanic. This diagnostic information may be performed on-board or remotely. It is anticipated that the information may be accessed according to chosen preferences. Additionally, it is anticipated that based on the type of warning/error code, the system may suggest a recommended course of action. For example, if the error code indicates a severe or catastrophic failure the system may suggest to pull-over, stop the car, and proceed to a safe area away from the automobile.

In some embodiments, the system may provide "conversational" warnings to a user. These warnings and associated codes may also be simultaneously transmitted to a selected garage and/or postponed for approval to transmit to the nearest garage (either wired or wirelessly). In addition, the system may estimate an approximate time to fix (based on past garage fix times, garage inventory, severity of problem, combinations, etc.) and make appropriate suggestions. For example, the system may provide the conversational warning "Please do not be alarmed, your engine is running slightly low on oil; there are four garages in the general area. You have time to get a cup of coffee while you wait; here are three coffee shops in the immediate location" and/or "It appears that the rear left suspension is malfunctioning and the upper strut will need to be replaced. It is noticed that you are greater than 80 miles from home, would you like to book a reservation at a local hotel? There are five hotels in the area rated three stars or above."

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Referring to Fig. 28, the diagnostic module 2028, in step 2800, receives and interprets a maintenance and/or system error and/or warning code. Such codes are known in the art of automotive design and generally depend on the automotive and/or component manufacturer. Accordingly, the diagnostic module 2028 will, generally, have a lookup table or other set of data structures to map the code not only to a corresponding condition and/or conversation meaning but also behavioral rule in a rule set. In appropriate applications, the conversational meaning can be further determined based on the condition.

The diagnostic module 2028, in step 2808, provides the conversational meaning, such as audibly and/or visually, to the vehicle operator.

The diagnostic module 2028, in step 2812, determines other factors related to the received code(s). The pertinent rule in the rule set, for example, can cause the diagnostic to query other components potentially impacted by the condition and/or having other data points relevant to the condition. The diagnostic module 2028, in accordance with the pertinent rule, may contact a remote node for additional information relevant to the code, including the conversational advice to be provided to the vehicle operator.

In step 2816, the diagnostic module 2028 provides the conversational advice to the operator. The advice may be interactive in which event the operator would query the diagnostic module 2028 for information not clear from the initially provided conversation meaning and/or advice. A menu-type structure can be used by the diagnostic module to respond to the operator request for further information. Such further information may require the diagnostic module to initiate a contact, on behalf of the operator, with a remote node 1500.

In step 2820, the diagnostic module logs codes, internally and/or provides the codes to a remote node 1500 for logging, and provides for transfer of the operator to a selected entity or entities, such as one or more remote nodes 1500.

In step 2824, the diagnostic module 2028 optionally transfers the codes, on a predetermined stimulus, to a remote node 1500.

Operation of Displayed Object Movement Module 2024

An operation of the displayed object movement module 2024 will now be discussed with reference to Figs. 21 and 22. The displayed object movement module 2024 enables a

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user to share displayed content or other image, in substantial real time and not via a transmitted message, with one or more other input/output systems. The displayed object can be any displayed image, including streaming video, a web page, an icon, a window, an application, and the like.

In step 2100, the displayed object movement module 2024 detects a stimulus. The stimulus can be, for example, receipt of a gesture by a touchscreen display of an input/output system, user selection on a first input/output system of a different second input/output system to which the displayed object is to be moved, and the like.

In step 2104, the displayed object movement module 2024 determines, based on the stimulus, to which input/output system display to move the displayed object.

Fig. 22A depicts one technique to determine the destination input/output system(s). Each of the dashed lines 2208a-connecting to the displayed object 2204 in the display 2200 indicates a direction, or vector, along which the displayed object 2204 is to be moved. The displayed object movement module 2024 projects the direction to determine an input/output display intersected by or nearest the projection of the vector. By way of illustration, the first gesture 2208a (if received by an input/output system in a back seat) will cause the displayed object 2204 to move to the driver's input/output system (which corresponds to position "1"), the second gesture 2208b (if received by an input/output system in a back seat) will cause the displayed object 2204 to move to the input/output system positioned in the middle front seating position (which corresponds to position "2"), the third gesture 2208c (if received by an input/output system in a back seat) will cause the displayed object 2204 to move to the input/output system positioned in the right (facing the front of the vehicle) front seating position (which corresponds to position "3"), the fourth gesture 2208d (if received by an input/output system in either a front or back seat) will cause the displayed object 2204 to move to the left adjacent input/output system (relative to the gesture receiving input/output system) (which corresponds to position "4"), the fifth gesture 2208e (if received by an input/output system in either a front or back seat) will cause the displayed object 2204 to move to the right adjacent input/output system (relative to the gesture receiving input/output system) (which corresponds to position "5"), the sixth gesture 2208f (if received by an input/output system in a front seat) will cause the displayed object 2204 to move to the

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input/output system positioned in the left rear seating position (which corresponds to position "6"), the seventh gesture 2208g (if received by an input/output system in a front seat) will cause the displayed object 2204 to move to the input/output system positioned in the middle rear seating position (which corresponds to position "7"), and finally the eighth gesture 2208h (if received by an input/output system in a front seat) will cause the displayed object 2204 to move to the input/output system positioned in the right rear seating position (which corresponds to position "8").

Fig. 22B depicts one technique to determine the destination input/output system(s). The display 2200 of the user's input/output system displays a seating diagram of the vehicle. The first seat icon 2212a corresponds to the driver's seating position, the second seat icon 2212b to the middle front seating position (if present), the third seat icon 2212c to the right front seating position, the fourth seat icon 2212d to the left rear seating position, the fifth seat icon 2212e to the middle rear seating position (if present), and the sixth seat icon 2212f to the right rear seating position. This display would typically be selected from the display containing the displayed object to be moved and would be selected before or after selection of the displayed object for movement. Unlike the prior technique, which generally requires the displayed object to be moved to multiple input/output systems sequentially or entry of multiple gestures, which can be laborious, the seating diagram enables the displayed object to be moved substantially simultaneously to multiple input/output systems. Specifically, selection of a seating position selects the input/output system servicing the seating position. Multiple seating positions can be selected from the display 2200, which, when a movement command is received, causes the displayed object to be moved to each of the input/output system(s) servicing the seating position(s) selected.

Returning to Fig. 21, the displayed object movement module 2024 moves the displayed object selected for movement to the display of each of the selected input/output systems and alters the current display of each of the selected input/output systems to include the moved displayed object. Alteration of the display can depend on the content currently being viewed at each of the targeted displays. For example, if a target display is displaying streaming video, the moved displayed object could be minimized, giving the user the option of opening the displayed object and interrupting the video display. If a target display is

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inactive for a specified time period and therefore in "sleep" or "power down" mode, the moved displayed object could be maximized and the display awakened from a "sleep" or "power down" mode to display the maximized displayed object.

In decision diamond 2112, the displayed object movement module 2024 determines whether to continue display of the displayed object on the source display which received the movement command for the displayed object. The determination can be based on default or user preferences or a further command received from the user. When the source display is to be altered, the displayed object movement module 2024, in step 2116, alters the source display to remove the displayed object. When the source display is not to be altered, the displayed object movement module 2024, in step 2120, continues to display the displayed object.

Operation of Presence Reporting Module 2056

A presence reporting module considers local laws, individual (or contactee) context, and other factors in determining whether an individual is present (*e.g.,* for unified communications) and, if so, by what communication channel(s). Local laws, for example, may prohibit cellular calls and/or texting and/or tweeting while the car is in motion. In that event, a permissible communication channel, such as email or paging, is reported to the presence service 1500. The context could include, for example, the contactee is in the driver's seat (as determined by an on board sensor, such as a seating sensor), and the like), the vehicle is in motion, the vehicle is parked, the contactee is absent from vehicle (as determined by an on board sensor, such as a seating sensor, and the like), the contactee is currently using his or her corresponding input/output system and therefore is or is not available (depending on contactee preference), a current seating position of the contactee (*e.g.,* whether the contactee is a driver or passenger), a current geographical and/or geopolitical location of the vehicle, and so on. Other factors include, for example, the on board communication system and/or external computational device(s) 1532 are currently out of cellular phone range, the on board communication system and/or external computational device(s) 1532 are currently roaming, the wireless connection, such as over a cellular network, with the on board communication system and/or external computational device(s) is currently unacceptable (e.g., unacceptably low signal-to-noise ratio or quality or grade of

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service), and the like.

With reference to Fig. 29, the presence reporting module 2056, in step 2900, detects a stimulus, such as a passage of time, a query by the presence service 1500, an incoming or inbound contact, a change in user context, a change in the applicable local law due to a change in location of the vehicle, a change in contactee context, or a change in another factor.

In step 2904, the presence reporting module 2056 collects the context of the contactee, such as by querying on board sensors 1516, a input/output system 1520 corresponding to a seating location of the contactee to determine a current state of the input/output system (operational or non-operational) and/or activity of the contactee (e.g., web surfing, playing media, engaged in a phone call, etc.), an external computational device 1532 associated with the contactee, and/or the transceiver 1508 and/or network controller 1528 for information regarding the available networks for a communication and/or the quality of a connection over each network.

In decision diamond 2908, the presence reporting module 2056 determines whether the previously reported presence information requires updating (e.g., the previously reported presence information is no longer valid due a sensed change). When no update is required, the presence reporting module 2056 returns to step 2900. When an update is required, the presence reporting module 2056 proceeds to step 2912.

In step 2912, the presence reporting module 2056 reports the update(s) (or changes to the previously reported presence information) to the presence service 1500.

In step 2916, the presence service 1500 receives the update(s) and updates the current presence information for the associated contactee.

Operation of Social Networking Module 2070

An operation of the social networking module 2070 will now be discussed with reference to Fig. 30.

Social networking among vehicles can add a new dimension to driving. For example, an operator can socially network with a friend driving in the next lane. Although this can be done with cell phones, it can be difficult to retrieve the number while driving let alone to dial it without increasing accident risk. Rather than fuming silently, occupants of different

vehicles can conduct a social round table as they sit in gridlock. If an operator wanted to communicate with another car, he or she could address it using the license plate number.

There are a myriad of other examples of socially networked vehicles. Socially networked vehicles, for example, can enable multiple cars to connect while on car trips to share information about how much gas is left in the fuel tanks, competing fuel economy between the cars, shared routes, and land marks and gas stations on the route ahead. Socially networked vehicles can record the real-time fuel economy of a vehicle and then compare that fuel economy to peers, thereby enabling the driver to see other drivers that have driven the same, or similar routes, and receive suggestions from other drivers on the best route for the best fuel economy. A ride-sharing social network can encourage ad hoc carpooling and provide a rating and recommendation system for its users. Socially networked vehicles can play games with one another. Since the game could have access to car metrics, games could incorporate actual car data, such as speed, fuel, *etc.* Games could simulate what would happen if an operator drove the way he or she wanted to. Kids in socially networked vehicles can play games against one another.

With reference to Fig. 30, the processing module of a vehicle receives a stimulus in step 3000. The stimulus can be a request by a user to initiate a social network with a vehicle identified by the user providing the license plate number, receipt of a request for initiating a social networking session from another vehicle, the determination that a vehicle of a socially networked contact is available to initiate a social networking session, and the like.

In step 3004, the social networking module 2070 identifies the vehicles in wireless communication with the selected vehicle and having one or more occupants in a social networking relationship with a current vehicle occupant.

In step 3008, the social networking module 2070 determines whether or not to initiate a social networking session. This can be determined by receiving user input, predetermined rules provided by the user, legal restrictions on the ability of the current or other vehicle to engage in a social networking session, and the like.

When a social networking session is to be initiated, the social networking module 2070, in step 3012, initiates the session.

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In optional step 3016, the social networking module 2070 collects vehicle information and provides the information to the socially networked vehicle. The other vehicle, in return, can provide its collected vehicle information.

In step 3020, the social networking module terminates or suspends the session when a vehicle occupant leaves one of the socially networked vehicles and/or at the request of a vehicle occupant.

After step 3020 or when no social networking session is to be initiated (decision diamond 3008), the social networking module 2070 returns to step 3000.

The exemplary systems and methods of this disclosure have been described in relation to vehicle processing modules. However, to avoid unnecessarily obscuring the present disclosure, the preceding description omits a number of known structures and devices. This omission is not to be construed as a limitation of the scopes of the claims. Specific details are set forth to provide an understanding of the present disclosure. It should however be appreciated that the present disclosure may be practiced in a variety of ways beyond the specific detail set forth herein.

Furthermore, while the exemplary aspects, embodiments, and/or configurations illustrated herein show the various components of the system collocated, certain components of the system can be located remotely, at distant portions of a distributed network, such as a LAN and/or the Internet, or within a dedicated system. Thus, it should be appreciated, that the components of the system can be combined in to one or more devices, such as a vehicle computer system, a Personal Computer (PC), laptop, netbook, smart phone, Personal Digital Assistant (PDA), tablet, *etc.*, or collocated on a particular node of a distributed network, such as an analog and/or digital communications network, a packet-switch network, or a circuit-switched network or collocated on a particular node of a distributed network, such as an analog and/or digital communications network, a packet-switch network, or a circuit-switched network. It will be appreciated from the preceding description, and for reasons of computational efficiency, that the components of the system can be arranged at any location within a distributed network of components without affecting the operation of the system. For example, the various components can be located in a server. Similarly, one or more

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functional portions of the system could be distributed between a communications device(s) and an associated computing device.

Furthermore, it should be appreciated that the various links connecting the elements can be wired or wireless links, or any combination thereof, or any other known or later developed element(s) that is capable of supplying and/or communicating data to and from the connected elements. These wired or wireless links can also be secure links and may be capable of communicating encrypted information. Transmission media used as links, for example, can be any suitable carrier for electrical signals, including coaxial cables, copper wire and fiber optics, and may take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

Also, while the flowcharts have been discussed and illustrated in relation to a particular sequence of events, it should be appreciated that changes, additions, and omissions to this sequence can occur without materially affecting the operation of the disclosed embodiments, configuration, and aspects.

A number of variations and modifications of the disclosure can be used. It would be possible to provide for some features of the disclosure without providing others.

For example in one alternative embodiment, the application store is applied in a vehicle other than a wheeled or tracked vehicle. For example, the application store can be implemented in an aircraft, boat, ship, and the like.

In another alternative embodiment, the application store can include not only media player software but also media itself. Media, for example, can involve one or more media types (e.g., audio and/or video). Media can thus refer to music, movies, videos, audio books, pictures, screen savers, display wallpaper, and the like.

In yet another embodiment, the systems and methods of this disclosure can be implemented in conjunction with a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device or gate array such as PLD, PLA, FPGA, PAL, special purpose computer, any comparable means, or the like. In general, any device(s) or means capable of implementing the methodology illustrated herein can be used to implement

the various aspects of this disclosure. Exemplary hardware that can be used for the disclosed embodiments, configurations and aspects includes computers, handheld devices, telephones (e.g., cellular, Internet enabled, digital, analog, hybrids, and others), and other hardware known in the art. Some of these devices include processors (e.g., a single or multiple microprocessors), memory, nonvolatile storage, input devices, and output devices. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.

In yet another embodiment, the disclosed methods may be readily implemented in con junction with software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer or workstation platforms. Alternatively, the disclosed system may be implemented partially or fully in hardware using standard logic circuits or VLSI design. Whether software or hardware is used to implement the systems in accordance with this disclosure is dependent on the speed and/or efficiency requirements of the system, the particular function, and the particular software or hardware systems or microprocessor or microcomputer systems being utilized.

In yet another embodiment, the disclosed methods may be partially implemented in software that can be stored on a storage medium, executed on programmed general-purpose computer with the cooperation of a controller and memory, a special purpose computer, a microprocessor, or the like. In these instances, the systems and methods of this disclosure can be implemented as program embedded on personal computer such as an applet, JAVA® or CGI script, as a resource residing on a server or computer workstation, as a routine embedded in a dedicated measurement system, system component, or the like. The system can also be implemented by physically incorporating the system and/or method into a software and/or hardware system.

Although the present disclosure describes components and functions implemented in the aspects, embodiments, and/or configurations with reference to particular standards and protocols, the aspects, embodiments, and/or configurations are not limited to such standards and protocols. Other similar standards and protocols not mentioned herein are in existence

and are considered to be included in the present disclosure. Moreover, the standards and protocols mentioned herein and other similar standards and protocols not mentioned herein are periodically superseded by faster or more effective equivalents having essentially the same functions. Such replacement standards and protocols having

The present disclosure, in various aspects, embodiments, and/or configurations, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various aspects, embodiments, configurations embodiments, subcombinations, and/or subsets thereof. Those of skill in the art will understand how to make and use the disclosed aspects, embodiments, and/or configurations after understanding the present disclosure. The present disclosure, in various aspects, embodiments, and/or configurations, includes providing devices and processes in the absence of items not depicted and/or described herein or in various aspects, embodiments, and/or configurations hereof, including in the absence of such items as may have been used in previous devices or processes, e.g., for improving performance, achieving ease and\or reducing cost of implementation.

The foregoing discussion has been presented for purposes of illustration and description. The foregoing is not intended to limit the disclosure to the form or forms disclosed herein. In the foregoing Detailed Description for example, various features of the disclosure are grouped together in one or more aspects, embodiments, and/or configurations for the purpose of streamlining the disclosure. The features of the aspects, embodiments, and/or configurations of the disclosure may be combined in alternate aspects, embodiments, and/or configurations other than those discussed above. This method of disclosure is not to be interpreted as reflecting an intention that the claims require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed aspect, embodiment, and/or configuration. Thus, the following claims are hereby incorporated into this Detailed Description, with each claim standing on its own as a separate preferred embodiment of the disclosure.

Moreover, though the description has included description of one or more aspects, embodiments, and/or configurations and certain variations and modifications, other

variations, combinations, and modifications are within the scope of the disclosure, e.g., as may be within the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative aspects, embodiments, and/or configurations to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

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What is claimed is:

1. A vehicle, comprising at least one of:

(q) a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions;

(r) an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules;

(s) a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations;

(t) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants;

(u) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system;

(v) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal;

(w) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal;

(x) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request;

(y) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command

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and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant;

(z) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle;

(aa) a computational module selector to select a computational module to perform a selected task, operation, and/or function;

(bb) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network;

(cc) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station;

(dd) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation;

(ee) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle; and

(ff) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information.

2. The vehicle of claim 1, wherein the vehicle comprises (a), wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module.

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3. The vehicle of claim 1, wherein the vehicle comprises (b) and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module.

4. The vehicle of claim 1, wherein the vehicle comprises (c) and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module.

5. The vehicle of claim 1, wherein the vehicle comprises (d) and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system.

6. The vehicle of claim 1, wherein the vehicle comprises (e) and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle.

7. The vehicle of claim 1, wherein the vehicle comprises (f) and wherein the network selector selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service.

8. The vehicle of claim 1, wherein the vehicle comprises (g) and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service.

9. The vehicle of claim 1, wherein the vehicle comprises (h) and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator.

10. The vehicle of claim 1, wherein the vehicle comprises (i) and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems.

11. The vehicle of claim 1, wherein the vehicle comprises (j) and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module.

12. The vehicle of claim 1, wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. The vehicle of claim 1, wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. The vehicle of claim 1, wherein the vehicle comprises (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components.

15. The vehicle of claim 1, wherein the vehicle comprises (m) and wherein the media controller permits a first function and/or operation to be performed by the

computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station.

16. The vehicle of claim 1, wherein the vehicle comprises (n) and wherein the network controller caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state.

17. The vehicle of claim 1, wherein the vehicle comprises (o) and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion.

18. The vehicle of claim 1, wherein the vehicle comprises (p)

19. A non-transient, tangible computer readable medium comprising processor executable instructions to perform one or more of operations (a)-(p) referenced in claim 1.

20. A method comprising steps to perform one or more of the operations (a)-(p) referenced in claim 1.

ABSTRACT

The present disclosure describes a vehicle implementing one or more processing modules. These modules are configured to connect and interface with the various buses in the vehicle, where the various buses are connected with the various components of the vehicle to facilitate information transfer among the vehicle components. Each processing module is further modularized with the ability to add and replace other functional modules now or in the future. These functional modules can themselves act as distinct vehicle components. Each processing modules may hand-off processing to other modules depending on its health, processing load, or by third-party control. Thus, the plurality of processing modules helps to implement a middleware point of control to the vehicle with redundancy in processing and safety and security awareness in their applications.

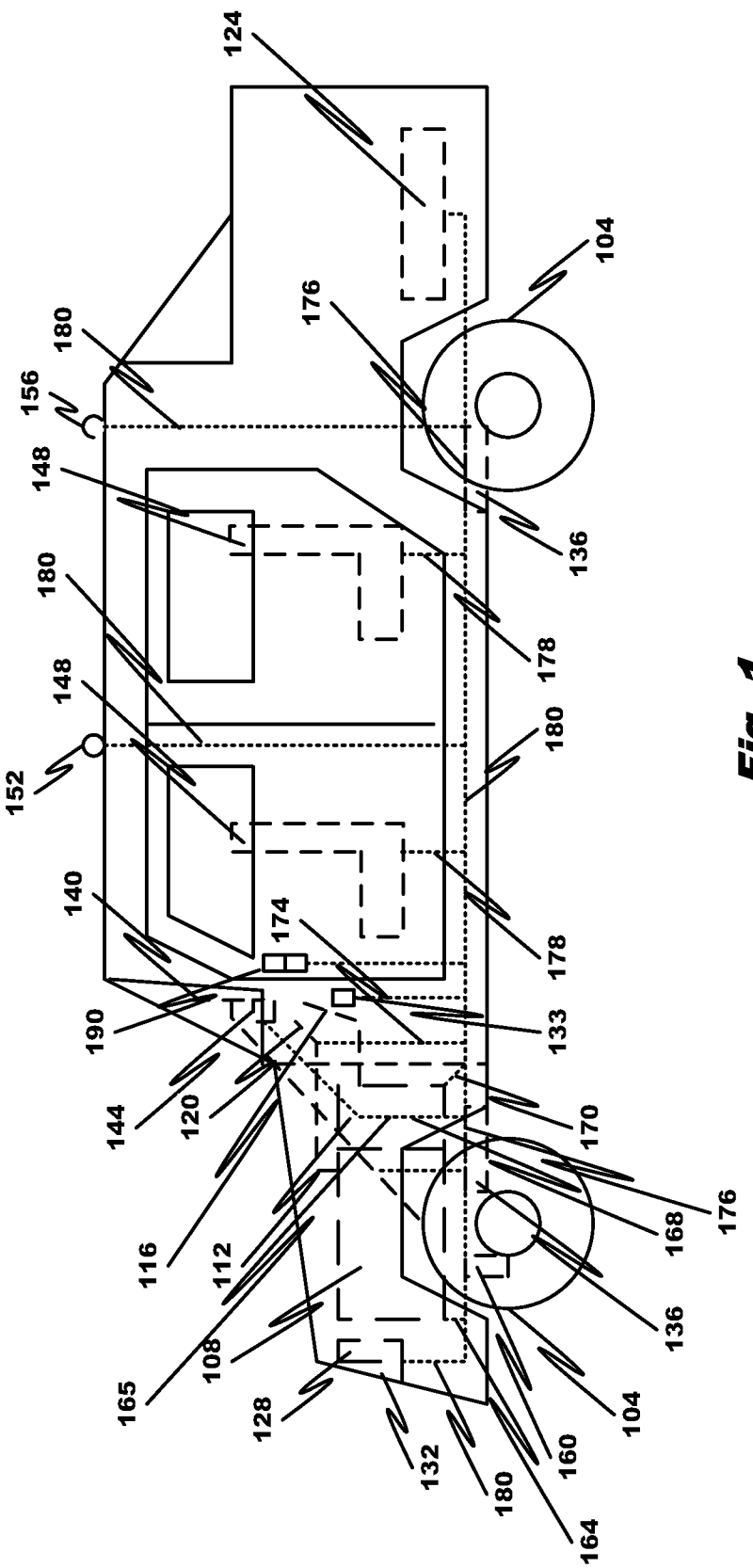

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Fig. 1

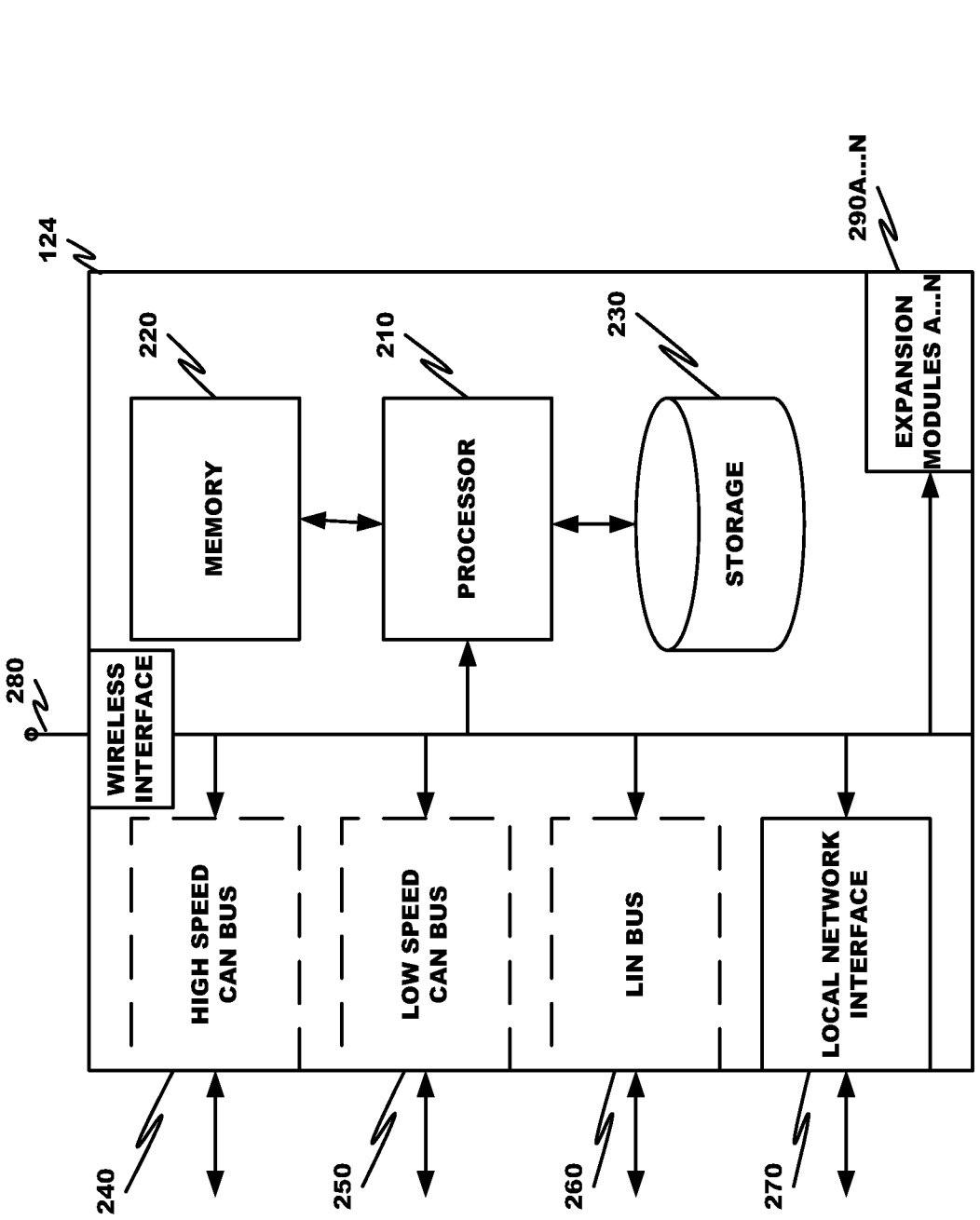

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MEMORY
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WIRELESS INTERFACE
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LOW SPEED CAN BUS
LIN BUS
LOCAL NETWORK INTERFACE
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250
260
270

Fig. 2

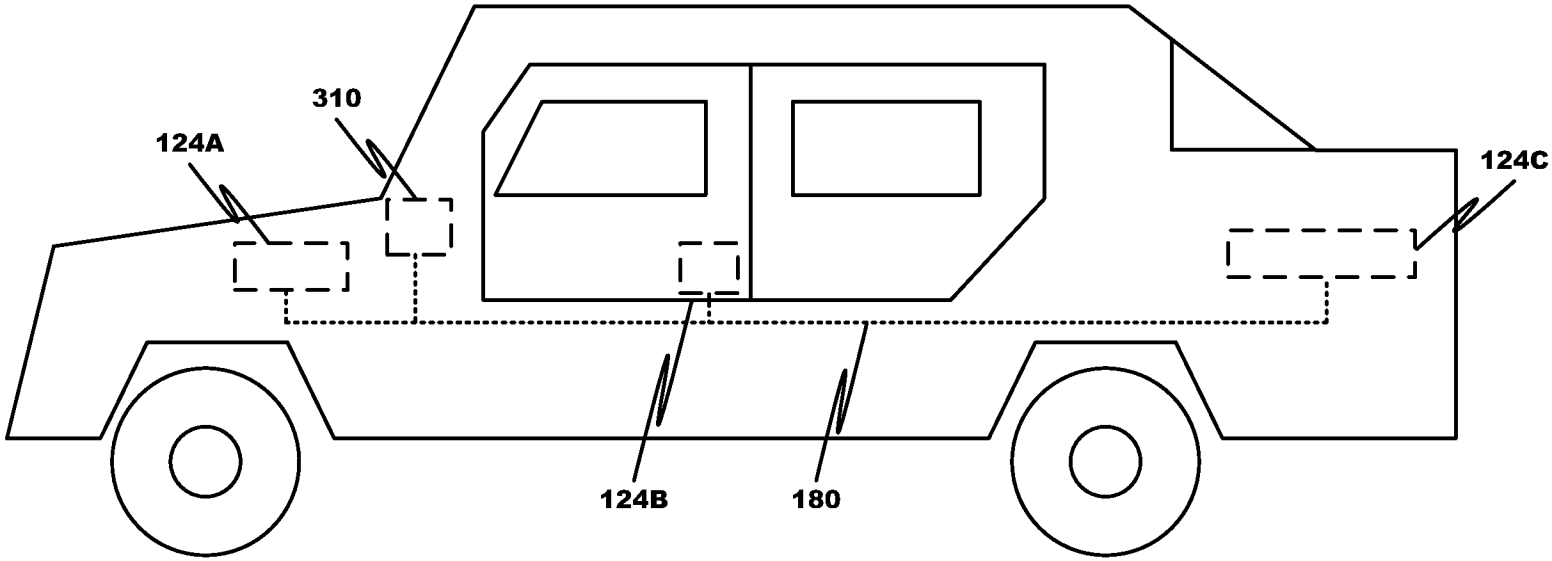


Fig. 3

300

Ford Ex. 1161 Page 98 of 520

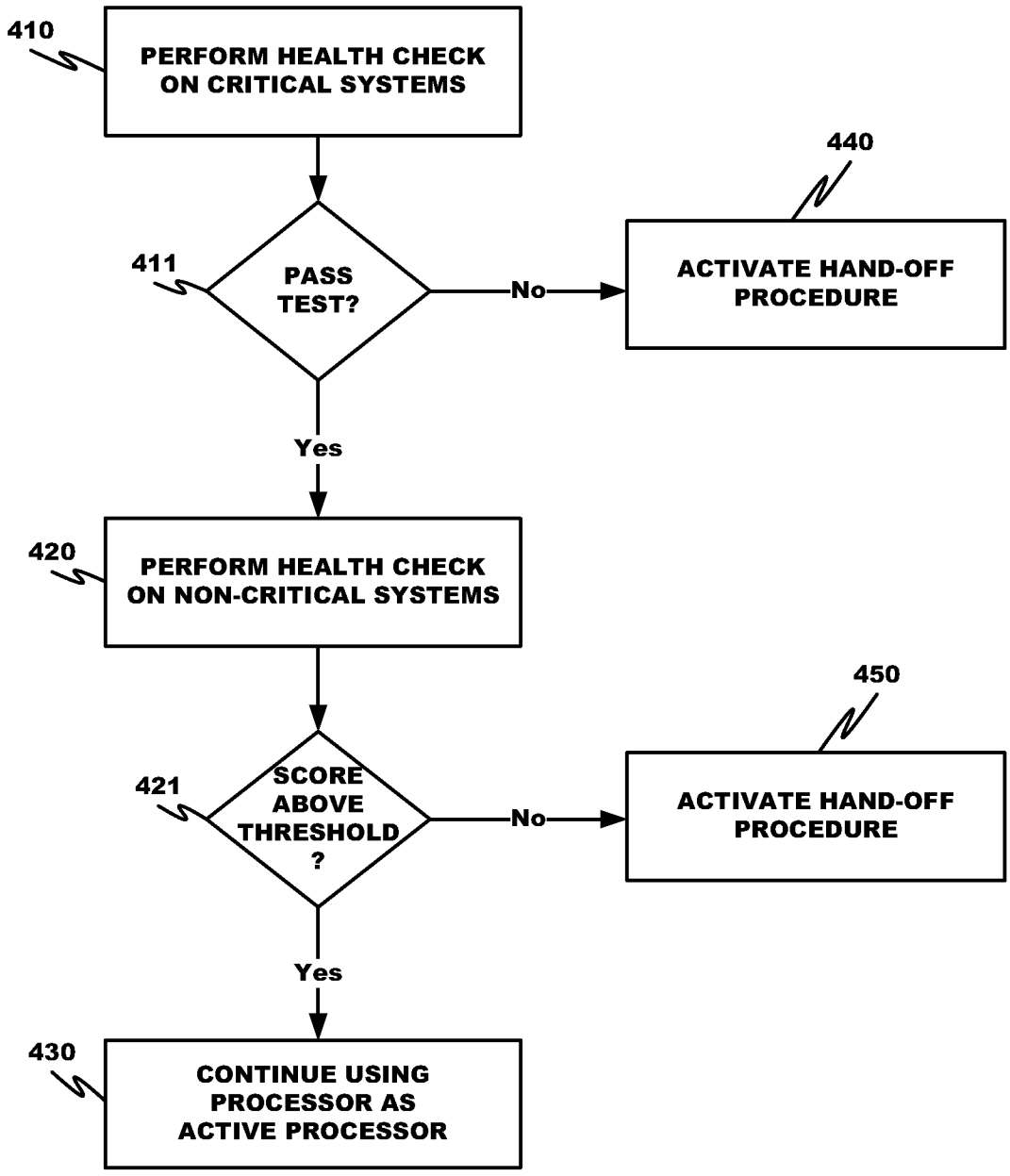

410
PERFORM HEALTH CHECK ON CRITICAL SYSTEMS
411
PASS TEST?
No
440
ACTIVATE HAND-OFF PROCEDURE
Yes
420
PERFORM HEALTH CHECK ON NON-CRITICAL SYSTEMS
421
SCORE ABOVE THRESHOLD ?
No
450
ACTIVATE HAND-OFF PROCEDURE
Yes
430
CONTINUE USING PROCESSOR AS ACTIVE PROCESSOR

Fig. 4

400

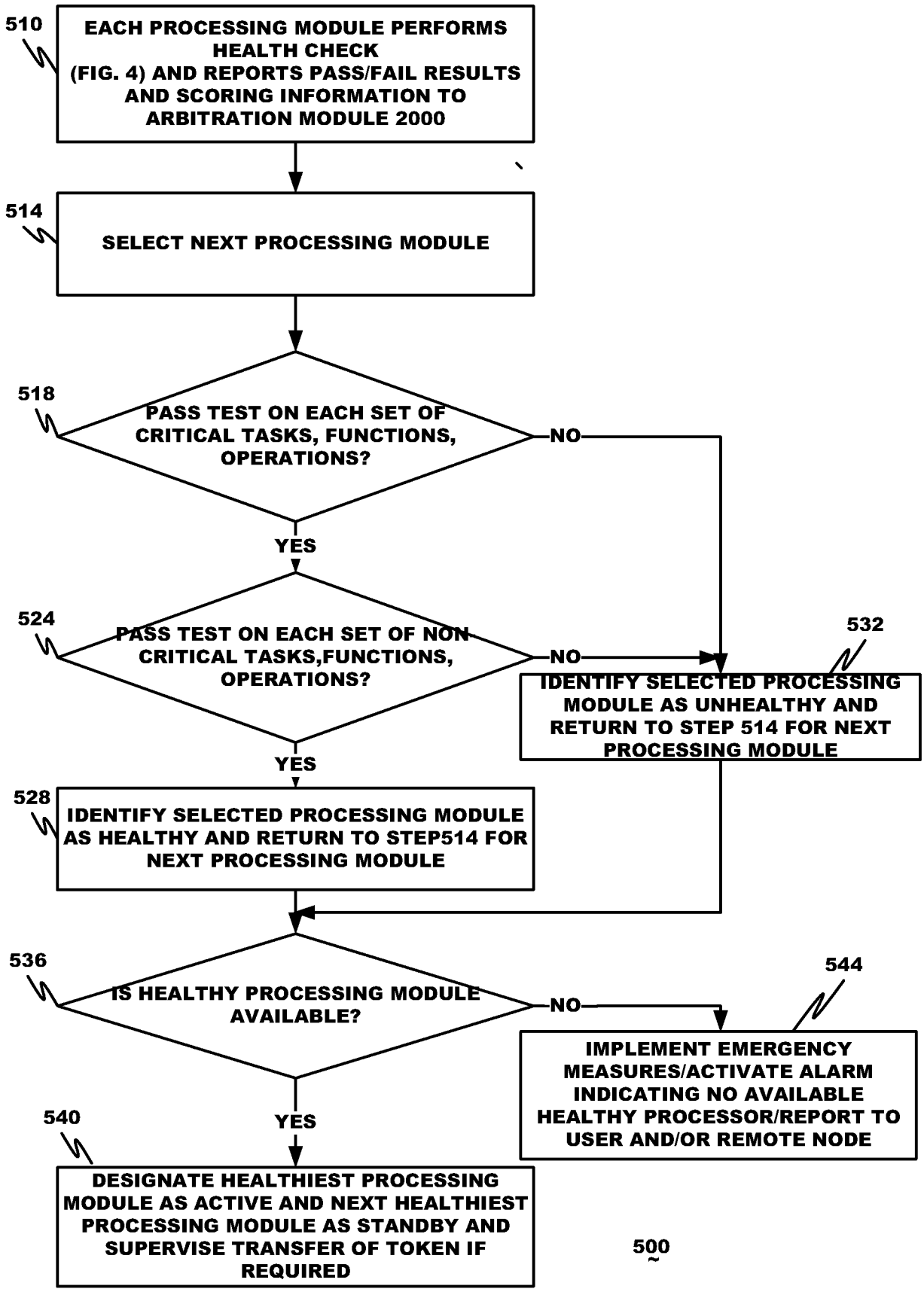

510
EACH PROCESSING MODULE PERFORMS HEALTH CHECK (FIG. 4) AND REPORTS PASS/FAIL RESULTS AND SCORING INFORMATION TO ARBITRATION MODULE 2000
514
SELECT NEXT PROCESSING MODULE
518
PASS TEST ON EACH SET OF CRITICAL TASKS, FUNCTIONS, OPERATIONS?
NO
YES
524
PASS TEST ON EACH SET OF NON CRITICAL TASKS,FUNCTIONS, OPERATIONS?
NO
532
IDENTIFY SELECTED PROCESSING MODULE AS UNHEALTHY AND RETURN TO STEP 514 FOR NEXT PROCESSING MODULE
YES
528
IDENTIFY SELECTED PROCESSING MODULE AS HEALTHY AND RETURN TO STEP514 FOR NEXT PROCESSING MODULE
536
IS HEALTHY PROCESSING MODULE AVAILABLE?
NO
544
IMPLEMENT EMERGENCY MEASURES/ACTIVATE ALARM INDICATING NO AVAILABLE HEALTHY PROCESSOR/REPORT TO USER AND/OR REMOTE NODE
YES
540
DESIGNATE HEALTHIEST PROCESSING MODULE AS ACTIVE AND NEXT HEALTHIEST PROCESSING MODULE AS STANDBY AND SUPERVISE TRANSFER OF TOKEN IF REQUIRED
500

Fig. 5

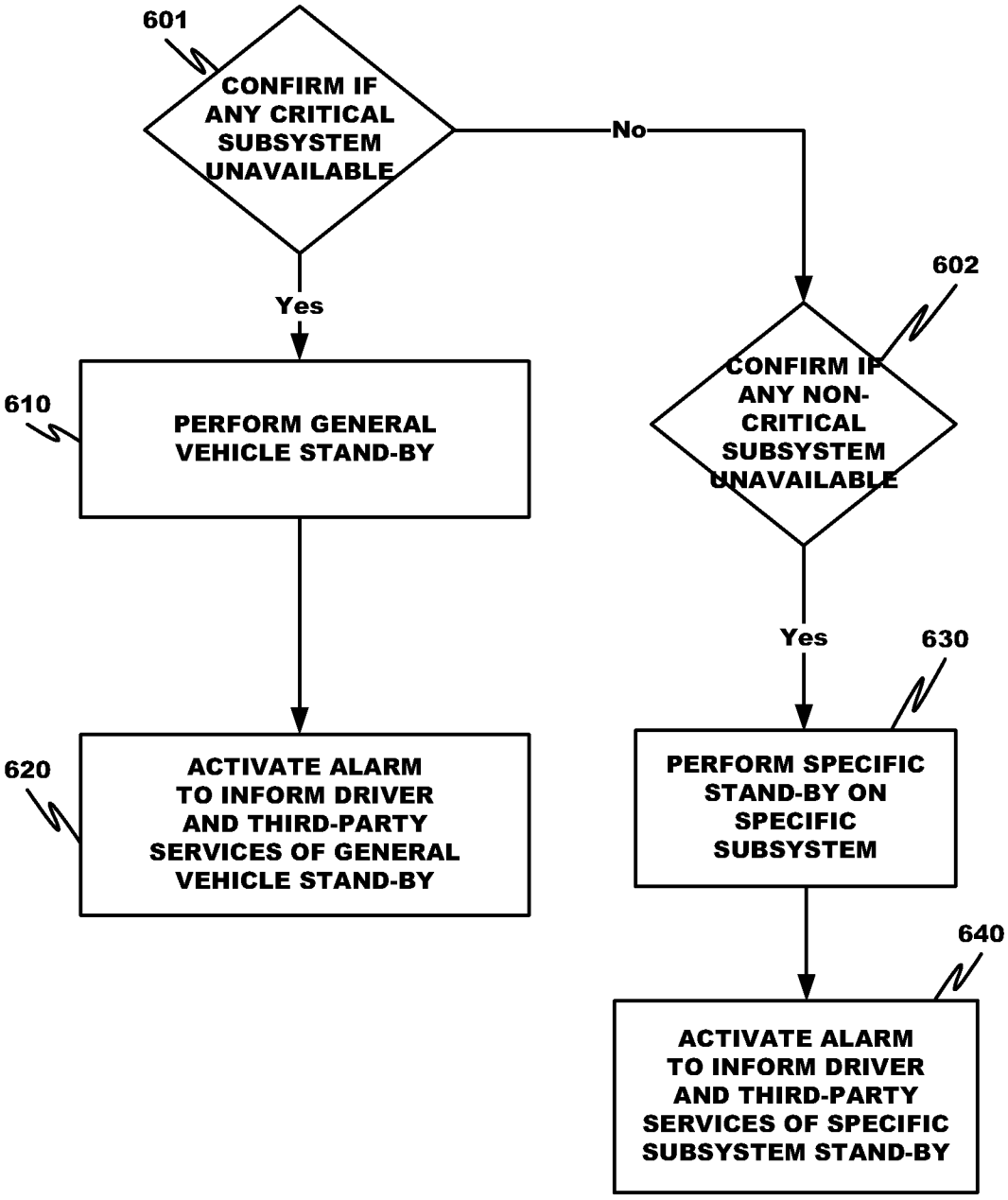

601
CONFIRM IF ANY CRITICAL SUBSYSTEM UNAVAILABLE
No
Yes
602
CONFIRM IF ANY NON-CRITICAL SUBSYSTEM UNAVAILABLE
610
PERFORM GENERAL VEHICLE STAND-BY
Yes
630
620
ACTIVATE ALARM TO INFORM DRIVER AND THIRD-PARTY SERVICES OF GENERAL VEHICLE STAND-BY
PERFORM SPECIFIC STAND-BY ON SPECIFIC SUBSYSTEM
640
ACTIVATE ALARM TO INFORM DRIVER AND THIRD-PARTY SERVICES OF SPECIFIC SUBSYSTEM STAND-BY

Fig. 6

600

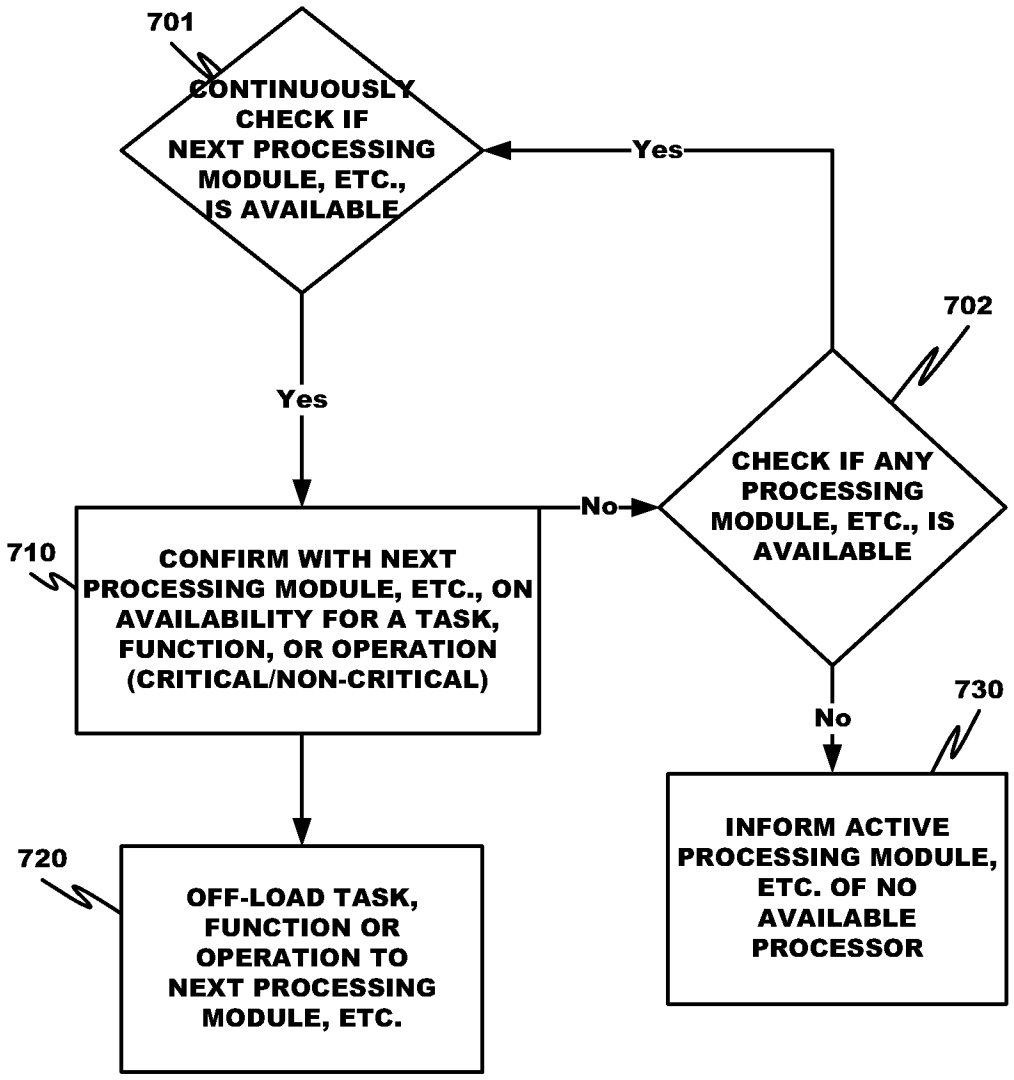

701
CONTINUOUSLY CHECK IF NEXT PROCESSING MODULE, ETC., IS AVAILABLE
Yes
Yes
702
CHECK IF ANY PROCESSING MODULE, ETC., IS AVAILABLE
No
710
CONFIRM WITH NEXT PROCESSING MODULE, ETC., ON AVAILABILITY FOR A TASK, FUNCTION, OR OPERATION (CRITICAL/NON-CRITICAL)
No
730
INFORM ACTIVE PROCESSING MODULE, ETC. OF NO AVAILABLE PROCESSOR
720
OFF-LOAD TASK, FUNCTION OR OPERATION TO NEXT PROCESSING MODULE, ETC.
700

Fig. 7

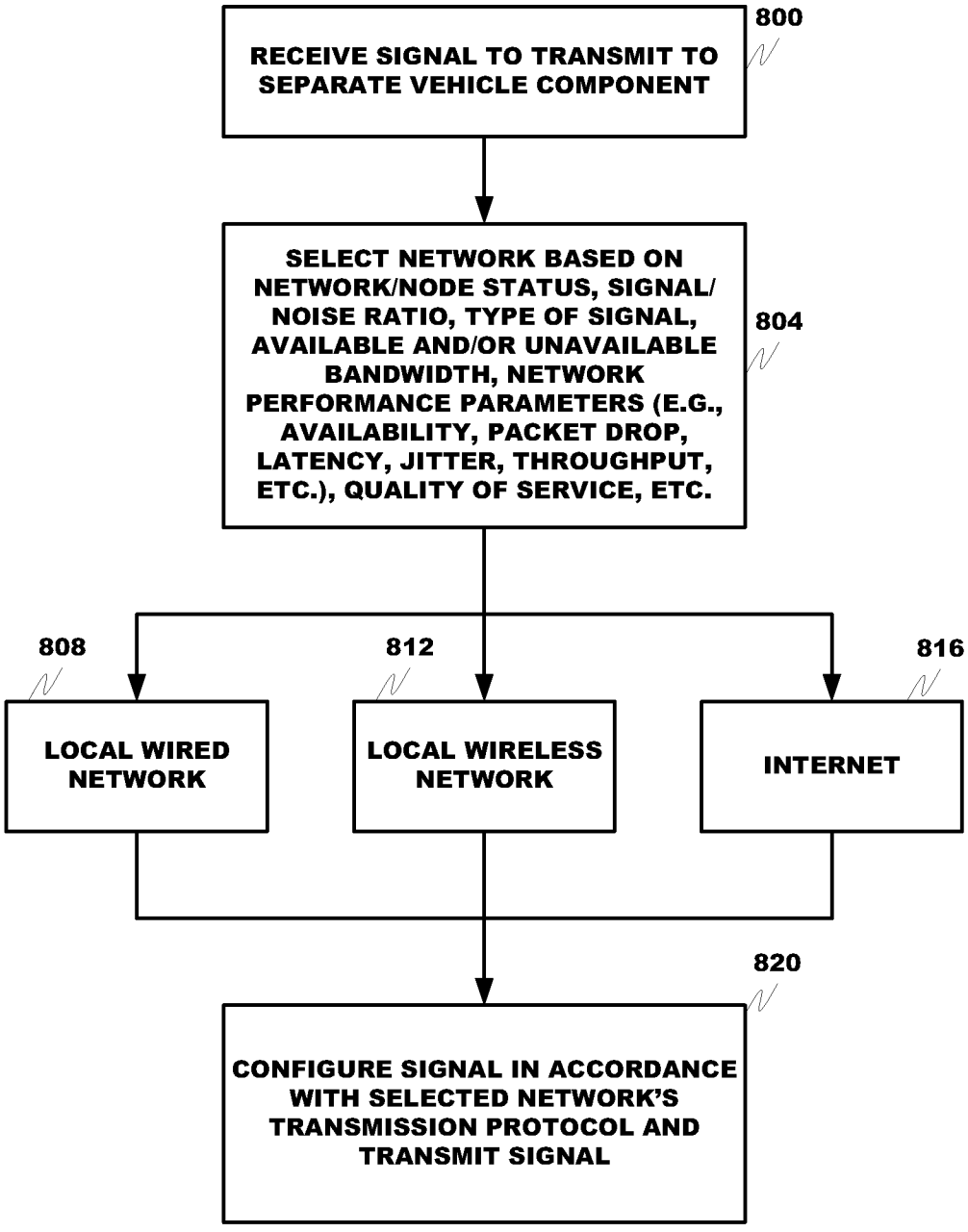

RECEIVE SIGNAL TO TRANSMIT TO SEPARATE VEHICLE COMPONENT
800
SELECT NETWORK BASED ON NETWORK/NODE STATUS, SIGNAL/ NOISE RATIO, TYPE OF SIGNAL, AVAILABLE AND/OR UNAVAILABLE BANDWIDTH, NETWORK PERFORMANCE PARAMETERS (E.G., AVAILABILITY, PACKET DROP, LATENCY, JITTER, THROUGHPUT, ETC.), QUALITY OF SERVICE, ETC.
804
808
LOCAL WIRED NETWORK
812
LOCAL WIRELESS NETWORK
816
INTERNET
820
CONFIGURE SIGNAL IN ACCORDANCE WITH SELECTED NETWORK'S TRANSMISSION PROTOCOL AND TRANSMIT SIGNAL

FIG. 8

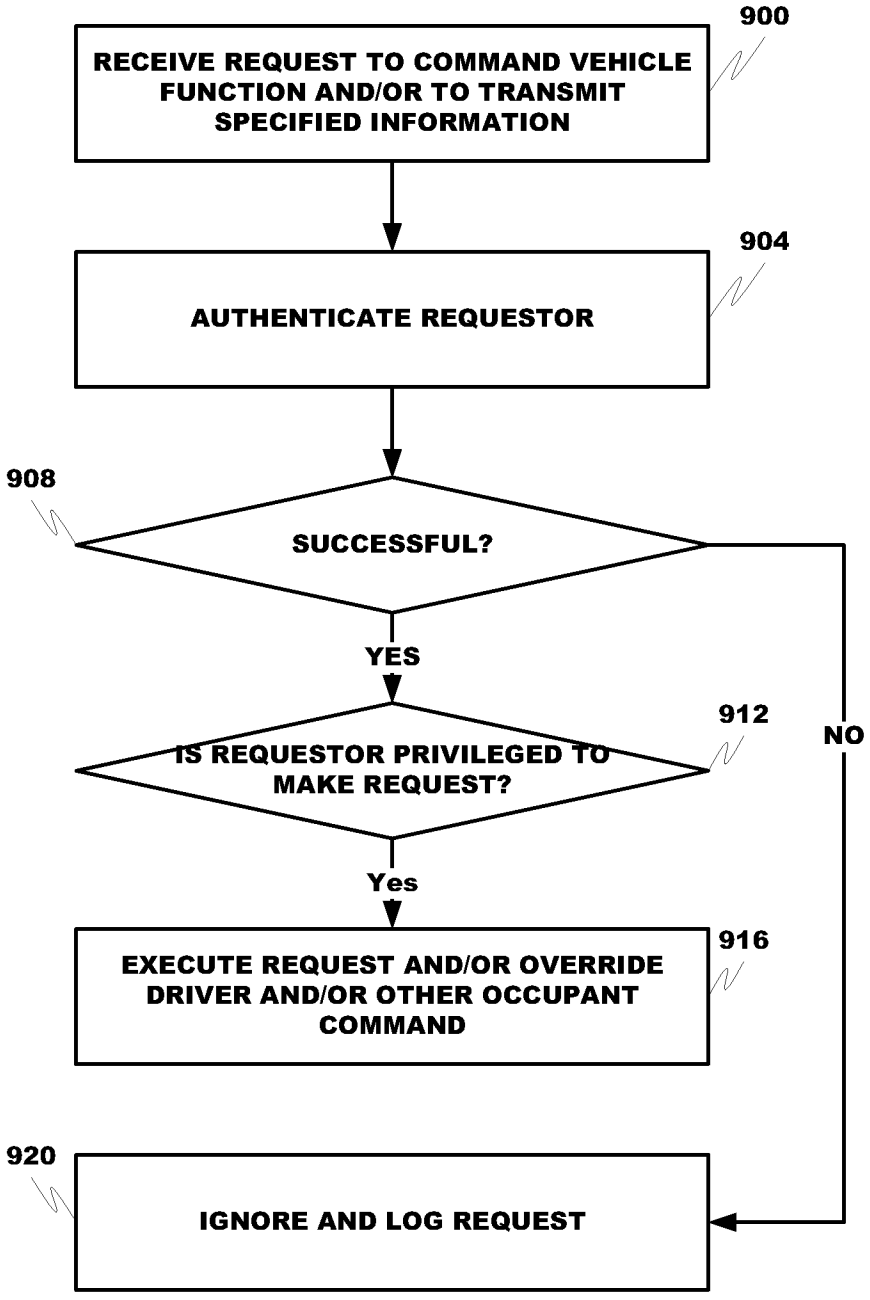

900
RECEIVE REQUEST TO COMMAND VEHICLE FUNCTION AND/OR TO TRANSMIT SPECIFIED INFORMATION
904
AUTHENTICATE REQUESTOR
908
SUCCESSFUL?
YES
NO
912
IS REQUESTOR PRIVILEGED TO MAKE REQUEST?
Yes
916
EXECUTE REQUEST AND/OR OVERRIDE DRIVER AND/OR OTHER OCCUPANT COMMAND
920
IGNORE AND LOG REQUEST

FIG. 9

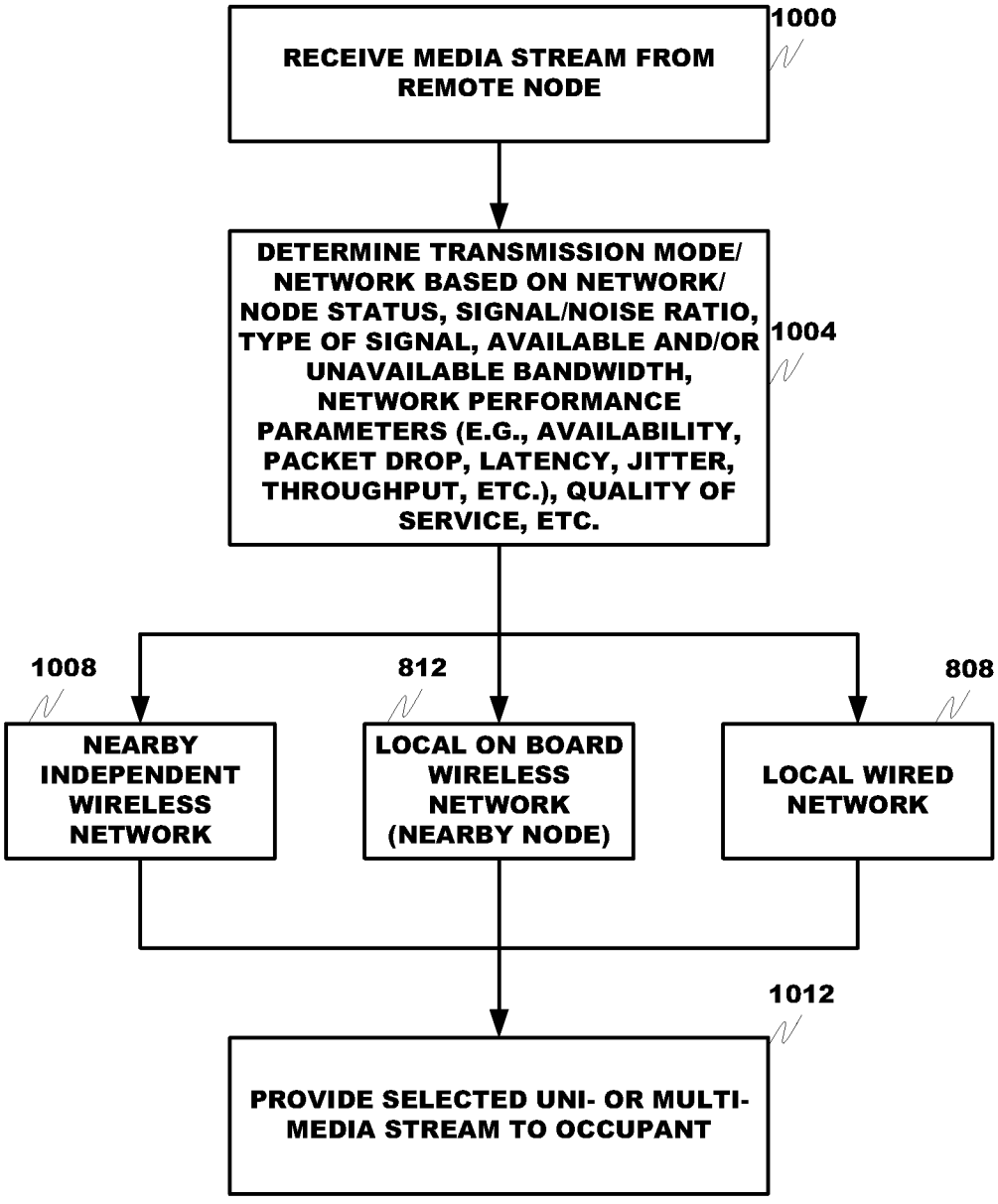

RECEIVE MEDIA STREAM FROM REMOTE NODE
1000
DETERMINE TRANSMISSION MODE/ NETWORK BASED ON NETWORK/ NODE STATUS, SIGNAL/NOISE RATIO, TYPE OF SIGNAL, AVAILABLE AND/OR UNAVAILABLE BANDWIDTH, NETWORK PERFORMANCE PARAMETERS (E.G., AVAILABILITY, PACKET DROP, LATENCY, JITTER, THROUGHPUT, ETC.), QUALITY OF SERVICE, ETC.
1004
1008
NEARBY INDEPENDENT WIRELESS NETWORK
812
LOCAL ON BOARD WIRELESS NETWORK (NEARBY NODE)
808
LOCAL WIRED NETWORK
1012
PROVIDE SELECTED UNI- OR MULTI-MEDIA STREAM TO OCCUPANT

FIG. 10

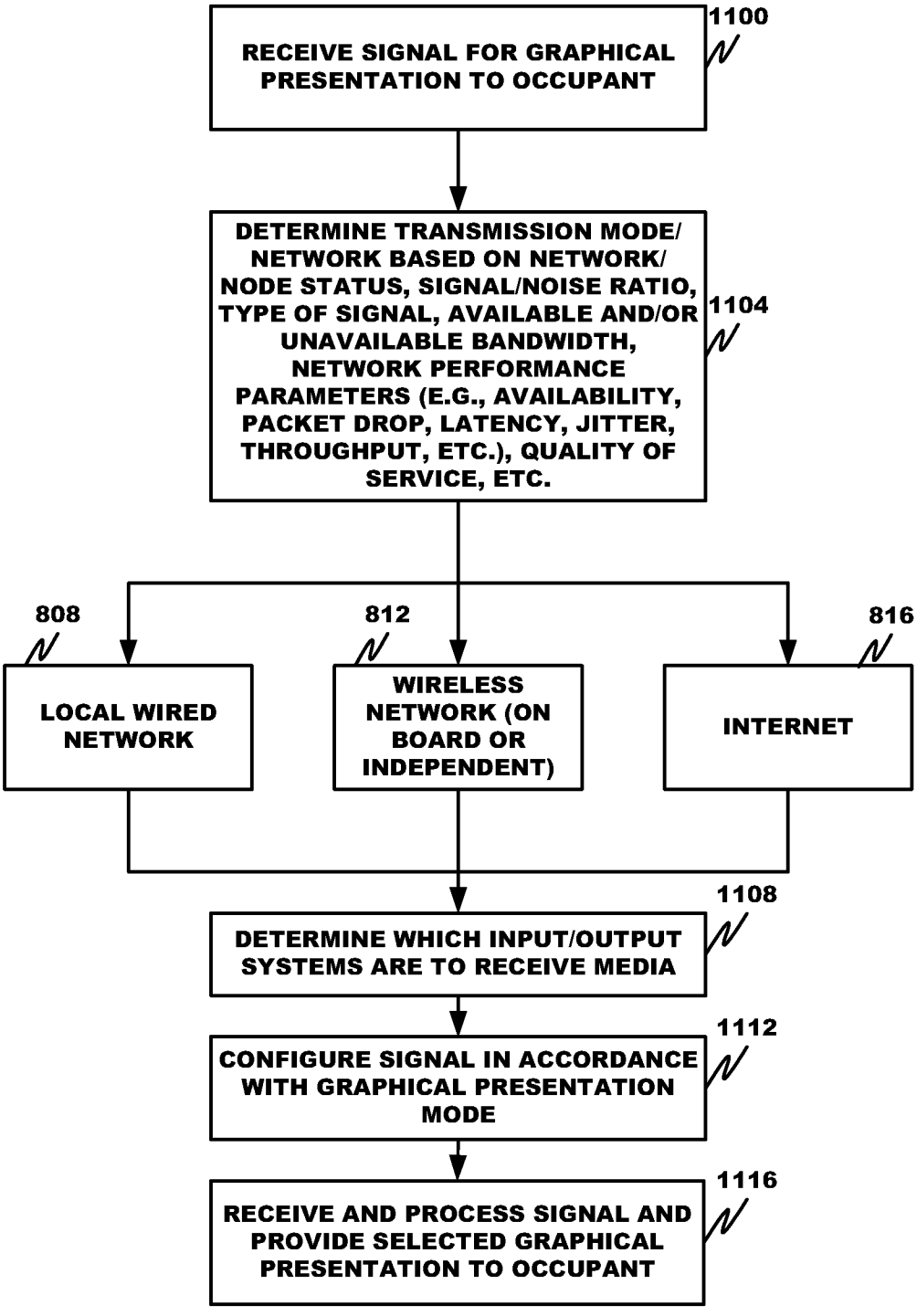

RECEIVE SIGNAL FOR GRAPHICAL PRESENTATION TO OCCUPANT
1100
DETERMINE TRANSMISSION MODE/ NETWORK BASED ON NETWORK/ NODE STATUS, SIGNAL/NOISE RATIO, TYPE OF SIGNAL, AVAILABLE AND/OR UNAVAILABLE BANDWIDTH, NETWORK PERFORMANCE PARAMETERS (E.G., AVAILABILITY, PACKET DROP, LATENCY, JITTER, THROUGHPUT, ETC.), QUALITY OF SERVICE, ETC.
1104
808
812
816
LOCAL WIRED NETWORK
WIRELESS NETWORK (ON BOARD OR INDEPENDENT)
INTERNET
1108
DETERMINE WHICH INPUT/OUTPUT SYSTEMS ARE TO RECEIVE MEDIA
1112
CONFIGURE SIGNAL IN ACCORDANCE WITH GRAPHICAL PRESENTATION MODE
1116
RECEIVE AND PROCESS SIGNAL AND PROVIDE SELECTED GRAPHICAL PRESENTATION TO OCCUPANT

FIG. 11

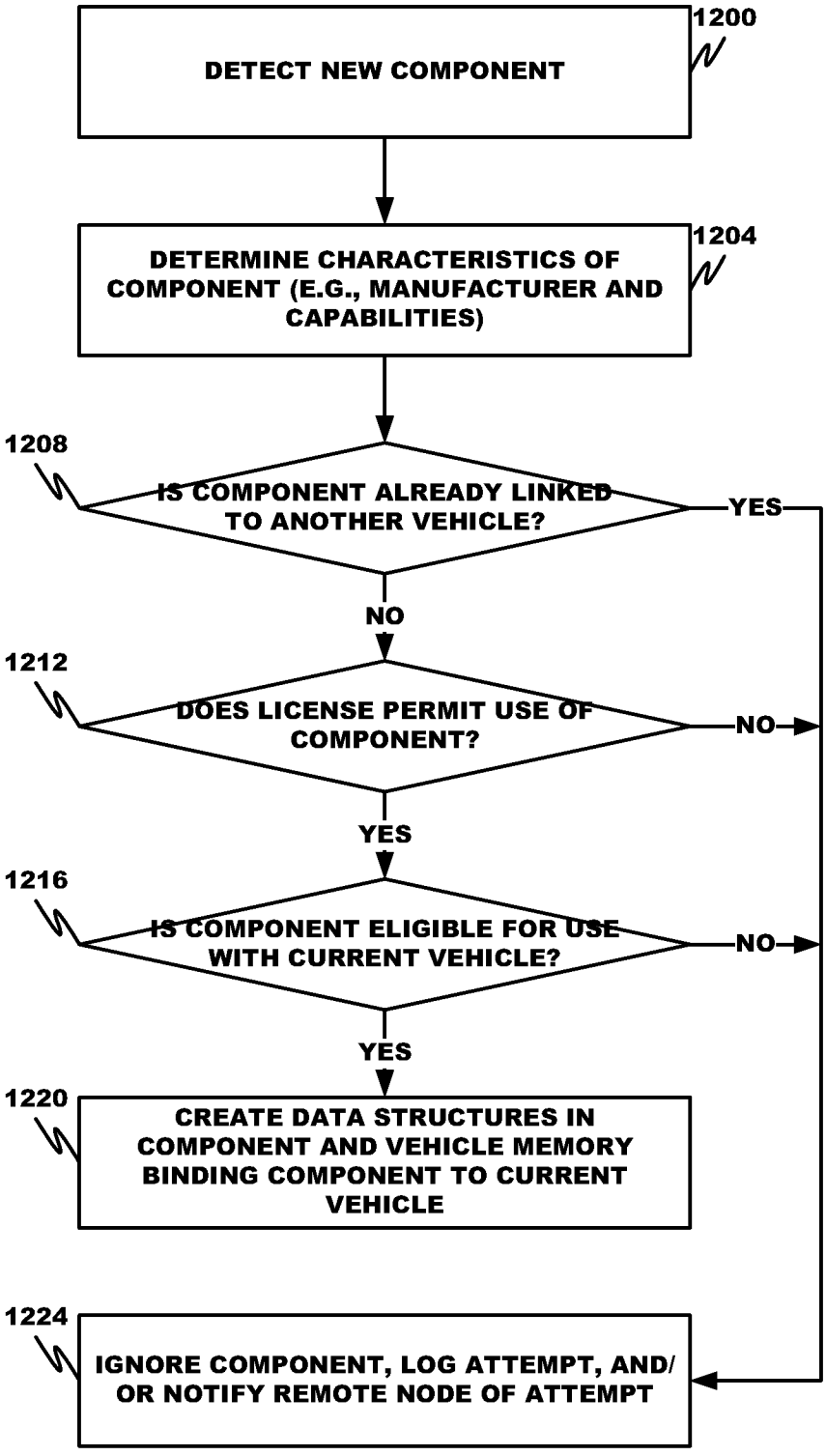

DETECT NEW COMPONENT
1200
DETERMINE CHARACTERISTICS OF COMPONENT (E.G., MANUFACTURER AND CAPABILITIES)
1204
1208
IS COMPONENT ALREADY LINKED TO ANOTHER VEHICLE?
YES
NO
1212
DOES LICENSE PERMIT USE OF COMPONENT?
NO
YES
1216
IS COMPONENT ELIGIBLE FOR USE WITH CURRENT VEHICLE?
NO
YES
1220
CREATE DATA STRUCTURES IN COMPONENT AND VEHICLE MEMORY BINDING COMPONENT TO CURRENT VEHICLE
1224
IGNORE COMPONENT, LOG ATTEMPT, AND/ OR NOTIFY REMOTE NODE OF ATTEMPT

FIG. 12

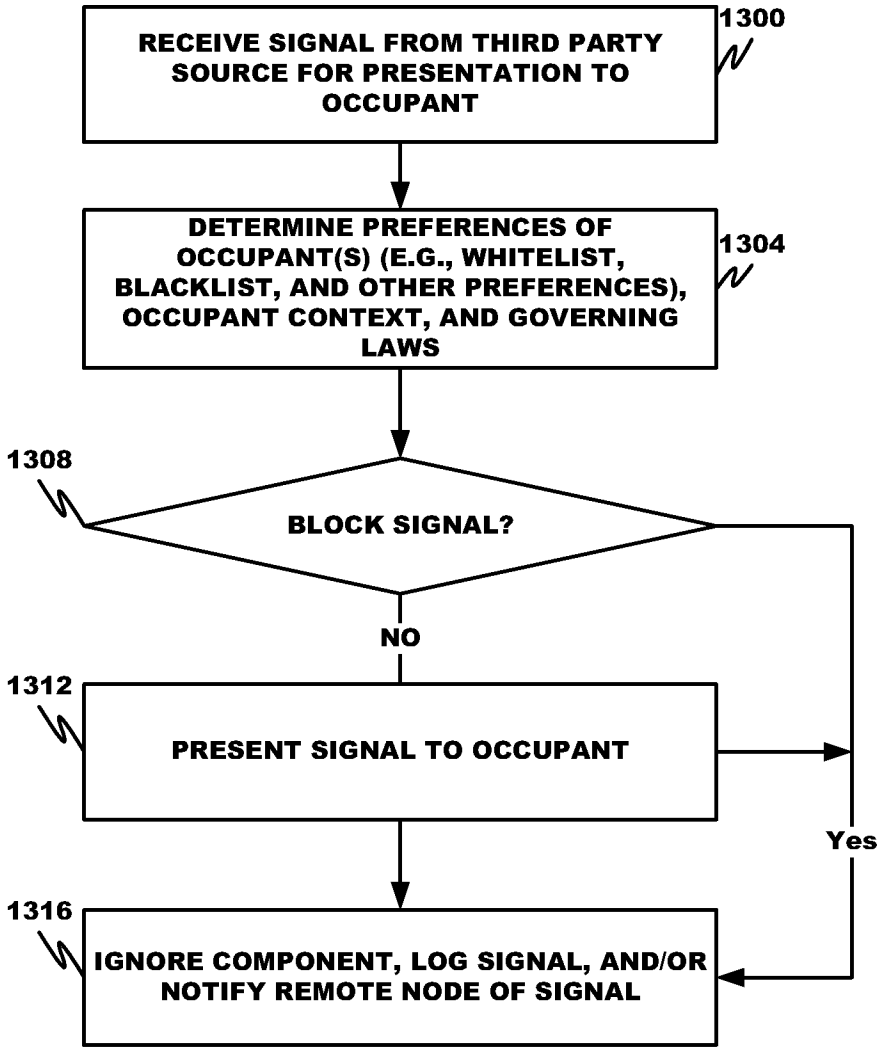

RECEIVE SIGNAL FROM THIRD PARTY SOURCE FOR PRESENTATION TO OCCUPANT
1300
DETERMINE PREFERENCES OF OCCUPANT(S) (E.G., WHITELIST, BLACKLIST, AND OTHER PREFERENCES), OCCUPANT CONTEXT, AND GOVERNING LAWS
1304
1308
BLOCK SIGNAL?
NO
1312
PRESENT SIGNAL TO OCCUPANT
Yes
1316
IGNORE COMPONENT, LOG SIGNAL, AND/OR NOTIFY REMOTE NODE OF SIGNAL

FIG. 13

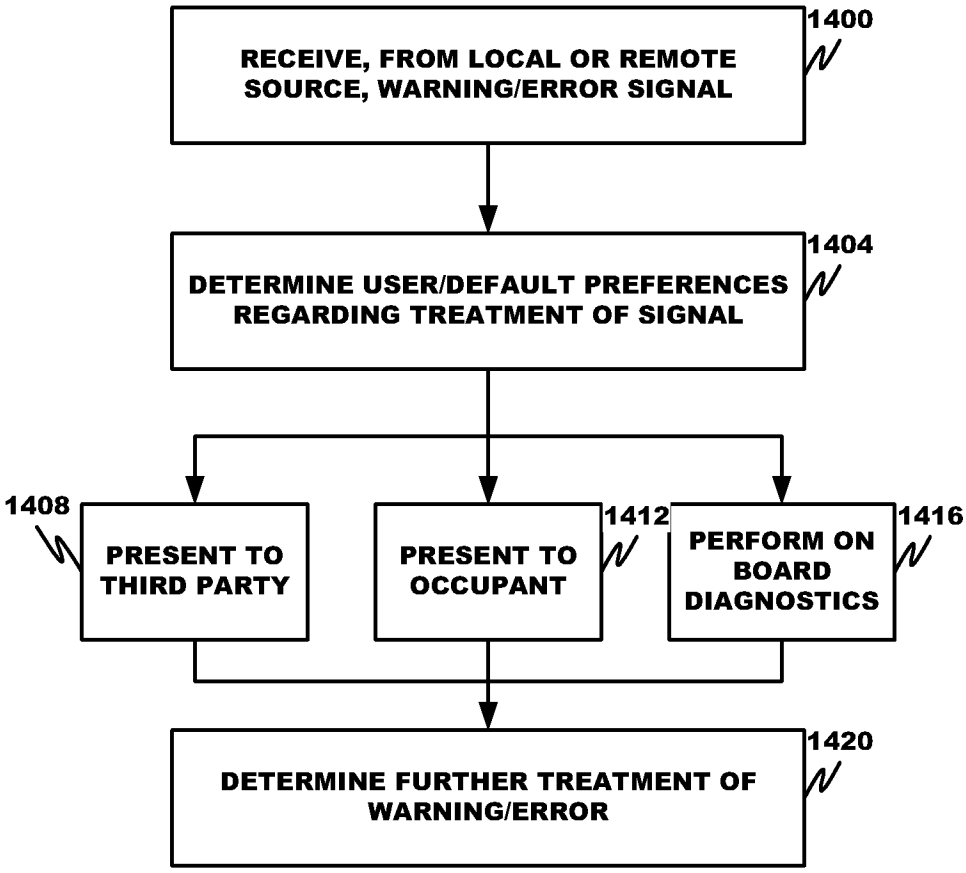

RECEIVE, FROM LOCAL OR REMOTE SOURCE, WARNING/ERROR SIGNAL
1400
DETERMINE USER/DEFAULT PREFERENCES REGARDING TREATMENT OF SIGNAL
1404
1408
PRESENT TO THIRD PARTY
PRESENT TO OCCUPANT
1412
PERFORM ON BOARD DIAGNOSTICS
1416
DETERMINE FURTHER TREATMENT OF WARNING/ERROR
1420

FIG. 14

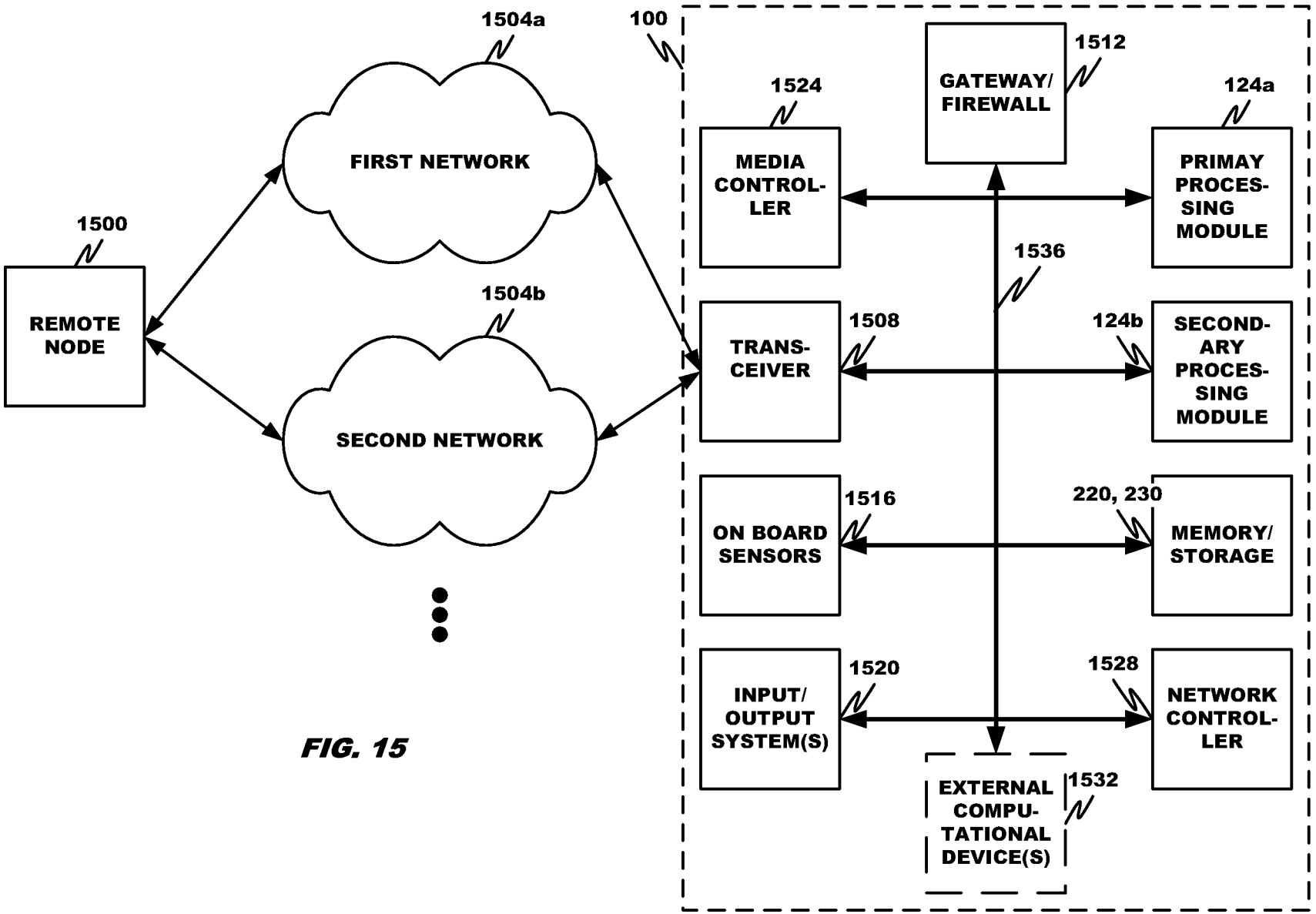

1504a
100
1512
GATEWAY/
FIREWALL
1524
124a
FIRST NETWORK
MEDIA
CONTROL-
LER
PRIMAY
PROCES-
SING
MODULE
1500
1536
1504b
REMOTE
NODE
1508
124b
TRANS-
CEIVER
SECOND-
ARY
PROCES-
SING
MODULE
SECOND NETWORK
1516
220, 230
ON BOARD
SENSORS
MEMORY/
STORAGE
1520
1528
INPUT/
OUTPUT
SYSTEM(S)
NETWORK
CONTROL-
LER
EXTERNAL
COMPU-
TATIONAL
DEVICE(S)
1532

FIG. 15

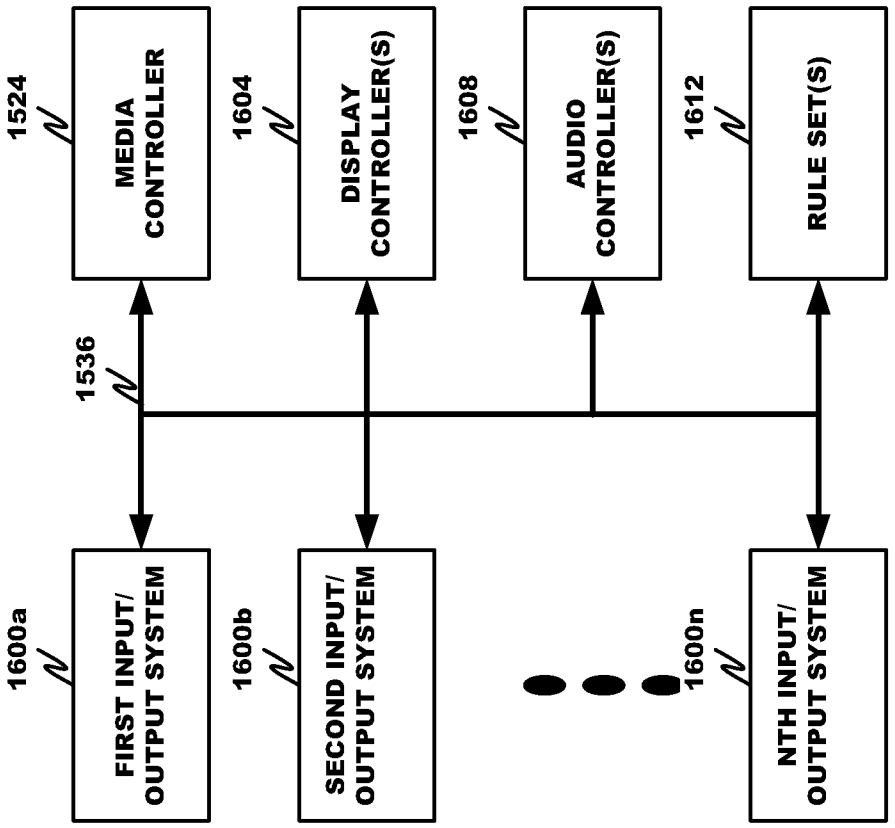

1524
MEDIA CONTROLLER
1604
DISPLAY CONTROLLER(S)
1608
AUDIO CONTROLLER(S)
1612
RULE SET(S)
1536
1600a
FIRST INPUT/ OUTPUT SYSTEM
1600b
SECOND INPUT/ OUTPUT SYSTEM
1600n
NTH INPUT/ OUTPUT SYSTEM

FIG. 16

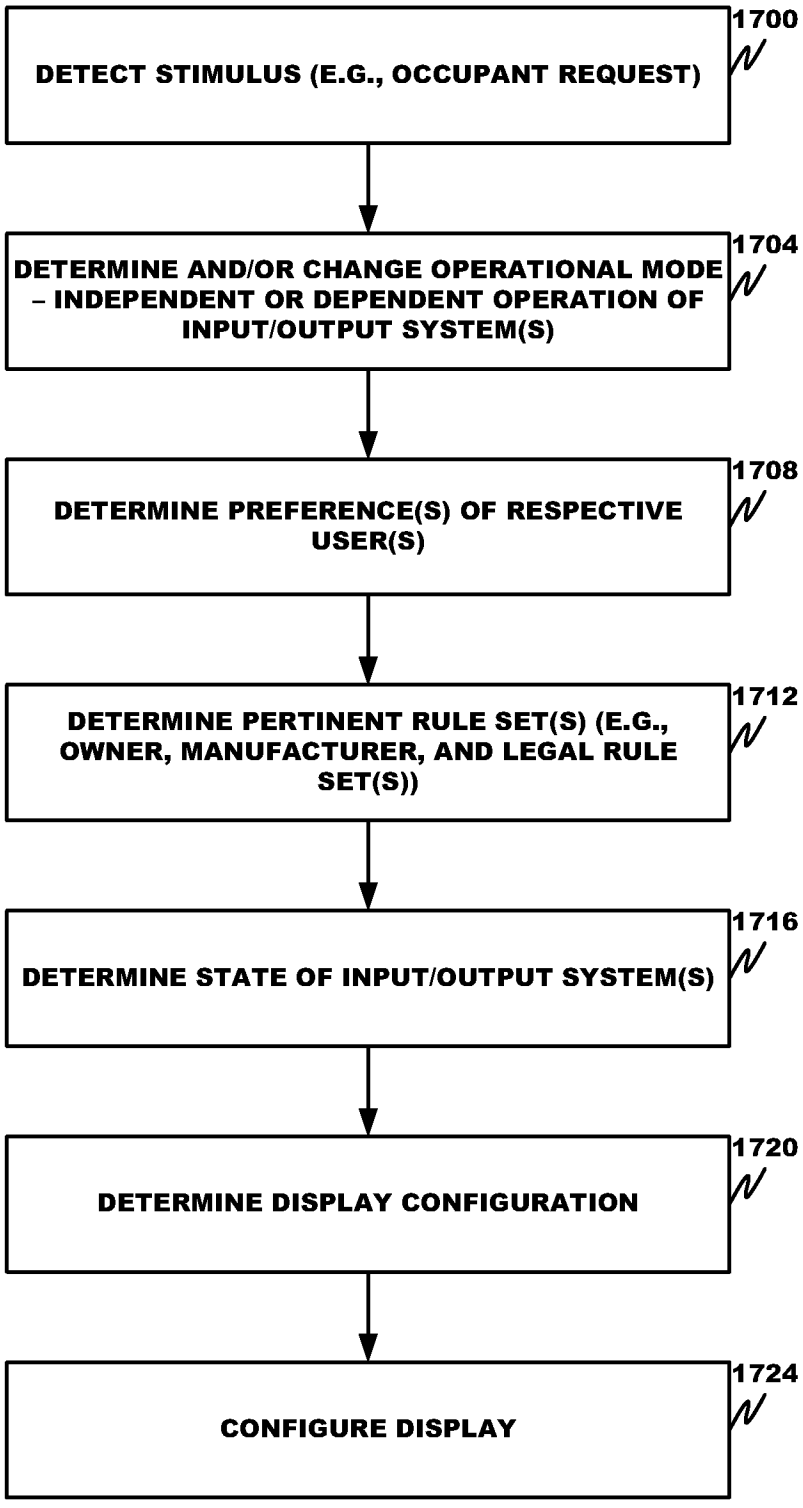

DETECT STIMULUS (E.G., OCCUPANT REQUEST)
1700
DETERMINE AND/OR CHANGE OPERATIONAL MODE – INDEPENDENT OR DEPENDENT OPERATION OF INPUT/OUTPUT SYSTEM(S)
1704
DETERMINE PREFERENCE(S) OF RESPECTIVE USER(S)
1708
DETERMINE PERTINENT RULE SET(S) (E.G., OWNER, MANUFACTURER, AND LEGAL RULE SET(S))
1712
DETERMINE STATE OF INPUT/OUTPUT SYSTEM(S)
1716
DETERMINE DISPLAY CONFIGURATION
1720
CONFIGURE DISPLAY
1724

FIG. 17

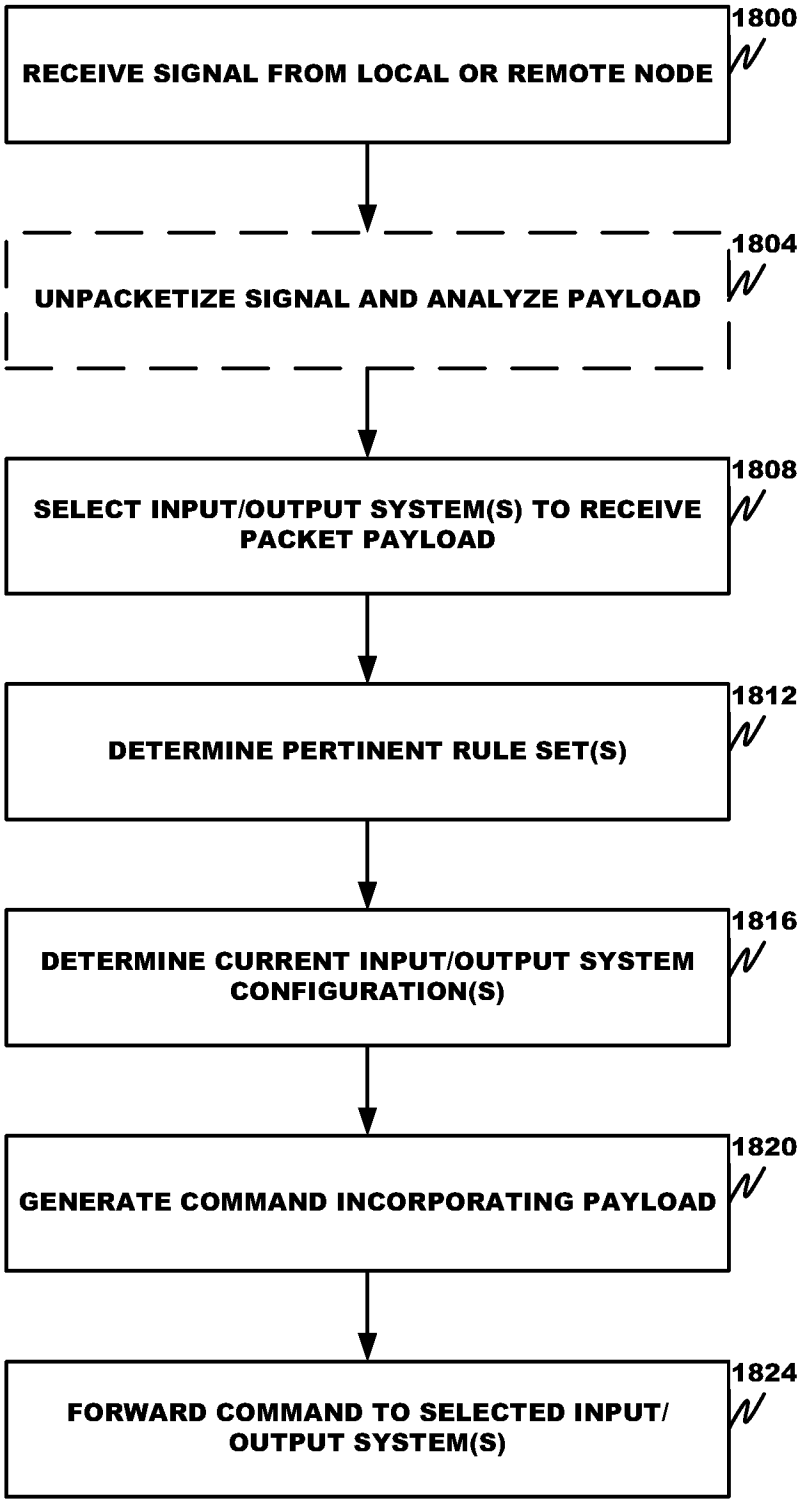

RECEIVE SIGNAL FROM LOCAL OR REMOTE NODE
1800
UNPACKETIZE SIGNAL AND ANALYZE PAYLOAD
1804
SELECT INPUT/OUTPUT SYSTEM(S) TO RECEIVE PACKET PAYLOAD
1808
DETERMINE PERTINENT RULE SET(S)
1812
DETERMINE CURRENT INPUT/OUTPUT SYSTEM CONFIGURATION(S)
1816
GENERATE COMMAND INCORPORATING PAYLOAD
1820
FORWARD COMMAND TO SELECTED INPUT/ OUTPUT SYSTEM(S)
1824

FIG. 18

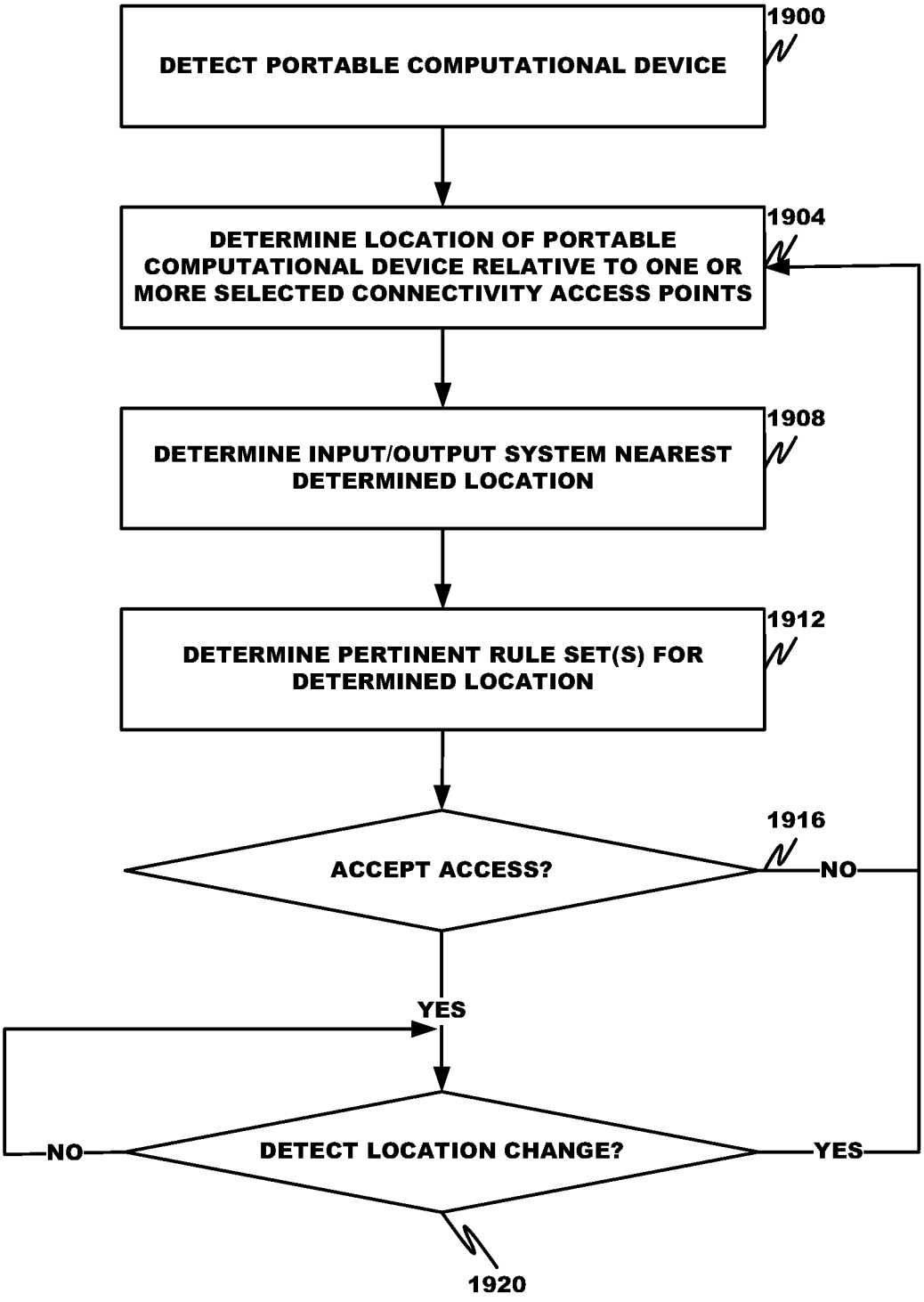

DETECT PORTABLE COMPUTATIONAL DEVICE
1900
DETERMINE LOCATION OF PORTABLE COMPUTATIONAL DEVICE RELATIVE TO ONE OR MORE SELECTED CONNECTIVITY ACCESS POINTS
1904
DETERMINE INPUT/OUTPUT SYSTEM NEAREST DETERMINED LOCATION
1908
DETERMINE PERTINENT RULE SET(S) FOR DETERMINED LOCATION
1912
ACCEPT ACCESS?
1916
NO
YES
DETECT LOCATION CHANGE?
NO
YES
1920

FIG. 19

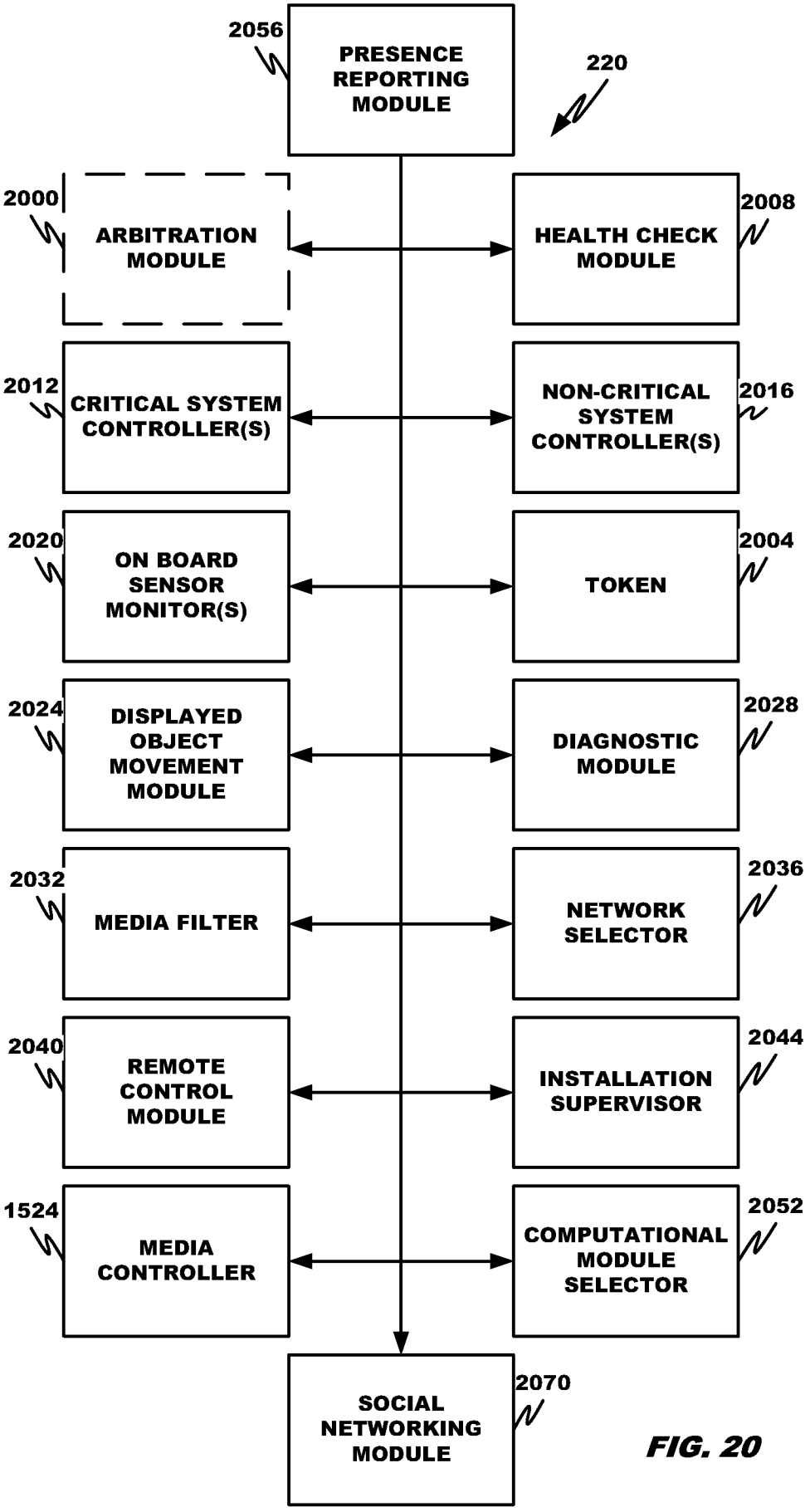

2056
PRESENCE REPORTING MODULE
220
2000
ARBITRATION MODULE
2008
HEALTH CHECK MODULE
2012
CRITICAL SYSTEM CONTROLLER(S)
2016
NON-CRITICAL SYSTEM CONTROLLER(S)
2020
ON BOARD SENSOR MONITOR(S)
2004
TOKEN
2024
DISPLAYED OBJECT MOVEMENT MODULE
2028
DIAGNOSTIC MODULE
2032
MEDIA FILTER
2036
NETWORK SELECTOR
2040
REMOTE CONTROL MODULE
2044
INSTALLATION SUPERVISOR
1524
MEDIA CONTROLLER
2052
COMPUTATIONAL MODULE SELECTOR
2070
SOCIAL NETWORKING MODULE

FIG. 20

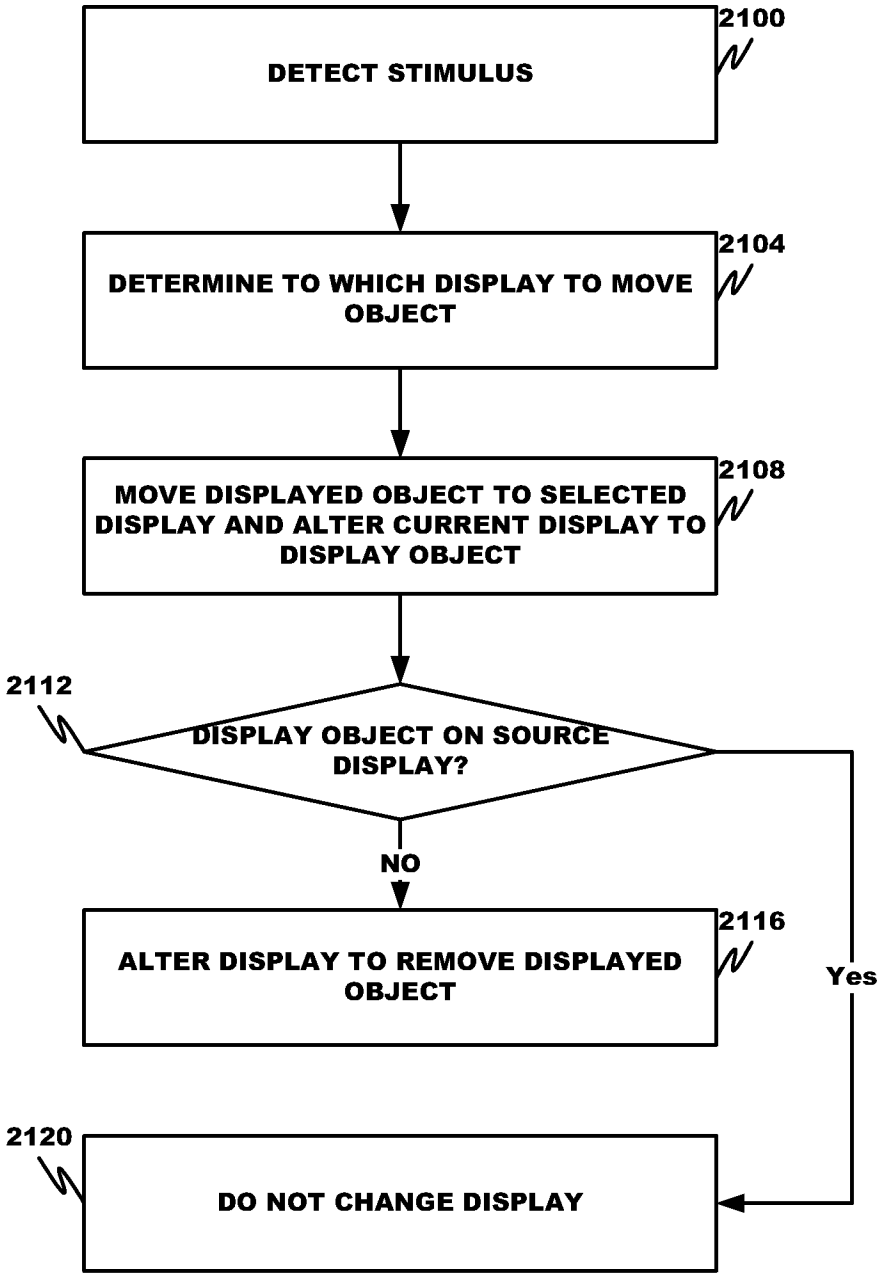

DETECT STIMULUS
2100
DETERMINE TO WHICH DISPLAY TO MOVE OBJECT
2104
MOVE DISPLAYED OBJECT TO SELECTED DISPLAY AND ALTER CURRENT DISPLAY TO DISPLAY OBJECT
2108
2112
DISPLAY OBJECT ON SOURCE DISPLAY?
NO
Yes
ALTER DISPLAY TO REMOVE DISPLAYED OBJECT
2116
2120
DO NOT CHANGE DISPLAY

FIG. 21

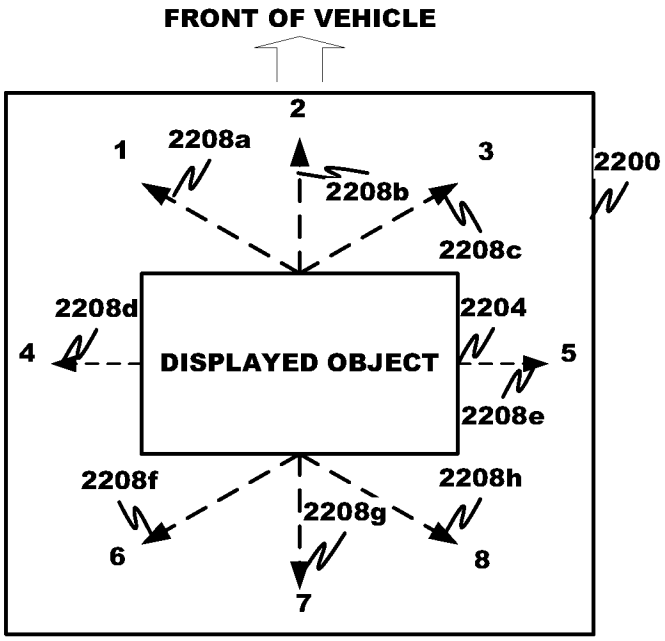


FIG. 22A

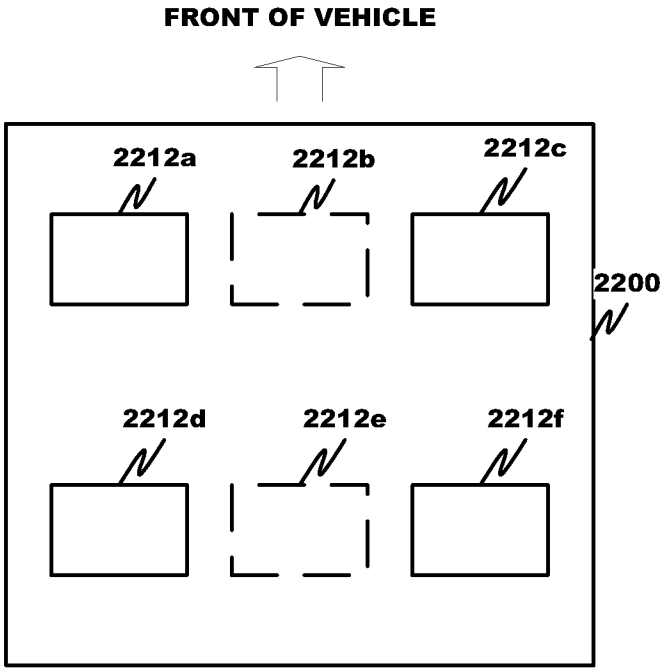


FIG. 22B

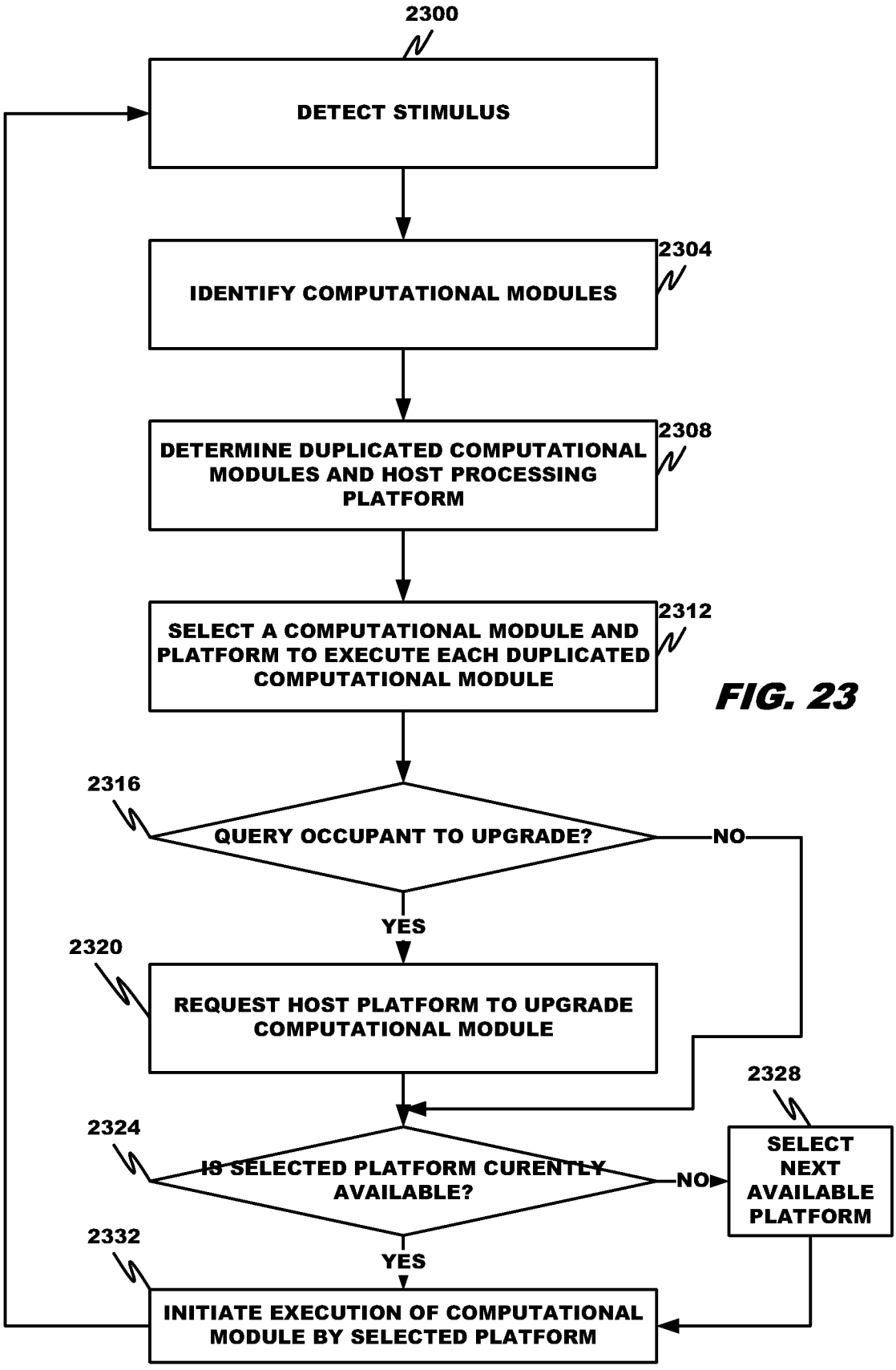

2300
DETECT STIMULUS
IDENTIFY COMPUTATIONAL MODULES
2304
DETERMINE DUPLICATED COMPUTATIONAL MODULES AND HOST PROCESSING PLATFORM
2308
SELECT A COMPUTATIONAL MODULE AND PLATFORM TO EXECUTE EACH DUPLICATED COMPUTATIONAL MODULE
2312
2316
QUERY OCCUPANT TO UPGRADE?
NO
YES
2320
REQUEST HOST PLATFORM TO UPGRADE COMPUTATIONAL MODULE
2328
2324
IS SELECTED PLATFORM CURENTLY AVAILABLE?
NO
SELECT NEXT AVAILABLE PLATFORM
2332
YES
INITIATE EXECUTION OF COMPUTATIONAL MODULE BY SELECTED PLATFORM

FIG. 23

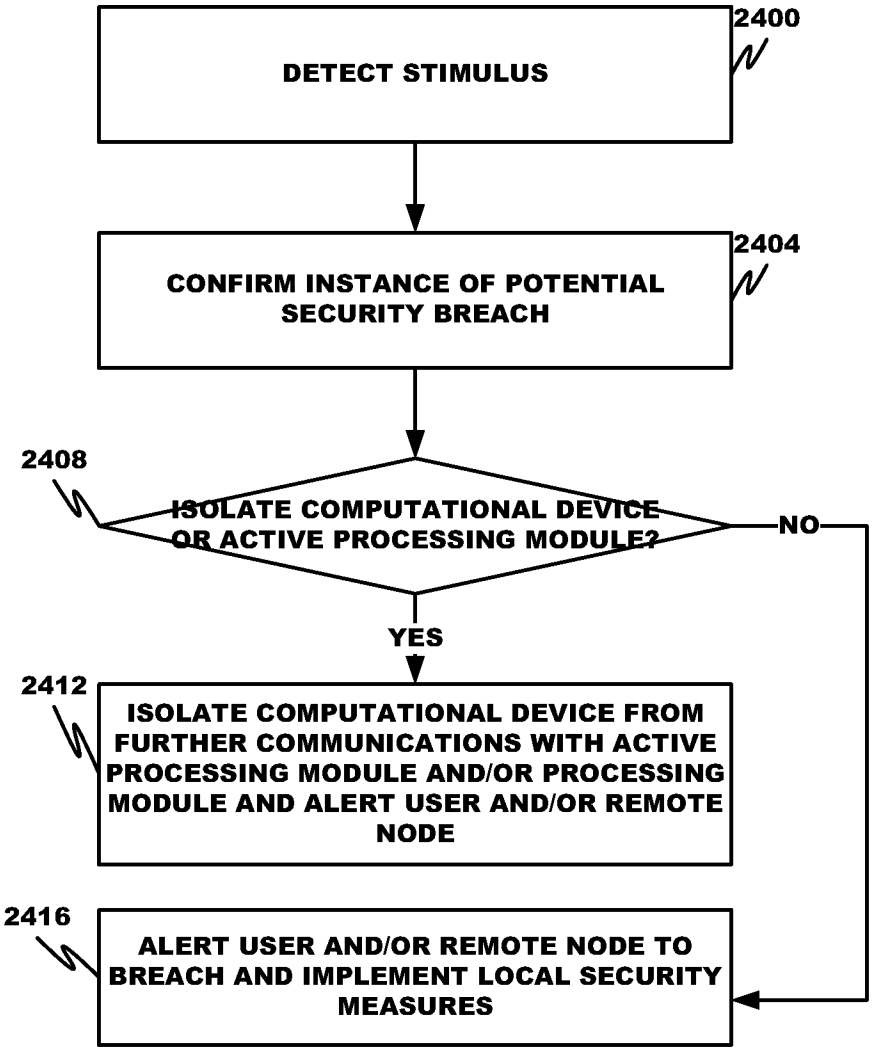

DETECT STIMULUS
2400
CONFIRM INSTANCE OF POTENTIAL SECURITY BREACH
2404
2408
ISOLATE COMPUTATIONAL DEVICE OR ACTIVE PROCESSING MODULE?
NO
YES
2412
ISOLATE COMPUTATIONAL DEVICE FROM FURTHER COMMUNICATIONS WITH ACTIVE PROCESSING MODULE AND/OR PROCESSING MODULE AND ALERT USER AND/OR REMOTE NODE
2416
ALERT USER AND/OR REMOTE NODE TO BREACH AND IMPLEMENT LOCAL SECURITY MEASURES

FIG. 24

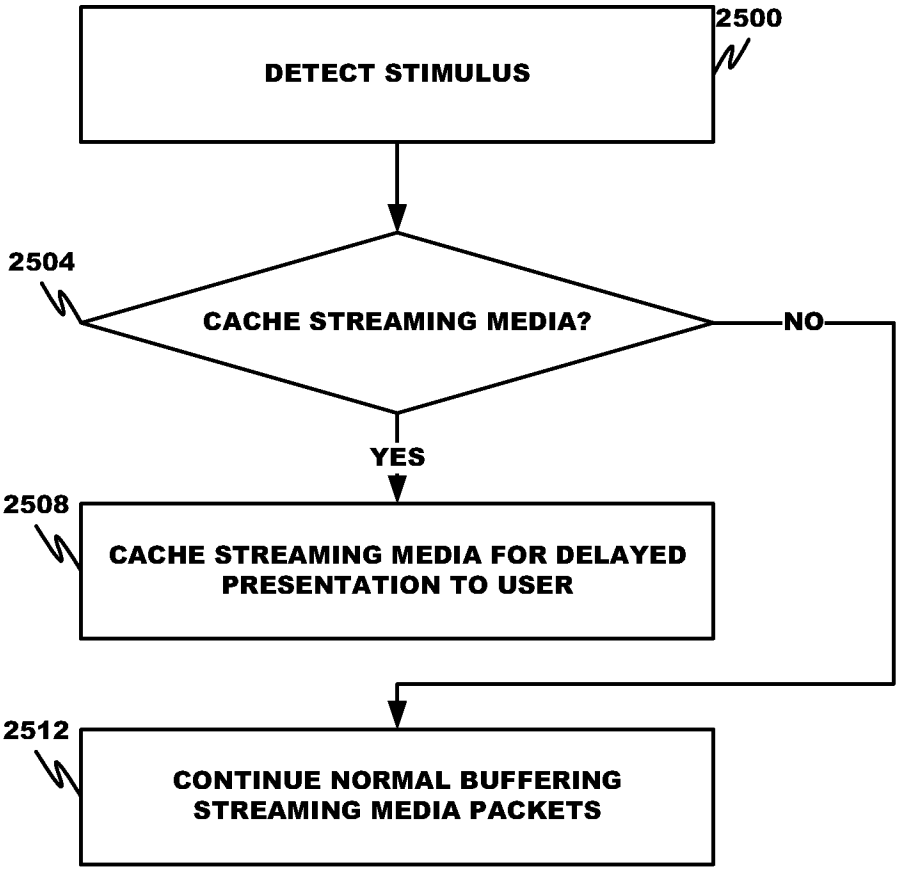

DETECT STIMULUS
2500
2504
CACHE STREAMING MEDIA?
NO
YES
2508
CACHE STREAMING MEDIA FOR DELAYED PRESENTATION TO USER
2512
CONTINUE NORMAL BUFFERING STREAMING MEDIA PACKETS

FIG. 25

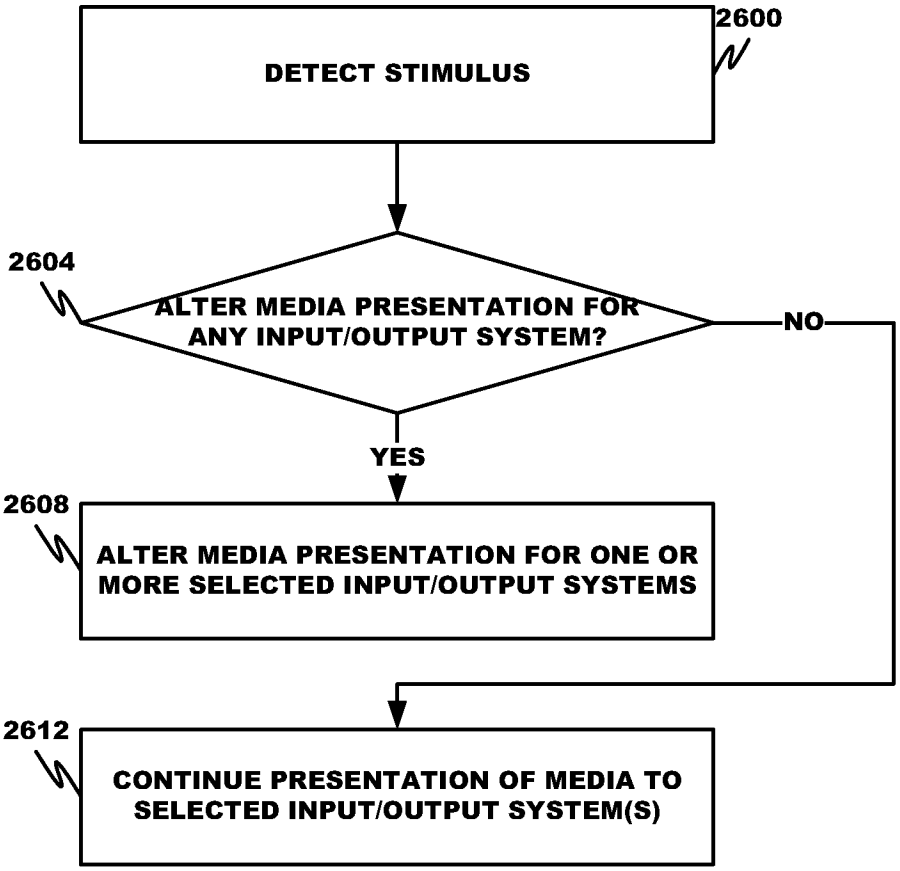

DETECT STIMULUS
2600
2604
ALTER MEDIA PRESENTATION FOR ANY INPUT/OUTPUT SYSTEM?
NO
YES
2608
ALTER MEDIA PRESENTATION FOR ONE OR MORE SELECTED INPUT/OUTPUT SYSTEMS
2612
CONTINUE PRESENTATION OF MEDIA TO SELECTED INPUT/OUTPUT SYSTEM(S)

FIG. 26

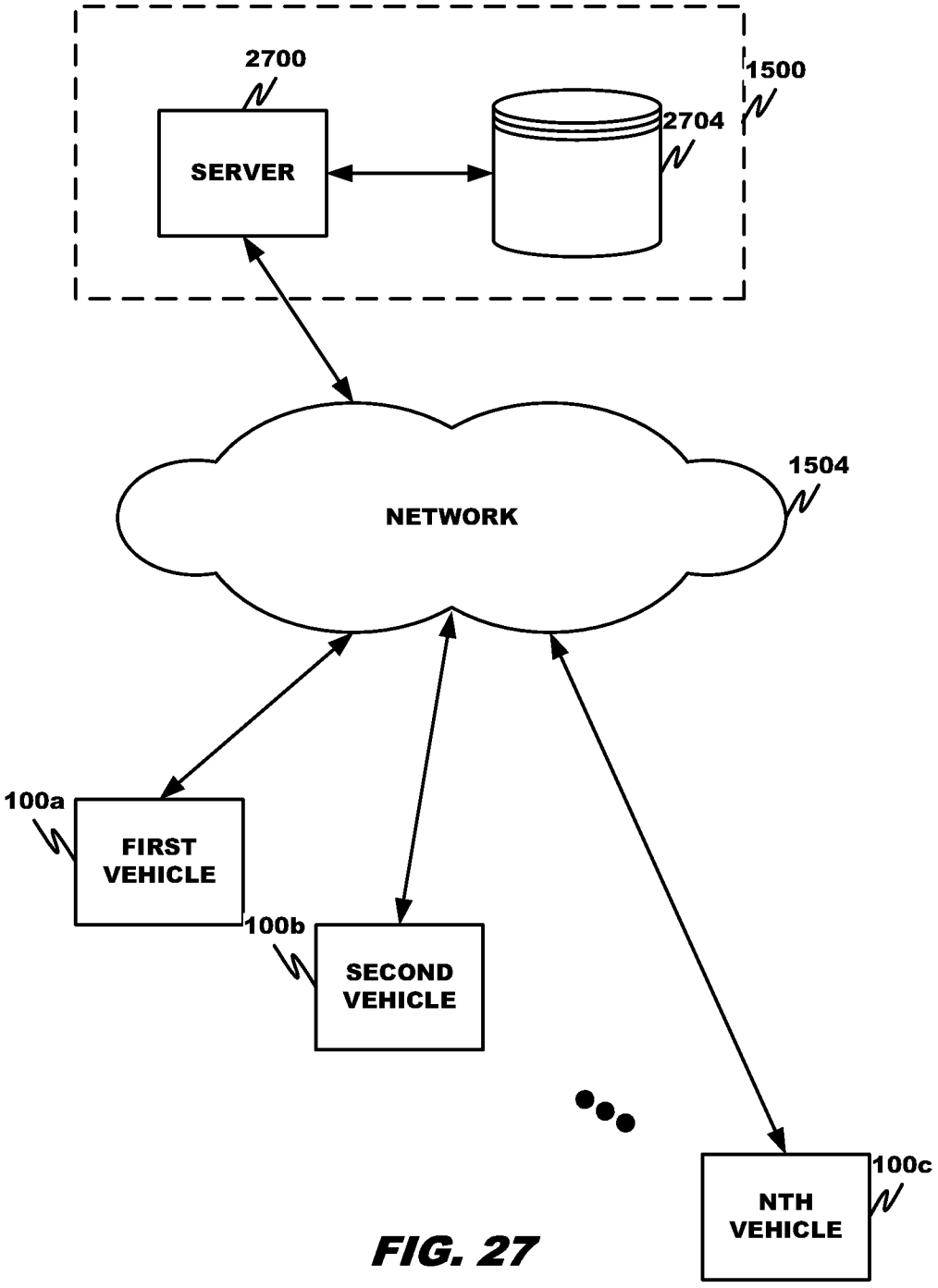

2700
1500
SERVER
2704
NETWORK
1504
100a
FIRST VEHICLE
100b
SECOND VEHICLE
100c
NTH VEHICLE

FIG. 27

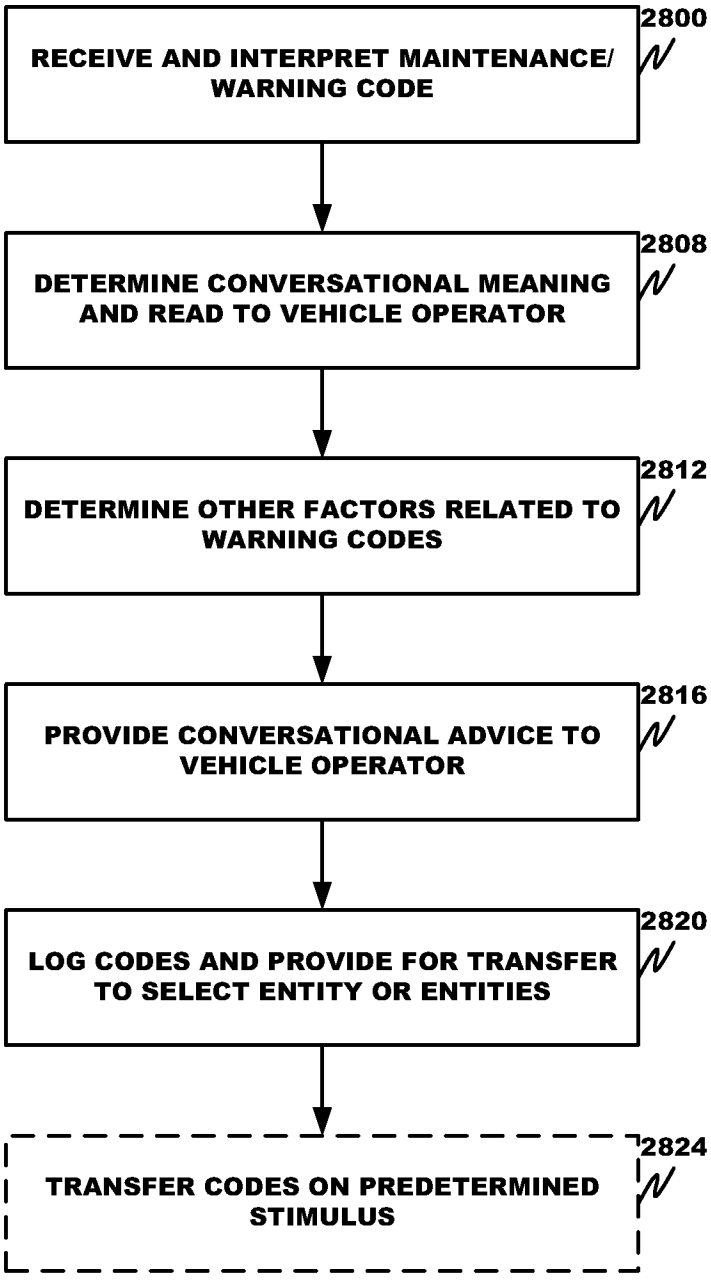

RECEIVE AND INTERPRET MAINTENANCE/ WARNING CODE
2800
DETERMINE CONVERSATIONAL MEANING AND READ TO VEHICLE OPERATOR
2808
DETERMINE OTHER FACTORS RELATED TO WARNING CODES
2812
PROVIDE CONVERSATIONAL ADVICE TO VEHICLE OPERATOR
2816
LOG CODES AND PROVIDE FOR TRANSFER TO SELECT ENTITY OR ENTITIES
2820
TRANSFER CODES ON PREDETERMINED STIMULUS
2824

FIG. 28

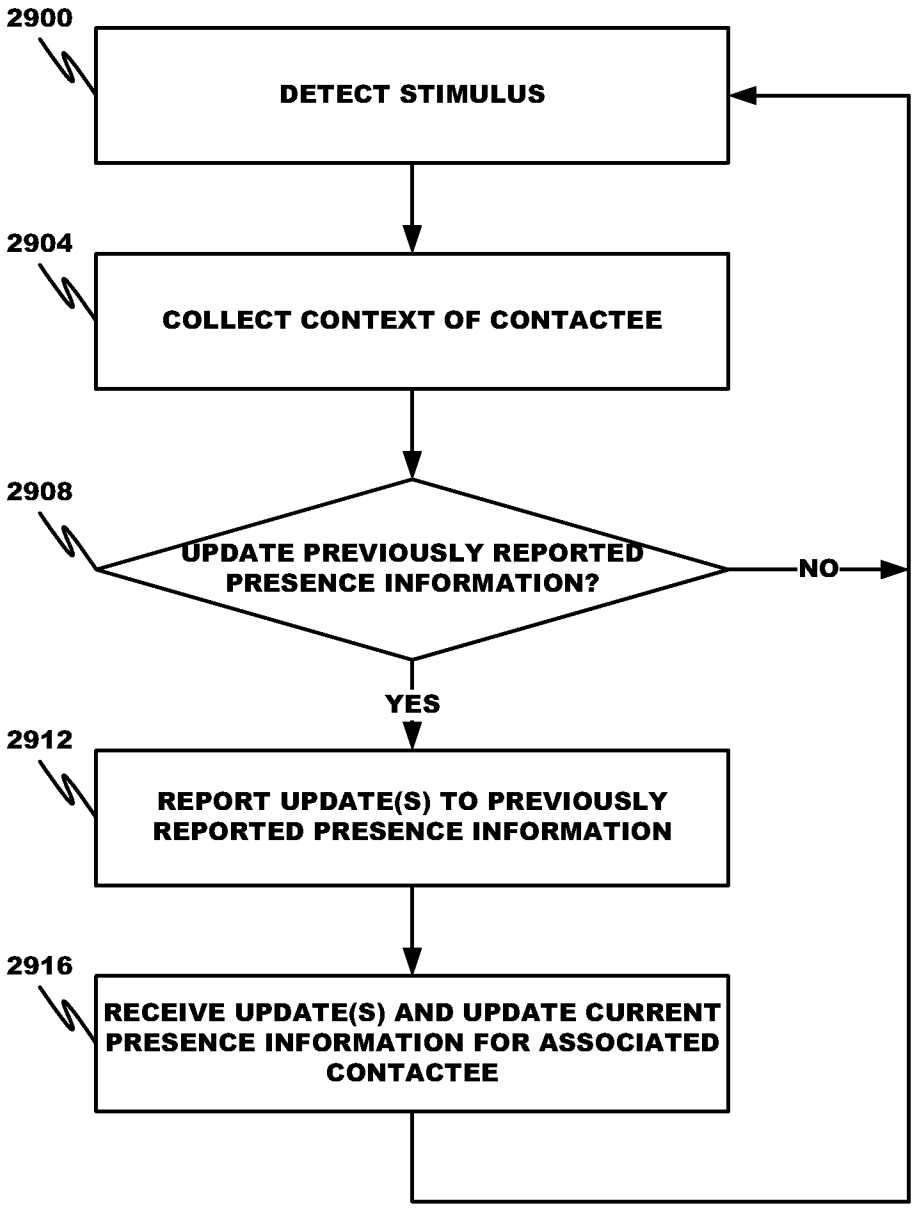

2900
DETECT STIMULUS
2904
COLLECT CONTEXT OF CONTACTEE
2908
UPDATE PREVIOUSLY REPORTED PRESENCE INFORMATION?
NO
YES
2912
REPORT UPDATE(S) TO PREVIOUSLY REPORTED PRESENCE INFORMATION
2916
RECEIVE UPDATE(S) AND UPDATE CURRENT PRESENCE INFORMATION FOR ASSOCIATED CONTACTEE

FIG. 29

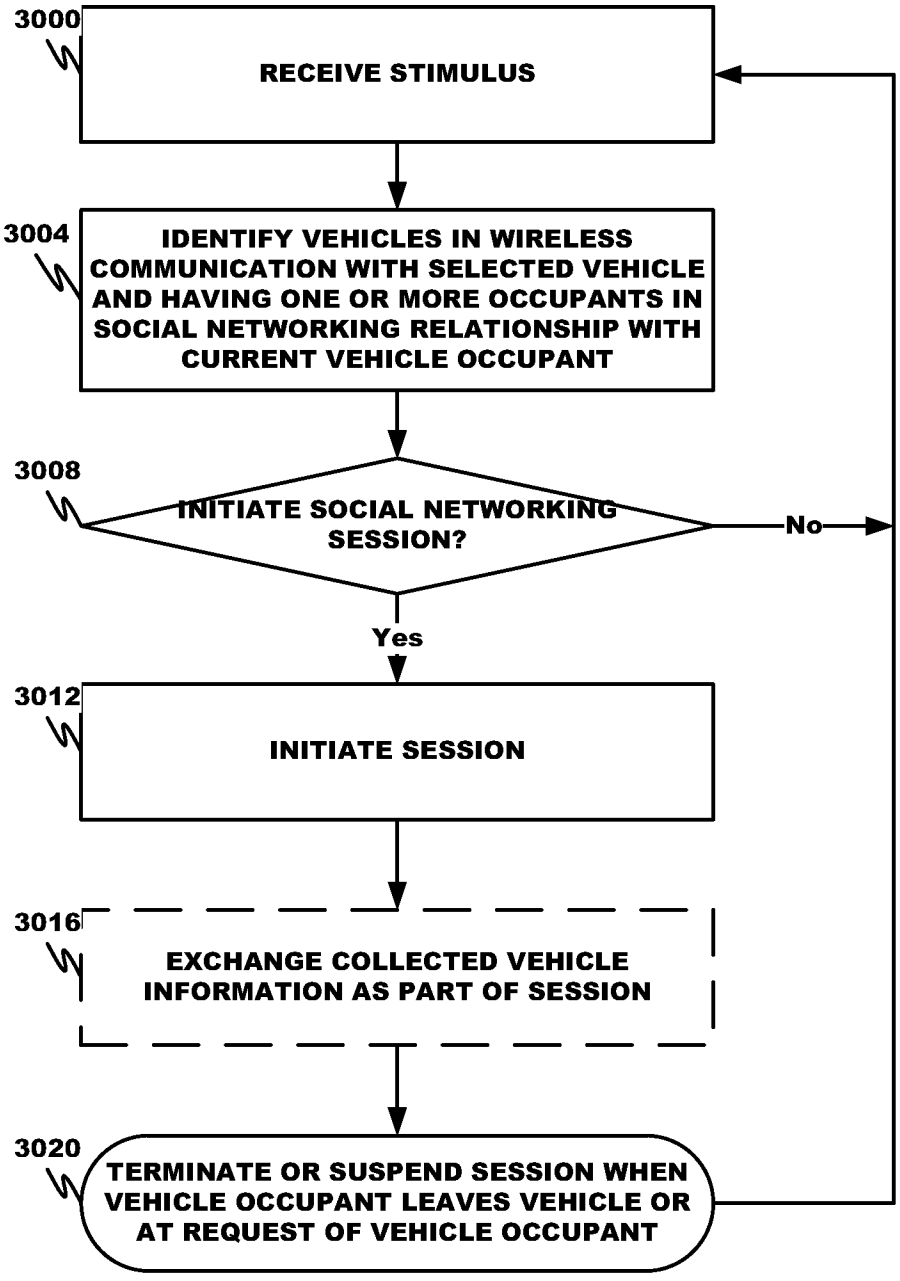

3000
RECEIVE STIMULUS
3004
IDENTIFY VEHICLES IN WIRELESS COMMUNICATION WITH SELECTED VEHICLE AND HAVING ONE OR MORE OCCUPANTS IN SOCIAL NETWORKING RELATIONSHIP WITH CURRENT VEHICLE OCCUPANT
3008
INITIATE SOCIAL NETWORKING SESSION?
No
Yes
3012
INITIATE SESSION
3016
EXCHANGE COLLECTED VEHICLE INFORMATION AS PART OF SESSION
3020
TERMINATE OR SUSPEND SESSION WHEN VEHICLE OCCUPANT LEAVES VEHICLE OR AT REQUEST OF VEHICLE OCCUPANT

FIG. 30

Electronic Acknowledgement Receipt

EFS ID:	14253450
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	22442
Filer:	Douglas W. Swartz/Christine Jacquet
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	16-NOV-2012
Filing Date:	
Time Stamp:	16:47:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	6583-247-ADS.pdf	1068059 35893949ef3958cd95df59f5591b0025a6a3674b	no	6

Warnings:	
Information:	

2		6583-247-PatentAppFinal.pdf	343153 a9f6dcd2de55a10d5fff9a80c4ba68f27d92aaa7	yes	89

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Specification	1	83
Claims	84	88
Abstract	89	89

Warnings:

Information:

3	Drawings-only black and white line drawings	6583-247DrawingsFinal.pdf	129253 2780c5d6ce9e4bb6fdb2e68ed631c9e50e9690a0	no	30

Warnings:

Information:

Total Files Size (in bytes):	1540465

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/679,476

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	390
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	620
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*			OR	x 62 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*				x 250 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1260

APPLICATION AS AMENDED - PART II

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/679,476	11/16/2012	2111	0.00	6583-247	20	1

CONFIRMATION NO. 2650

22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

FILING RECEIPT

OC00000058085710

Date Mailed: 12/13/2012

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

Inventor(s)

Christopher P. Ricci, Saratoga, CA;
Douglas W. Swartz, Wheat Ridge, CO;

Applicant(s)

Flextronics AP, LLC, Milpitas, CA

Assignment For Published Patent Application

Flextronics AP, LLC, Milpitas, CA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/560,509 11/16/2011
and claims benefit of 61/637,164 04/23/2012
and claims benefit of 61/646,747 05/14/2012
and claims benefit of 61/653,275 05/30/2012
and claims benefit of 61/653,264 05/30/2012
and claims benefit of 61/653,563 05/31/2012
and claims benefit of 61/663,335 06/22/2012
and claims benefit of 61/672,483 07/17/2012
and claims benefit of 61/714,016 10/15/2012

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

If Required, Foreign Filing License Granted: 12/10/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/679,476**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

VEHICLE MIDDLEWARE

Preliminary Class

710

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/679,476	11/16/2012	Christopher P. Ricci	6583-247

CONFIRMATION NO. 2650

22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

FORMALITIES LETTER

OC00000058085711

Date Mailed: 12/13/2012

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  *Applicant must submit $**390** to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).*

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A surcharge (for late submission of the basic filing fee, search fee, examination fee or inventor's oath or declaration) as set forth in 37 CFR 1.16(f) of $ **130** for a non-small entity, must be submitted.

SUMMARY OF FEES DUE:

Total fee(s) required within **TWO MONTHS** from the date of this Notice is $ **1390** for a non-small entity
- $ **390** Statutory basic filing fee.
- $ **130** Surcharge.
- The application search fee has not been paid. Applicant must submit $ **620** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit $ **250** to complete the examination fee for a non-small entity.

Items Required To Avoid Processing Delays:

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

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):

All
Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/ebanaybanay/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: RICCI et al. Serial No.: 13/679,476 Filed: November 16, 2012 Atty. File No.: 6583-247 Entitled: "VEHICLE MIDDLEWARE"	Group Art Unit: 2111 Confirmation No.: 2650 Examiner: Not Yet Assigned ***Submitted Via EFS-Web***

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE TO FILE MISSING PARTS

Dear Sir/Madam:

In response to the Notice to File Missing Parts of Nonprovisional Application mailed December 13, 2012, in connection with the above-identified application, enclosed for filing are executed Declarations by both inventors. Also submitted herewith via EFS-Web is the amount of $1,390.00, which constitutes the statutory basic filing fee, search fee, examination fee, and surcharge. A new Application Data Sheet is submitted concurrently herewith, with changes shown by underlining and strikethrough, and it is requested that a Corrected Filing Receipt be issued.

Please credit any overpayment or debit any underpayment to Deposit Account No. 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Tadd F. Wilson/
Tadd F. Wilson
Registration No. 54544
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: February 13, 2013

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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

Title of Invention	VEHICLE MIDDLEWARE

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 13/679,476

filed on November 16, 2012.

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

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

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

WARNING:

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

LEGAL NAME OF INVENTOR

Inventor: Douglas W. Swartz Date (Optional): 2/11/13

Signature: Douglas W. Swartz

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

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

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

PTO/AIA/14 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	13/679,476
Title of Invention	VEHICLE MIDDLEWARE	

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

Secrecy Order 37 CFR 5.2

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Christopher	P.	Ricci	

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

City	Saratoga	State/Province	CA	Country of Residence	US

Mailing Address of Inventor:

Address 1	20650 4th Street, Unit 2		
Address 2			
City	Saratoga	State/Province	CA
Postal Code	95070	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Douglas	W.	Swartz	

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

City	Wheat Ridge	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	3850 Ammons St.		
Address 2			
City	Wheat Ridge	State/Province	CO
Postal Code	80033	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

PTO/AIA/14 (08-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	~~22442~~ 111285		
Email Address	~~srlaw@sheridanross.com~~ flexpatents@sheridanross.com	Add Email	Remove Email

Application Information:

Title of the Invention	VEHICLE MIDDLEWARE		
Attorney Docket Number	6583-247	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	30	**Suggested Figure for Publication (if any)**	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

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

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	~~22442~~		

Domestic Benefit/National Stage Information:

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

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61560509	2011-11-16

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61637164	2012-04-23
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61646747	2012-05-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653275	2012-05-30
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653264	2012-05-30
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61653563	2012-05-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61663335	2012-06-22
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61672483	2012-07-17
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61714016	2012-10-15
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61/715699	2012-10-18

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

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Priority Claimed
			○ Yes ◉ No

PTO/AIA/14 (08-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

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

Authorization to Permit Access:

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

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

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

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

Applicant Information:

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

Applicant 1

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

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

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

Name of the Deceased or Legally Incapacitated Inventor :	
If the Assignee is an Organization check here. ☒	

PTO/AIA/14 (08-12)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-247
	Application Number	
Title of Invention	VEHICLE MIDDLEWARE	

Organization Name	Flextronics AP, LLC		
Mailing Address Information:			
Address 1	847 Gibraltar Drive, Building 5		
Address 2			
City	Milpitas	**State/Province**	CA
Country	US	Postal Code	95035
Phone Number		Fax Number	
Email Address			

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

Signature:

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

Signature	/Tadd F. Wilson/			Date (YYYY-MM-DD)	2013-02-13
First Name	Tadd F.	Last Name	Wilson	Registration Number	54544

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: RICCI et al. Serial No.: 13/679,476 Filed: November 16, 2012 Atty. File No.: 6583-247 Entitled: "VEHICLE MIDDLEWARE"	Group Art Unit: 2111 Confirmation No.: 2650 Examiner: Not Yet Assigned ***Submitted Via EFS-Web***

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

PRELIMINARY AMENDMENT

Dear Sir or Madam:

Prior to the initial review of the above-identified application on the merits, please enter the following Preliminary Amendment.

Amendments to the Specification begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

Ford Ex. 1161 Page 141 of 520

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning on page 1, line 4 of the specification, as follows:

The present application claims the benefits of U.S. Provisional Application Serial Nos. 61/560,509, filed November 16, 2011; 61/637,164, filed April 23, 2012; and 61/663,335, filed June 22, 2012, all entitled "COMPLETE VEHICLE ECOSYSTEM", 61/646,747, filed on May 14, 2012, entitled "Branding of Electrically Propelled Vehicles Via the Generation of Specific Operating Sounds"; 61/653,275, filed on May 30, 2012, entitled "Vehicle Application Store for Console"; 61/653,264, filed on May 30, 2012, entitled "Control of Device Features Based on Vehicle State"; 61/653,563, filed on May 31, 2012, entitled "Complete Vehicle Ecosystem"; 61/672,483, filed on July 17, 2012, entitled "Vehicle Climate Control"; 61/714,016, filed on October 15, 2012, entitled "Vehicle Middleware;" and 61/715,699, filed on October 18, 2012, entitled "Vehicle Middleware;" each of which is incorporated herein by this reference in its entirety.

Please amend the paragraph beginning on page 1, line 14 of the specification, as follows:

Cross reference is made to U.S. Patent Application Nos. 13/420,236, filed on March 14, 2012, entitled, "Configurable Vehicle Console"; 13/420,240, filed on March 14, 2012, entitled "Removable, Configurable Vehicle Console"; 13/462,593, filed on May 2, 2012, entitled "Configurable Dash Display"; 13/462,596, filed on May 2, 2012, entitled "Configurable Heads-Up Dash Display"; ~~__/___,___~~13/679,459, filed on November 16, 2012, entitled "~~Implementation of Conquest Functionality in Automotive Console~~Vehicle Comprising Multi-Operating System" (Attorney Docket No. 6583-228); ~~__/___,___~~13/679,234, filed on November 16, 2012, entitled "Gesture Recognition for On-Board Display" (Attorney Docket No. 6583-229); ~~__/___,___~~13/679,412, filed on November 16, 2012, entitled "Vehicle Application Store for Console" (Attorney Docket No. 6583-230); ~~__/___,___~~13/679,857, filed on November 16, 2012, entitled "Sharing Applications/Media Between Car and Phone (Hydroid)" (Attorney Docket No. 6583-231); ~~__/___,___~~13/679,878, filed on November 16, 2012, entitled "In-Cloud Connection for Car Multimedia" (Attorney Docket No. 6583-232); ~~__/___,___~~13/679,875, filed on November 16, 2012, entitled "Music Streaming" (Attorney Docket No. 6583-233); ~~__/___,___~~13/679,676, filed on November 16, 2012, entitled "Control of Device Features Based on Vehicle State" (Attorney Docket No. 6583-234); ~~__/___,___~~13/678,673, filed on November 16, 2012, entitled "Insurance Tracking" (Attorney Docket No. 6583-235);

Ford Ex. 1161 Page 142 of 520

~~__/___,___~~,13/678,691, filed on November 16, 2012, entitled "Law Breaking/Behavior Sensor" (Attorney Docket No. 6583-236); ~~__/___,___~~,13/678,699, filed on November 16, 2012, entitled "Etiquette Suggestion" (Attorney Docket No. 6583-237); ~~__/___,___~~,13/678,710, filed on November 16, 2012, entitled "Parking Space Finder Based on Parking Meter Data" (Attorney Docket No. 6583-238); ~~__/___,___~~,13/678,722, filed on November 16, 2012, entitled "Parking Meter Expired Alert" (Attorney Docket No. 6583-239); ~~__/___,___~~,13/678,726, filed on November 16, 2012, entitled "Object Sensing (Pedestrian Avoidance/Accident Avoidance)" (Attorney Docket No. 6583-240); ~~__/___,___~~,13/678,735, filed on November 16, 2012, entitled "Proximity Warning Relative to Other Cars" (Attorney Docket No. 6583-241); ~~__/___,___~~,13/678,745, filed on November 16, 2012, entitled "Street Side Sensors" (Attorney Docket No. 6583-242); ~~__/___,___~~,13/678,753, filed on November 16, 2012, entitled "Car Location" (Attorney Docket No. 6583-243); ~~__/___,___~~,13/679,441, filed on November 16, 2012, entitled "Universal Bus in the Car" (Attorney Docket No. 6583-244); ~~__/___,___~~,13/679,864, filed on November 16, 2012, entitled "Mobile Hot Spot/Router/Application Share Site or Network" (Attorney Docket No. 6583-245); ~~__/___,___~~,13/679,815, filed on November 16, 2012, entitled "Universal Console Chassis for the Car" (Attorney Docket No. 6583-246); ~~__/___,___, filed on November 16, 2012, entitled "Middleware" (Attorney Docket No. 6583-247);~~ ~~__/___,___~~,13/679,306, filed on November 16, 2012, entitled "~~Real Time~~Method and System for Vehicle Data Collection Regarding Traffic" (Attorney Docket No. 6583-248); ~~__/___,___~~,13/679,369, filed on November 16, 2012, entitled "~~Map Updating~~Method and System for Vehicle Data Collection" (Attorney Docket No. 6583-249); ~~__/___,___~~,13/679,680, filed on November 16, 2012, entitled "Communications Based on Vehicle Diagnostics and Indications" (Attorney Docket No. 6583-250); ~~__/___,___~~,13/679,443, filed on November 16, 2012, entitled "~~Felon Identifier~~Method and System for Maintaining and Reporting Vehicle Occupant Information" (Attorney Docket No. 6583-251); ~~__/___,___~~,13/678,762, filed on November 16, 2012, entitled "Behavioral Tracking and Vehicle Applications" (Attorney Docket No. 6583-252); __/___,___, filed on November 16, 2012, entitled "Improvements to Controller Area Network Bus" (Attorney Docket No. 6583-314); ~~__/___,___~~,13/678,773, filed on November 16, 2012, entitled "Location Information Exchange Between Vehicle and Device" (Attorney Docket No. 6583-315); ~~__/___,___~~,13/679,887, filed on November 16, 2012, entitled "In Car Communication Between Devices" (Attorney Docket No. 6583-316); ~~__/___,___~~,13/679,842, filed on November 16, 2012, entitled "Configurable

Ford Ex. 1161 Page 143 of 520

Hardware Unit for Car Systems" (Attorney Docket No. 6583-317); ~~__/___,___,~~13/679,204, filed on November 16, 2012, entitled "Feature Recognition for Configuring a Vehicle Console and Associated Devices" (Attorney Docket No. 6583-318); ~~__/___,___,~~13/679,350, filed on November 16, 2012, entitled "Configurable Vehicle Console" (Attorney Docket No. 6583-412); ~~__/___,___,~~13/679,358, filed on November 16, 2012, entitled "Configurable Dash Display" (Attorney Docket No. 6583-413); ~~__/___,___,~~13/679,363, filed on November 16, 2012, entitled "Configurable Heads-Up Dash Display" (Attorney Docket No. 6583-414); and ~~__/___,___,~~13/679,368, filed on November 16, 2012, entitled "Removable, Configurable Vehicle Console" (Attorney Docket No. 6583-415). The entire disclosures of the applications listed above are hereby incorporated by reference, in their entirety, for all that they teach and for all purposes.

REMARKS

This Preliminary Amendment updates the priority information. Since this Preliminary Amendment only amends a benefit claim to prior-filed applications under 35 U.S.C. 120, 121, 365(c), or 119(e), no substitute specification is required (1300 OG 69). Submitted herewith is an Application Data Sheet indicating changes by underlining for insertions and strikethrough for deletions. No fees are believed to be due for the filing of this paper. However, if this is in error, please debit any underpayment to Deposit Account No. 19-1970.

Any questions or concerns regarding this Preliminary Amendment should be addressed to the below-named attorney at (303) 863-9700.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Tadd F. Wilson/
Tadd F. Wilson
Registration No. 54,544
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: February 13, 2013

Ford Ex. 1161 Page 145 of 520

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Tadd Fjelp Wilson/Amy Duarte
Attorney Docket Number:	6583-247

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	390	390
Utility Search Fee	1111	1	620	620
Utility Examination Fee	1311	1	250	250
Pages:				
Claims:				
Miscellaneous-Filing:				
Late filing fee for oath or declaration	1051	1	130	130
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	1390

Electronic Acknowledgement Receipt

EFS ID:	14948749
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	22442
Filer:	Tadd Fjelp Wilson/Amy Duarte
Filer Authorized By:	Tadd Fjelp Wilson
Attorney Docket Number:	6583-247
Receipt Date:	13-FEB-2013
Filing Date:	16-NOV-2012
Time Stamp:	14:18:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1390
RAM confirmation Number	615
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	2013-02-13_Response_to_Missing_Parts_6583-247.pdf	113167 6c0c5ba3c54a3efbd5d19f140911bbcf01a76adb	no	1
Warnings:					
Information:					
2	Oath or Declaration filed	6583-247_Executed_Declaration_RICCI.pdf	131679 e490cb7e9b7ce5d47015490bbe46bee2d603ee6f	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	6583-247_Executed_Declaration_SWARTZ.pdf	136138 ce0ca4f6c9e56164230f026842f1aab027770fb7	no	1
Warnings:					
Information:					
4	Application Data Sheet	2013-02-13_ADS_6583-247.pdf	95674 d6bfc67c3fd38e8778168efde0fb34dd58257d79	no	5
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
5		2013-02-13_Preliminary_Amendment_6583-247.pdf	129269 8a620b62a5952193fc9e17abc5df9ebc78bedb8f	yes	5

Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	1
Specification	2	4
Applicant Arguments/Remarks Made in an Amendment	5	5

Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	36848 7872a94a4c3eb8d7ab57dce047c52d1ec008edd6	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	642775	

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

Title of Invention	VEHICLE MIDDLEWARE

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 13/679,476

filed on November 16, 2012.

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

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

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

WARNING:

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

LEGAL NAME OF INVENTOR

Inventor: Christopher P. Ricci Date (Optional) :

Signature:

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

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

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

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/679,476	Filing Date 11/16/2012	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	02/13/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $62=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $250=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ROSA WEST/

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

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

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/679,476

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	390
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	620
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*			OR	x 62 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*				x 250 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1260

APPLICATION AS AMENDED - PART II

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

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

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

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/679,476	11/16/2012	2111	1390	6583-247	20	1

CONFIRMATION NO. 2650

UPDATED FILING RECEIPT

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

OC000000059399651

Date Mailed: 02/25/2013

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

Inventor(s)

Christopher P. Ricci, Saratoga, CA;
Douglas W. Swartz, Wheat Ridge, CO;

Applicant(s)

Flextronics AP, LLC, Milpitas, CA

Assignment For Published Patent Application

Flextronics AP, LLC, Milpitas, CA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/560,509 11/16/2011
and claims benefit of 61/637,164 04/23/2012
and claims benefit of 61/646,747 05/14/2012
and claims benefit of 61/653,275 05/30/2012
and claims benefit of 61/653,264 05/30/2012
and claims benefit of 61/653,563 05/31/2012
and claims benefit of 61/663,335 06/22/2012
and claims benefit of 61/672,483 07/17/2012
and claims benefit of 61/714,016 10/15/2012
and claims benefit of 61/715,699 10/18/2012

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

If Required, Foreign Filing License Granted: 12/10/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/679,476**

Projected Publication Date: 06/06/2013

Non-Publication Request: No

Early Publication Request: No

Title

VEHICLE MIDDLEWARE

Preliminary Class

710

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Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82A (07-12)

Approved for use through 11/30/2014. OMB 0651-0035

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NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B or equivalent) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5. If the Power of Attorney by Applicant form is not accompanied by this transmittal form or an equivalent, the Power of Attorney will not be recognized in the application.

Application Number	13/679,476
Filing Date	November 16, 2012
First Named Inventor	Christopher P. Ricci
Title	Vehicle Middleware
Art Unit	2111
Examiner Name	Not yet assigned
Attorney Docket Number	6583-247

SIGNATURE of Applicant or Patent Practitioner

Signature	/Tadd F. Wilson/	Date	March 27, 2013
Name	Tadd F. Wilson	Telephone	303-863-9700
Registration Number	54544		

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

■ *Total of 2 forms are submitted.

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

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Doc Code: PA..

Document Description: Power of Attorney

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

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

111285

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

Name	Registration Number		Name	Registration Number

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

☒ The address associated with the above-mentioned Customer Number.

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☐ Firm or Individual Name					
Address					
City		State		Zip	
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I am the Applicant:

☐ Inventor or Joint Inventor

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document)

SIGNATURE of Applicant for Patent

Signature	Timothy L. Stewart	Date	03/26/2013
Name	Timothy L. Stewart	Telephone	408-576-7746
Title and Company	Secretary, Flextronics AP, LLC		

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

☐ *Total of _____ forms are submitted.

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Electronic Acknowledgement Receipt

EFS ID:	15368369
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Tadd Fjelp Wilson
Filer Authorized By:	
Attorney Docket Number:	6583-247
Receipt Date:	27-MAR-2013
Filing Date:	16-NOV-2012
Time Stamp:	15:39:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	2013-03-27_FlexAP_GenPOA.pdf	514533 c7a06559e5d684d19d02f6c5f30facdd7b916d31	no	2

Warnings:	
Information:	

Total Files Size (in bytes):	514533

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

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/679,476	11/16/2012	Christopher P. Ricci	6583-247

CONFIRMATION NO. 2650

POA ACCEPTANCE LETTER

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

OC000000060240461

Date Mailed: 04/09/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/27/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/hsarwari/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:		)	Group Art Unit: 2111
	Ricci et al.	)	Confirmation No.: 2650
Application No.:	13/679,476	)	
Filed:	11/16/2012	)	
Atty. File No.:	6583-247	)	
For:	VEHICLE MIDDLEWARE	)	

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

SECOND PRELIMINARY AMENDMENT

Dear Sir:

Prior to the initial review of the above-identified patent application by the Examiner, please enter the following Second Preliminary Amendment. Although Applicants do not believe that any fees are due based upon the filing of this Preliminary Amendment, please charge any such fees to Deposit Account 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims begin on page **2** of this paper.

Remarks begin on page **8** of this paper.

Ford Ex. 1161 Page 162 of 520

AMENDMENTS TO THE CLAIMS

1. (Amended) A vehicle, comprising ~~at least one of~~:

~~(a) a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions;~~

~~(b) an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules;~~

~~(c) a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations;~~

~~(d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants;~~

~~(e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system;~~

~~(f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal;~~

~~(g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal;~~

~~(h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request;~~

~~(i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a~~

~~result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant;~~

~~(j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle;~~

~~(k)~~ a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function~~;~~.

~~(l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network~~;

~~(m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station~~;

~~(n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation~~;

~~(o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle; and~~

~~(p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information~~.

2. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions~~(a)~~, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the

second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module.

3. (Amended) The vehicle of claim 1, wherein the vehicle further comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules(b) and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module.

4. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations(c) and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module.

5. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants(d) and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system.

6. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system (e) and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle.

7. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a network selector to select one of plural communication networks local to the vehicle for

transmitting a selected signal (f) and wherein the network selector selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service.

8. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal(g) and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service.

9. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request (h) and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator.

10. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant (i) and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems.

11. (Amended) The vehicle of claim 1, wherein the vehicle further comprises an installation supervisor to determine, for a newly installed software and/or hardware and/or other

component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle (j) and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module.

12. (Amended) The vehicle of claim 1, ~~wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and~~ wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. (Amended) The vehicle of claim 1, ~~wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and~~ wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components.

15. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station(m) and wherein the media controller permits a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station.

Ford Ex. 1161 Page 167 of 520

16. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation ~~(n)~~ and wherein the network controller caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state.

17. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle ~~(o)~~ and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion.

18. (Amended) The vehicle of claim 1, wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information~~(p)~~.

19. (Amended) A non-transient, tangible computer readable medium comprising processor executable instructions to perform ~~one or more of operations (a)-(p) referenced in~~computational module selector of claim 1.

20. (Amended) A method comprising steps to perform ~~one or more of the operations (a)-(p) referenced in~~in the computational module selector of claim 1.

REMARKS/ARGUMENTS

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: Douglas Swartz

Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: April 19, 2013

Electronic Acknowledgement Receipt

EFS ID:	15571199
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Douglas W. Swartz/Christine Jacquet
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	20-APR-2013
Filing Date:	16-NOV-2012
Time Stamp:	11:40:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-247-SecondPrelimAmend.pdf	798215 bda0cea4e722ece063967b105a1cfb2ba6a2ec61	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	8
Warnings:			
Information:			
	Total Files Size (in bytes):	798215	

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

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

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

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
13/679,476	11/16/2012	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	04/20/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $80=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $420=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LINDA A. WASHINGTON/

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/679,476	11/16/2012	Christopher P. Ricci	6583-247

CONFIRMATION NO. 2650

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

PUBLICATION NOTICE

OC000000061742329

Title:VEHICLE MIDDLEWARE

Publication No.US-2013-0145482-A1
Publication Date:06/06/2013

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

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

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

111285 7590 10/11/2013

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WILLIAMS, JEFFERY L	
ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
10/11/2013	ELECTRONIC

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

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

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

flexpatents@sheridanross.com

Office Action Summary	Application No. 13/679,476	Applicant(s) RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2437	AIA (First Inventor to File) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *4/20/13*.

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

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

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

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

Disposition of Claims

5)☒ Claim(s) *1-20* is/are pending in the application.

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

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

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

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

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

Application Papers

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

11)☒ The drawing(s) filed on *11/16/12* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

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

4) ☐ Other: _____.

DETAILED ACTION

Claims 1 – 20 are pending.

Any references to applicant's specification are made by way of applicant's U.S. pre-grant printed patent publication.

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

Claim Rejections - 35 USC § 112

> The following is a quotation of 35 U.S.C. 112(b):
> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 20 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claims 1 – 20, the elements of "…computational module selector…", "…plurality of processing modules …", "…first processing modlue …", "…second processing module …", "…arbitration module…", "…health check module …", "…displayed object movement module …", "…media filter …", "…network selector…",

"…diagnostic module…", "…remote control module…", "…media controller…", "…installation supervisor…", "…network security module…", "… network controller…", "…unified communications presence reporting module…", and "…social networking module…", are limitations that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. The examiner notes that applicant disclosure only broadly recites general elements such as software, hardware, or logic (e.g. Specification, par. 374-376). Means-plus-function recitations, however, must be adequately disclosed in the form of specific computer algorithms or hardware structural features that transform a general purpose computing device into a specific purpose computing device.

Applicant may:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function

and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Regarding claim 20, the recitation of "instructions" to perform the "selector" of claim 1 is indefinite because the "selector" of claim 1 does not inherently represent any function or method step. Thus, the scope of any "performance" of the selector of claim 1 is indefinite.

Regarding claim 21, the recitation of "steps" to perform the "selector" of claim 1 is indefinite because the "selector" of claim 1 does not inherently represent any function or method step. Thus, the scope of any "steps" of the selector of claim 1 is indefinite.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Specifically claim 20 is rejected as comprising a method that fails to be tied to a specific machine or cause the transformation of matter into another state or thing. The examiner points out that the recited “steps to perform" the computational module of claim 1 are not explicitly recited as performed by the computational module and, thus, fail to be tied to any specific machine. Furthermore, a consideration of the other weighting factors against eligibility reveals that the claims comprise a mere statement of a general concept that is disembodied. The examiner respectfully suggests that the applicant recite method limitations explicitly comprising the use of hardware.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 5, 8 – 13, 19, and 20 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Yakes et al. (Yakes), US 2003/0158638 A1A1.

Regarding claim 1, as best understood in light of the above rejections, Yakes discloses:

a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules.

Regarding claim 2, Yakes discloses:

a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (e.g. Yakes, fig. 2:14; par. 184, 185). Herein, the CPU may execute at least one module (i.e. primary control). Furthermore, information transfer for at least some of the modules is accomplished wirelessly.

Regarding claim 3, Yakes discloses:

wherein the vehicle comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module (e.g. Yakes, fig. 2:14, 16 - CPU). CPU's arbitrate the execution of tasks such as by semaphore.

Regarding claim 4, Yakes discloses:

wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module (e.g. Yakes, par. 336).

Regarding claim 5, Yakes discloses:

wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system (e.g. Yakes, par. 357).

Regarding claim 8, Yakes discloses:

and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service (e.g. Yakes, par. 91).

Regarding claim 9, Yakes discloses:

and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator (e.g. Yakes, par. 281).

Regarding claim 10, Yakes discloses:

and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems (e.g. Yakes, par. 184).

Regarding claim 11, Yakes discloses:

and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module (e.g. Yakes, fig. 2).

Regarding claim 12, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (e.g. Yakes, fig. 2; par. 297).

Regarding claim 13, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application (e.g. Yakes, fig. 2). The software modules comprise different types of functions (i.e. different versions).

Regarding claims 19 and 20, they comprise essentially similar limitations as claim above, and they are rejected, at least, for the same reasons.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

See Notice of References Cited.

A shortened statutory period for reply is set to expire **3** months (not less than 90 days) from the mailing date of this communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)272-7965. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Shiferaw can be reached on (571)272-3867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffery Williams/
Primary Examiner, Art Unit 2437

Notice of References Cited	Application/Control No. 13/679,476	Applicant(s)/Patent Under Reexamination RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2437	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2008/0174451 A1	07-2008	Harrington et al.	340/905
*	B	US-2012/0173905 A1	07-2012	Diab et al.	713/320
*	C	US-2012/0173900 A1	07-2012	Diab et al.	713/310
*	D	US-2012/0110356 A1	05-2012	Yousefi et al.	713/320
*	E	US-2013/0250933 A1	09-2013	Yousefi et al.	370/338
*	F	US-2004/0024502 A1	02-2004	Squires et al.	701/33
*	G	US-2003/0158638 A1	08-2003	Yakes et al.	701/22
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	**Art Unit**
	JEFFERY WILLIAMS	2437

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

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

CLAIM		DATE								
Final	Original	10/07/2013								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"20130145482"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 03:56
L2	0	vehicle adj computer and network same media same safety and park$3 with (halt$3 stop$4) with (music media navigation) and cellular same bluetooth	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:15
L3	4	(car vehicle automobile) same computer and (wireless$3 network satellite) same media and safety and park$3 with (halt$3 stop$4) with (music media navigation) and cellular and bluetooth	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:16
L5	82	("713".clas. "726".clas. "380".clas.) and vehicle with diagnostic with (computer controller module)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:40
L6	7	l5 and media and wireless and security and streaming	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:41
L7	154	vehicle with diagnostic with (computer controller module) and media and wireless and security and streaming	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:43
L8	133	l7 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:43
L9	65	l7 and (@ad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:44
L10	12	l9 and arbitrat$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:45
L11	8	(US-20130145482-$ or US-20080174451-$ or US-20120173905-$ or US-20120173900-$ or US-20120110356-$ or US-20130250933-$ or US-20040024502-$ or US-	US-PGPUB	OR	ON	2013/10/07 04:50

		20030158638-$).did.				
L12	3	l11 and arbitrat$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:50
L13	7	l11 and stream$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:51

EAST Search History (Interference)

< This search history is empty>

10/7/2013 5:25:40 AM

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	Art Unit
	JEFFERY WILLIAMS	2437

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
PALM: inventor name search	10/7/2013	jw
East search: uspat, uspgpub, epo, jpo, derwent	10/7/2013	jw
NPL search: ibmtdb	10/7/2013	jw
limited classification search: 713, 726, 380	10/7/2013	jw

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

	/JEFFERY WILLIAMS/ Primary Examiner.Art Unit 2437

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	1	of	4	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5794164	08/11/1998	Beckert et al.	
	2	6484082	11/19/2002	Millsap et al.	
	3	6681176	01/20/2004	Funk et al.	
	4	6724920	04/20/2004	Berenz et al.	
	5	7295921	11/13/2007	Spencer et al.	
	6	7548815	06/16/2009	Watkins et al.	
	7	7606660	10/20/2009	Diaz et al.	
	8	RE41449	07/20/2010	Krahnstoever et al.	
	9	7891004	02/15/2011	Gelvin et al.	
	10	2005/0149752	07/07/2005	Johnson et al.	
	11	2006/0042846	03/02/2006	Kojori et al.	
	12	2006/0125631	06/15/2006	Sharony	
	13	2006/0250272	11/09/2006	Puamau	
	14	2008/0140278	06/12/2008	Breed	
	15	2008/0148374	06/19/2008	Spaur et al.	
	16	2008/0212215	09/04/2008	Schofield et al.	
	17	2008/0253613	10/16/2008	Jones et al.	
	18	2009/0180668	07/16/2009	Jones et al.	
	19	2009/0278750	11/12/2009	Man et al.	
	20	2010/0090817	04/15/2010	Yamaguchi et al.	
	21	2010/0097239	04/22/2010	Campbell et al.	
	22	2010/0144284	06/10/2010	Chutorash et al.	
	23	2010/0222939	09/02/2010	Namburu et al.	
	24	2010/0295676	11/25/2010	Khachaturov et al.	
	25	2011/0053506	03/03/2011	Lemke et al.	
	26	2011/0105097	05/05/2011	Tadayon et al.	
	27	2011/0106375	05/05/2011	Sundaram et al.	
	28	2011/0112969	05/12/2011	Zaid et al.	
	29	2011/0117933	05/19/2011	Andersson	
	30	2012/0081267	04/05/2012	Sirpal et al.	
	31	2012/0081311	04/05/2012	Sirpal et al.	
	32	2012/0084542	04/05/2012	Reeves et al.	

Examiner Signature		Date Considered	

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	2	of	4	Attorney Docket Number	6583-247

	33	2013/0134730	05/30/2013	Ricci	
	34	2013/0135118	05/30/2013	Ricci	
	35	2013/0138591	05/30/2013	Ricci	
	36	2013/0138714	05/30/2013	Ricci	
	37	2013/0141247	06/06/2013	Ricci	
	38	2013/0141252	06/06/2013	Ricci	
	39	2013/0143495	06/06/2013	Ricci	
	40	2013/0143546	06/06/2013	Ricci	
	41	2013/0143601	06/06/2013	Ricci	
	42	2013/0144459	06/06/2013	Ricci	
	43	2013/0144460	06/06/2013	Ricci	
	44	2013/0144461	06/06/2013	Ricci	
	45	2013/0144462	06/06/2013	Ricci	
	46	2013/0144463	06/06/2013	Ricci et al.	
	47	2013/0144469	06/06/2013	Ricci	
	48	2013/0144470	06/06/2013	Ricci	
	49	2013/0144474	06/06/2013	Ricci	
	50	2013/0144486	06/06/2013	Ricci	
	51	2013/0144520	06/06/2013	Ricci	
	52	2013/0144657	06/06/2013	Ricci	
	53	2013/0145065	06/06/2013	Ricci	
	54	2013/0145279	06/06/2013	Ricci	
	55	2013/0145297	06/06/2013	Ricci et al.	
	56	2013/0145360	06/06/2013	Ricci	
	57	2013/0145401	06/06/2013	Ricci	
	58	2013/0147638	06/13/2013	Ricci	
	59	2013/0151031	06/13/2013	Ricci	
	60	2013/0151065	06/13/2013	Ricci	
	61	2013/0151088	06/13/2013	Ricci	
	62	2013/0152003	06/13/2013	Ricci et al.	
	63	2013/0154298	06/20/2013	Ricci	
	64	2013/0158821	06/20/2013	Ricci	
	65	2013/0166097	06/27/2013	Ricci	
	66	2013/0167159	06/27/2013	Ricci et al.	
	67	2013/0198737	08/01/2013	Ricci	
	68	2013/0198802	08/01/2013	Ricci	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [2] Applicant's unique citation designation number (optional). [3] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [4] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [5] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [6] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [7] Applicant is to place a check mark here if English language Translation is attached.

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				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	3	of	4	Attorney Docket Number	6583-247

	69	2013/0200991	08/08/2013	Ricci et al.	
	70	2013/0203400	08/08/2013	Ricci	
	71	2013/0204466	08/08/2013	Ricci	
	72	2013/0204484	08/08/2013	Ricci	
	73	2013/0204493	08/08/2013	Ricci et al.	
	74	2013/0204943	08/08/2013	Ricci	
	75	2013/0205026	08/08/2013	Ricci	
	76	2013/0205412	08/08/2013	Ricci	
	77	2013/0218412	08/22/2013	Ricci	
	78	2013/0219039	08/22/2013	Ricci	
	79	2013/0227648	08/29/2013	Ricci	
	80	2013/0241720	09/19/2013	Ricci et al.	
	81	2013/0245882	09/19/2013	Ricci	
	82	7738462	06/15/2010	HWANG	

UNPUBLISHED U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	83	13/462593	05/02/2012	Ricci et al.	
	84	13/462596	05/02/2012	Ricci et al.	
	85	13/829605	03/14/2013	Ricci	
	86	13/830066	03/14/2013	Ricci et al.	
	87	13/840240	03/15/2013	Ricci	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Examiner Signature		Date Considered	

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

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				Filing Date	November 16, 2012
(Use as many sheets as necessary)				First Named Inventor	Christopher Ricci
				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	4	of	4	Attorney Docket Number	6583-247

	88	"Cadillac: 2013 XTS Full-Size Luxury Sedan," Cadillac.com, 4 pages, Jun. 2012 internet archive, found at: (web.archive.org/web/20120606185204/http://www.cadillac.com/xts-luxury-sedan.html)
	89	LEE "Cadillac revamps the instrument panel with CUE," CNET Reviews, Oct. 11, 2011, 5 pages, found at: (reviews.cnet.com/8301-12261_7-20118807-10356022/cadillac-revamps-the-instrument-panel-with-cue/)
	90	MARTURANO "General Motors Takes a CUE from Customers," InContext, Nov. 08, 2011, 3 pages, found at: (incontextdesign.com/blog/general-motors-takes-a-cue-from-customers/)
	91	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US12/65510, mailed May 06, 2013 (Attorney's Ref. No. 6583-244-PCT) 17 pages
	92	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US12/65613, mailed Feb. 15, 2013 (Attorney's Ref. No. 6583-247-PCT) 9 pages
	93	Official Action for U.S. Patent Application No. 13/679,441, mailed Sep. 05, 2013 (Attorney's Ref. No. 6583-244) 6 pages
	94	Official Action for U.S. Patent Application No. 6583-315, mailed Jul. 09, 2013 (Attorney's Ref. No. 6583-315) 10 pages
	95	"Time-triggered CAN," CIA, © 2001-2013, 4 pages, found at: (www.can-cia.org/index.php?id+166)
	96	DAVIS et al. "Controller Area Network (CAN) schedulability analysis: Refuted, revisited and revised," Real-Time Systems, Apr. 2007, Vol. 35, No. 3, pages 239-272
	97	DI NATALE "Controller Area Network," Dec. 2009, 54 pages
	98	FONSECA et al. "Scheduling for a TTCAN network with a stochastic optimization algorithm," Proceedings 8th Internatioanl CAN Conference, Jan. 2002, 7 pages
	99	HARTWICH et al. "CAN Network with Time Triggered Communication," Robert Bosch GmbH Proceedings 7th International CAN Conference, Jul. 2000, 7 pages
	100	IDSTEIN et al. "Using the Controller Area Network for Communication Between Prostesis Sensors and Control Systems," Proceedings of the 2011 MyoElectric Controls/Powered Prostetics Symposium Fredericton, New Brunswick, Canada, Aug. 14-19, 2011, 4 pages

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [2] Applicant's unique citation designation number (optional). [3] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [4] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [5] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [6] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [7] Applicant is to place a check mark here if English language Translation is attached.

SAC

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
TADD F. WILSON
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

RECEIVED
MAY - 9 2013
SHERIDAN ROSS, P.C.
DOCKETING DEPT.

PCT

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

(PCT Rule 44.1)

Applicant's or agent's file reference 6583-244-PCT	Date of mailing *(day/month/year)* 06 MAY 2013 **FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 12/65510	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

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

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Lee W. Young PCT Helpdesk: 571-272-4300 Telephone No. PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-244-PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 12/65510	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)	(Earliest) Priority Date *(day/month/year)* 16 November 2011 (16.11.2011)
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 4 sheets.

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

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

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

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

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 12/65510

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See extra sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Claims 1-30, 41-70, 81-90, and 101-110

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 12/65510

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G01M 17/00 (2013.01); G06F 7/00 (2013.01)
USPC - 701/31.5
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 701/31.5; IPC(8): G01M 17/00 (2013.01); G06F 7/00 (2013.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 701/1, 31.4, 31.5, 468, 484-487; 342/450; IPC(8): G01M 17/00 (2013.01); G06F 7/00 (2013.01)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Google Scholar; Google Web; Google Patents; PatBase.
Search Terms: vehicle, car, signal, communicate, reject, deny, ignore, connect, bus, hotspot, transceiver, BLUETOOTH, antenna, wireless, local area network, weight, originate, inside, within, character, feature, location, person, user, passenger, driver, move, sense

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010/0097239 A1 (Campbell et al.) 22 April 2010 (22.04.2010), entire document, especially para [0007], [0040]-[0041], [0045], [0053], [0055], [0059], [0061], [0064]-[0065], [0068]-[0070], [0075], [0083], [0087]-[0088], [0090], [0099], [0108]-[0109], [0116]-[0117], [0120], [0125], [0131]-[0132], [0135], [0137], [0139], [0141] 1-30, 41-70, 81-90, 101-110	1-30, 41-70, 81-90, 101-110
Y	US 2010/0090817 A1 (Yamaguchi et al.) 15 April 2010 (15.04.2010), entire document, especially para [0008]	1-30, 41-70, 81-90, 101-110
Y	US 2010/0144284 A1 (Chutorash et al.) 10 June 2010 (10.06.2010), entire document, especially para [0027], [0033], [0045], [0053], [0062]	2-15, 17-20, 48, 51-55, 57-60
Y	US 2011/0105097 A1 (Tadayon et al.) 05 May 2011 (05.05.2011), entire document, especially para [0069]	10, 20
Y	US 2009/0278750 A1 (Man et al.) 12 November 2009 (12.11.2009), entire document, especially para [0019]	21-30, 61-70
A	US 2008/0148374 A1 (Spaur et al.) 19 June 2008 (19.06.2008), entire document	1-30, 41-70, 81-90, 101-110
A	US 2011/0112969 A1 (Zaid et al.) 12 May 2011 (12.05.2011), entire document	1-30, 41-70, 81-90, 101-110

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

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

Date of the actual completion of the international search	Date of mailing of the international search report
29 March 2013 (29.03.2013)	06 MAY 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Continuation of Box No. III: Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

Reasons for Lack of Unity of Invention:

This application contains the following inventions or groups of inventions that are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group 1: Claims 1-30, 41-70, 81-90, and 101-110 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

Group 2: Claims 31-40, 71-80, 91-100 and 111-120 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The inventions listed as Groups 1 - 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group 1 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

The special technical feature of the Group 2 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The only common technical feature shared by the above groups is a vehicle communication system.

However, this shared technical feature does not represent a contribution over prior art, because the shared technical feature is anticipated/made obvious by reference US 7,548,815 B2 to Watkins et al. (Published on16 June 2009) that discloses a vehicle communication system in Abstract, col 8, ln 10-18 (Vehicle system module 290 contains one or more processors, one or more memory devices, and one or more connection ports. In one embodiment, VSM 290 includes a software switch for scanning received information such as, for example, real-time traffic updates and location information to identify that data has been received. VSM 290 is coupled to a vehicle communication network 212, and therefore to any other device that is also coupled to vehicle communication network 212).

As the above technical feature of vehicle communication system as taught by Watkins et al was known, this cannot be considered a special technical feature that would otherwise unify the groups.

Therefore, the inventions of Groups 1-2 lack unity of invention under PCT Rule 13 because they do not share a same or corresponding special technical feature.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: TADD F. WILSON
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)* 06 MAY 2013

Applicant's or agent's file reference
6583-244-PCT

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 12/65510	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G01M 17/00 (2013.01); G06F 7/00 (2013.01)
USPC - 701/31.5

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	29 March 2013 (29.03.2013)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

Reasons for Lack of Unity of Invention:

This application contains the following inventions or groups of inventions that are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group 1: Claims 1-30, 41-70, 81-90, and 101-110 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

Group 2: Claims 31-40, 71-80, 91-100 and 111-120 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The inventions listed as Groups 1 - 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group 1 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

The special technical feature of the Group 2 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The only common technical feature shared by the above groups is a vehicle communication system.

However, this shared technical feature does not represent a contribution over prior art, because the shared technical feature is anticipated/made obvious by reference US 7,548,815 B2 to Watkins et al. (Published on16 June 2009) that discloses a vehicle communication system in Abstract, col 8, ln 10-18 (Vehicle system module 290 contains one or more processors, one or more memory devices, and one or more connection ports. In one embodiment, VSM 290 includes a software switch for scanning received information such as, for example, real-time traffic updates and location information to identify that data has been received. VSM 290 is coupled to a vehicle communication network 212, and therefore to any other device that is also coupled to vehicle communication network 212).

As the above technical feature of vehicle communication system as taught by Watkins et al was known, this cannot be considered a special technical feature that would otherwise unify the groups.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. Claims 1-30, 41-70, 81-90, and 101-110

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

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

1. Statement

Novelty (N)	Claims	1-30, 41-70, 81-90, 101-110	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-30, 41-70, 81-90, 101-110	NO
Industrial applicability (IA)	Claims	1-30, 41-70, 81-90, 101-110	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1, 16, 41-47, 49, 50, 56, 81-90, and 101-110 lack an inventive step under PCT Article 33(3) as being obvious over US 2010/0097239 A1 to Campbell et al. (hereinafter Campbell) in view of US 2010/0090817 A1 to Yamaguchi et al. (hereinafter Yamaguchi).

Regarding claim 1, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and providing access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 16, Campbell discloses a computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method for providing a universal bus, the computer-executable instructions comprising: instructions to receive a signal at a vehicle communication system from a device (para [0069]); instructions to automatically determine if the signal originates from inside the vehicle ((" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and instructions to provide access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said computer-executable instructions comprise if the signal originates from inside the vehicle, instructions to communicatively connect the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

--Please See Continuation Sheet--

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 41, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle ((" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and receiving a message from a first device (para [0070]); and providing the message to a second device (para [0070]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device and verifying that the message originated from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 42, in the combination of Campbell and Yamaguchi, Campbell further discloses that the message is directed to the second device (para [0070]).

Regarding claim 43, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising accessing signal data in a signal data database to retrieve address information from the second device (para [0141]).

Regarding claim 44, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising accessing signal data in a signal data database to retrieve address information for the first device (para [0141]).

Regarding claim 45, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising comparing an address for the first device in the message with the retrieved address information (para [0070]).

Regarding claim 46, in the combination of Campbell and Yamaguchi, Campbell further discloses that if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 47, in the combination of Campbell and Yamaguchi, Campbell further discloses that the message is sent through the vehicle communication system to the second device (para [0070]).

Regarding claim 49, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]).

Regarding claim 50, in the combination of Campbell and Yamaguchi, Campbell further discloses that the first device communicates to the second device through the at least one wireless LAN component (para [0064]).

Regarding claim 56, Campbell discloses a computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method for providing a universal bus, the computer-executable instructions comprising: instructions to receive a message from a first device (para [0070]); and instructions to provide the message to a second device (para [0070]). Campbell does not expressly disclose that said computer-executable instructions comprise instructions to verify that the message originated from inside the vehicle. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

--Please See Continuation Sheet--

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 81, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle ((" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and providing access to a vehicle bus (para [0069]). determining one or more of available resources, available devices, and available sources (para [0137]); determining cloud services connected to the available resources, available devices, and available sources (para [0083]); receiving input on a user interface of the vehicle, wherein the input requests a cloud service (para [0131]); routing the input to a device (para [0131]); receiving, from the device, data from the cloud service (para [0083]); and providing the data on the display of the vehicle (para [0132]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 82, in the combination of Campbell and Yamaguchi, Campbell further discloses that a vehicle communication system sends signal data to a processor to determine the available resources, available devices, and available sources and the cloud services (para [0053]).

Regarding claim 83, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system determines which cloud sources are available through the device (para [0083]).

Regarding claim 84, in the combination of Campbell and Yamaguchi, Campbell further discloses that the processor determines which cloud sources are available through a server (para [0083]).

Regarding claim 85, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising presenting the cloud services information on a touch sensitive display (para [0041]).

Regarding claim 86, in the combination of Campbell and Yamaguchi, Campbell further discloses that the device is a computing system (para [0116]).

Regarding claim 87, in the combination of Campbell and Yamaguchi, Campbell further discloses that the cloud service is for the provision of data or for the execution of an application (para [0083]).

Regarding claim 88, in the combination of Campbell and Yamaguchi, Campbell further discloses that the input is received on the touch sensitive display (para [0041]).

Regarding claim 89, in the combination of Campbell and Yamaguchi, Campbell further discloses that the input is analyzed to determine a correct source for the cloud service (para [0083]).

Regarding claim 90, in the combination of Campbell and Yamaguchi, Campbell further discloses that based on the analysis, the vehicle communication system routes the input to the correct device (para [0083]).

--Please See Continuation Sheet--

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 101, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); determining one or more of available resources, available devices, and available sources (para [0137]); determining multimedia sources associated with the available resources, available devices, and available sources (para [0055]); receiving input on a user interface of the vehicle, wherein the input multimedia (para [0055]); routing the input to an available resource, available device, and available source (para [0087]); receiving a multimedia steam from an available resource, available device, and available source (para [0088]); and presenting the multimedia stream on an output of the vehicle (para [0070]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 102, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising caching the multimedia stream (para [0061]).

Regarding claim 103, in the combination of Campbell and Yamaguchi, Campbell further discloses that two or more multimedia streams are received from two or more sources (para [0064]).

Regarding claim 104, in the combination of Campbell and Yamaguchi, Campbell further discloses that all of the two or more multimedia streams are cached (para [0061]).

Regarding claim 105, in the combination of Campbell and Yamaguchi, Campbell further discloses that determining multimedia sources associated with the available resources, available devices, and available sources comprises canvassing the available resources, available devices, and available sources for multimedia available at those available resources, available devices, and available sources (para [0137]).

Regarding claim 106, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising:
consolidating the multimedia (para [0117]); and
presenting the multimedia on a vehicle touch sensitive display (para [0132]).

Regarding claim 107, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising determining if safety parameters are met for presentation of the multimedia stream (para [0099]).

Regarding claim 108, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising if safety parameters are met for presentation of the multimedia stream, presenting the multimedia stream (para [0099]).

Regarding claim 109, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising if safety parameters are not met for presentation of the multimedia stream, recording the multimedia stream (para [0099]).

Regarding claim 110, in the combination of Campbell and Yamaguchi, Campbell further discloses that the multimedia stream is recorded in local storage (para [0116]).

Claims 2-9, 11-15, 17-19, 48, 51-55, and 57-60 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi, and further in view of US 2010/0144284 A1 to Chutorash et al. (hereinafter Chutorash).

Regarding claim 2, Campbell and Yamaguchi disclose the method of claim 1.
Campbell and Yamaguchi do not expressly disclose that the vehicle communication system include a communication system in communication with two or more transceivers.
However, Chutorash discloses that the vehicle communication system include a communication system in communication with two or more transceivers (para [0053]).
It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system include a communication system in communication with two or more transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system include a communication system in communication with two or more transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 3, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that two or more of the transceivers are BLUETOOTH transceivers (para [0045]).

Regarding claim 4, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that two or more antennas for the vehicle communication system are separated but positioned within the vehicle (para [0033]).

Regarding claim 5, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system analyzes the signal (para [0075]).

Regarding claim 6, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the analysis includes one or more of:
determining signal characteristics (para [0027]);
determining location information;
determining person information;
determining movement information (para [0062]); and
determining sensor information.

Regarding claim 7, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the communication system resolves the analysis to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 8, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]).

Regarding claim 9, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the device communicates with the at least one wireless LAN component (para [0064]).

Regarding claim 11, Campbell discloses a vehicle communication system (para [0007]), comprising: a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]); wherein the signal processor is operable to: receive a signal at the vehicle communication system from a device (para [0069]); automatically determine if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and provide access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said signal processor is operable to if the signal originates from inside the vehicle, communicatively connect the vehicle communication system to the device and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said vehicle communication system comprises two or more BLUETOOTH transceivers. However, Chutorash discloses that said vehicle communication system comprises: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said vehicle communication system comprises two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said vehicle communication system comprises two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 12, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]).

Regarding claim 13, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises a signal data database (para [0141]).

Regarding claim 14, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises a translator (para [0120]).

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In case **the space in any of the preceding boxes is not sufficient.**
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Box V. 2. Citations and explanations:

Regarding claim 15, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the signal processor is further operable to: determine signal characteristics (para [0027]); determine location information; determine person information; determine movement information (para [0062]); determine sensor information; and resolve the signal characteristics, location information, person information, movement information, and sensor information to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 17, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes: at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]); a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]). Campbell and Yamaguchi do not expressly disclose that the vehicle communication system includes two or more BLUETOOTH transceivers. However, Chutorash discloses that the vehicle communication system includes: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system includes two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system includes two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 18, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises: a signal data database (para [0141]); and a translator (para [0120]).

Regarding claim 19, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the signal processor executes instructions to: determine signal characteristics (para [0027]); determine location information; determine person information; determine movement information (para [0062]); determine sensor information; and resolve the signal characteristics, location information, person information, movement information, and sensor information to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 48, Campbell and Yamaguchi disclose the method of claim 41. Campbell and Yamaguchi do not expressly disclose that verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle. However, Chutorash discloses that verifying the message comprises: determining signal characteristics (para [0027]); determining location information; determining person information; determining movement information (para [0062]); determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle (para [0060]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 51, Campbell discloses a vehicle communication system (para [0007]), comprising: a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]); wherein the signal processor is operable to: receiving a message from a first device (para [0070]); and providing the message to a second device (para [0070]). Campbell does not expressly disclose that the signal processor is operable to verifying that the message originated from inside the vehicle. However, Yamaguchi discloses that the signal processor is operable to: verifying that the message originated from inside the vehicle ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that the signal processor is operable to verifying that the message originated from inside the vehicle, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the signal processor is operable to verifying that the message originated from inside the vehicle, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said vehicle communication system comprises two or more BLUETOOTH transceivers. However, Chutorash discloses that said vehicle communication system comprises: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said vehicle communication system comprises two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said vehicle communication system comprises two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 52, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the message is directed to the second device (para [0070]).

Regarding claim 53, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising: accessing signal data in a signal data database to retrieve address information from the second device (para [0141]), and accessing signal data in a signal data database to retrieve address information for the first device (para [0141]).

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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 54, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising comparing an address for the first device in the message with the retrieved address information (para [0070]), wherein if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 55, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the message is sent through the vehicle communication system to the second device (para [0070]).

Regarding claim 57, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes: at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]); a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]). Campbell and Yamaguchi do not expressly disclose that the vehicle communication system includes two or more BLUETOOTH transceivers. However, Chutorash discloses that the vehicle communication system includes:
two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system includes two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system includes two or more BLUETOOTH transceivers s, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 58, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises: a signal data database (para [0141]); and a translator (para [0120]).

Regarding claim 59, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising: instructions to access signal data in a signal data database to retrieve address information from the second device (para [0141]), instructions to access signal data in a signal data database to retrieve address information for the first device (para [0141]); and instructions to compare an address for the first device in the message with the retrieved address information (para [0070]), wherein if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 60, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]), and wherein the first device communicates to the second device through the at least one wireless LAN component (para [0064]).

Claims 21-30 and 61-70 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi and US 2009/0278750 A1 to Man et al. (hereinafter Man).

Regarding claim 21, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]);receiving a request for a function (para [0090]); determining one or more of available resources, available devices, and available sources (para [0137]); selecting a device or source to provide the function (para [0068]); commanding the device or source to provide the function (para [0108]); and receiving the function (para [0109]).
Campbell does not expressly disclose that the method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).
The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said method comprises determining load. However, Man discloses that said method comprises: determining load (para [0019]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said method comprises determining load, as disclosed by Man, because Campbell, Yamaguchi, and Man are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises determining load, because such systems and methods provide relatively high performance multi-band antennas for operation in EDGE, CODMA and/or WCDMA systems (Man para [0008]).

Regarding claim 22, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the vehicle communication system includes a communication system in communication with one or more devices (para [0040]).

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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 23, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the device is a computing system (para [0116]).

Regarding claim 24, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the function is one of playing of multimedia data (para [0055]), provisioning of access to the internet (para [0059]), or providing access to e-mail (para [0070]).

Regarding claim 25, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that determining the load comprises one of: determining a number of input/output messages sent between a device and vehicle communication system (para [0045]); or analyzing information sent to the vehicle communication system by the device (para [0070]).

Regarding claim 26, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the selection of the device or source is based both on availability and load (para [0137]).

Regarding claim 27, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a first device requests the function (para [0090]).

Regarding claim 28, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a second device provides the function (para [0108]).

Regarding claim 29, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the request for the function is received by the vehicle communication system (para [0090]).

Regarding claim 30, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a device provides the function for the vehicle communication system (para [0090]).

Regarding claim 61, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); receiving a request for an application (para [0083]); determining one or more of available resources, available devices, and available sources (para [0137]); activating function on a device or source to execute the application (para [0139]); receiving, from the device, application user interface information or data at the vehicle to be displayed on a display associated with the vehicle (para [0131]); and
displaying the application on the display (para [0132]).Campbell does not expressly disclose that the method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device,and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said method comprises determining load. However, Man discloses that said method comprises:determining load (para [0019]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said method comprises determining load, as disclosed by Man, because Campbell, Yamaguchi, and Man are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises determining load, because such systems and methods provide relatively high performance multi-band antennas for operation in EDGE, CODMA and/or WCDMA systems (Man para [0008]).

Regarding claim 62, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising: commanding the vehicle communication system to perform functions for the application (para [0135]).

Regarding claim 63, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising receiving input on the display (para [0125]).

Regarding claim 64, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising based on the input received on the display, executing an application function on the device (para [0139]).

Regarding claim 65, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the vehicle communication system includes a communication system in communication with one or more devices (para [0040]).

Regarding claim 66, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the device is a computing system (para [0116]).

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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 67, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that determining the load comprises one of: determining a number of input/output messages sent between a device and vehicle communication system (para [0045]); or analyzing information sent to the vehicle communication system by the device (para [0070]).

Regarding claim 68, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the selection of the device or source is based both on availability and load (para [0137]).

Regarding claim 69, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the request for the application is received by the vehicle communication system (para [0083]).

Regarding claim 70, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a device provides the application for the vehicle communication system (para [0139]).

Claims 10 and 20 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi and Chutorash, and further in view of US 2011/0105097 A1 to Tadayon et al. (hereinafter Tadayon).

Regarding claim 10, Campbell, Yamaguchi, and Chutorash disclose the method of claim 9.
Campbell, Yamaguchi, and Chutorash do not expressly disclose that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle. However, Tadayon discloses that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle (para [0069]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell, Yamaguchi, and Chutorash so as that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle, as disclosed by Tadayon, because Campbell, Yamaguchi, Chutorash, and Tadayon are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the analysis is weighted to resolve the determination of if the signal originated inside the vehicle, because such systems and methods limit/disable the use of some of mobile device features which could cause distraction to the user when the user is engaged in another activity (Tadayon para [0010]).

Regarding claim 20, Campbell, Yamaguchi, and Chutorash disclose the computer readable medium of claim 19.
Campbell, Yamaguchi, and Chutorash do not expressly disclose that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle. However, Tadayon discloses that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle (para [0069]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell, Yamaguchi, and Chutorash so as that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle, as disclosed by Tadayon, because Campbell, Yamaguchi, Chutorash, and Tadayon are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle, because such systems and methods limit/disable the use of some of mobile device features which could cause distraction to the user when the user is engaged in another activity (Tadayon para [0010]).

Claims 1-30, 41-70, 81-90, and 101-110 have industrial applicability as defined by PCT Article 33(4), because the subject matter can be made or used in industry.

SAC

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

RECEIVED
FEB 20 2013

PCT

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

(PCT Rule 44.1)

Date of mailing *(day/month/year)*	15 FEB 2013
Applicant's or agent's file reference 6583-247-PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 12/65613	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

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

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450	Authorized officer Lee W. Young
Facsimile No. 571-273-3201	Telephone No. PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-247-PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 12/65613	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)	(Earliest) Priority Date *(day/month/year)* 16 November 2011 (16.11.2011)
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 8 sheets.

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

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

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

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

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 15

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 12/65613

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - B60T 8/172 (2013.01)
USPC - 701/1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 701/1
IPC(8): B60T 8/172 (2013.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: USPC: 701/1,2,36,29.1; 709/207,230,235,226-227 (Keyword limited; terms below)
IPC(8): B60T 8/172 (2013.01) (Keyword limited; terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase; Google (Scholar, Patents, Web)
Terms used: vehicle processing module standby primary control hand-off arbitration check health display object filter network diagnostic media "remote control" security "social network"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2006/0042846 A1 (Kojori et al.), 02 March 2006 (02.03.2006), entire document, especially Abstract, para [0027]-[0030]	1-20
Y	US 6,484,082 B1 (Millsap et al.), 19 November 2002 (19.11.2002), entire document, especially Abstract; col 5, ln 34 to col 6, ln 10; col 8, ln 53 to col 9, ln 29; col 11, ln 33 to col 12, ln 3; col 12, ln 4-41	1-20
Y	US 2011/0106375 A1 (Gurusamy Sundaram et al.), 05 May 2011 (05.05.2011), entire document, especially Abstract, para [0003], [0013], [0019], [0020]-[0022], [0027], [0029], [0032]-[0033], [0036], [0039], [0069]-[0071], [0157]-[0159], [0176]	1-20
Y	US 7,891,004 B1 (Gelvin et al.), 15 February 2011 (15.02.2011), entire document, especially Abstract; Claim 32; col 2, ln 32-39; col 27, ln 19-35	14-16
Y	US 2008/0140278 A1 (Breed), 12 June 2008 (12.06.2008), entire document, especially Abstract, para [0538]	17

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

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

Date of the actual completion of the international search	Date of mailing of the international search report
18 January 2013 (18.01.2013)	15 FEB 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	15 FEB 2013

Applicant's or agent's file reference	FOR FURTHER ACTION
6583-247-PCT	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 12/65613	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - B60T 8/172 (2013.01)
USPC - 701/1

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	19 January 2013 (19.01.2013)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed

   ☐ together with the international application in electronic form

   ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

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

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

2. Citations and explanations:
(PLEASE SEE SUPPLEMENTAL BOX)

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

Claims 1-13, 18-20 lack an inventive step under PCT Article 33(3) as being obvious over US 2006/0042846 A1 to Kojori et al. (hereinafter 'Kojori') in view of US 6,484,082 B1 to Millsap et al. (hereinafter 'Millsap') and US 2011/0106375 A1 to Gurusamy Sundaram et al. (hereinafter 'Gurusamy')

As to claim 1, Kojori teaches a vehicle, comprising at least one of: (a) a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions ("one computer unit could be operational while the other is on standby if the arbitration method employed could meet the criticality requirements established for the vehicle computer system," para [0027]); (b) an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules (para [0027]); (c) a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations ("system health," para [0029]). Kojori fails to explicitly teach such a vehicle further comprising: (d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants; (e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system; (f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal; (g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal; (i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant; (k) a computational module selector to select a computational module to perform a selected task, operation, and/or function. However, Millsap teaches (d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants (col 11, ln 33 to col 12, ln 3); (e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system (col 11, ln 33 to col 12, 3); (f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal (col 5, ln 56 to col 6, ln 10); (g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal ("diagnostics virtual network," col 8, ln 53 to col 9, ln 29); (i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant (col 11, ln 33 to col 12, ln 3); (k) a computational module selector to select a computational module to perform a selected task, operation, and/or function ("The activation of a virtual network to perform a particular control task," col 5, ln 34-55). Kojori and Millsap fail to explicitly teach such a vehicle further comprising: (h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request; (j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle; (l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network; (m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station; (n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation; (o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle; and (p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information. However, Gurusamy teaches such a vehicle further comprising: (h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request ("user authentication," para [0032], [0039]); (j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle (software stack also handles application security, rights management, copy protection, security against virus attacks etc. The application programs stored in the secured layers have controlled access," para [0029]); (l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network (para [0029]); (m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station ("rights management," para [0029]); (n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation (para [0003], [0021]); (o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle ("determine that a user is not present in the vehicle," para [0069]-[0071]); and (p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information (para [0021]). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer system of Kojori with the support for networking, media streaming, and diagnostics of Millsap and Gurusamy, because Kojori, Millsap and Gurusamy are directed to systems and methods for in-vehicle computers.
(PLEASE SEE NEXT SUPPLEMENTAL BOX)

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

As to claim 2, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (a), wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (para [0027]-[0028]).

As to claim 3, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (b) and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module ("Depending upon the failure arbitration method employed, one computer unit could be operational while the other is on standby if the arbitration method employed could meet the criticality requirements established for the vehicle computer system," para [0027]).

As to claim 4, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (c) and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module ("vehicle computer can also perform trend or prognostic health monitoring algorithms of parameters collected by the EEMC for preventative maintenance activities," para [0030]).

As to claim 5, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (d) and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system ("Audio subsystem 220 is capable of handling several sources of input and output, decoding digital audio, multichannel sound, etc. Further, audio subsystem 220 enables in-vehicle computer 104 to recognize the user and his/her commands for providing personalized features and services to the user," para [0036]).

As to claim 6, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (e) and wherein the selected rule is one or more of a white list, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle ("The vehicle's response may include one or more of the following: (a) preventing the user from going outside the bounds (e.g., preventing the user from exceeding a specified speed limit); (b) alerting the user that he is attempting to go (or is going) outside the bounds (e.g., with an alarm or a computer voice alert); (c) alert a third party about the user's actions (e.g., alert a parent of the user; e.g., alert authorities)," para [0019]).

As to claim 7, the vehicle of claim 1 is discussed above. Further, Millsap teaches such a vehicle wherein the vehicle comprises (f) and wherein the network selector selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service (col 12, ln 4-41).

As to claim 8, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (g) and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service ("these inputs may also be transmitted in real-time to various monitoring agencies which may then provide assistance, control, information or services to the user and external agencies such as road transport authorities etc.," para [0022]).

As to claim 9, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (h) and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator ("alert a third party about the user's actions (e.g., alert a parent of the user; e.g., alert authorities)," para [0019]; para [0157]-[0159]).

As to claim 10, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (i) and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems ("In some embodiments, the same speaker system can simultaneously output two different audio tracks to two different people," para [0176]).

As to claim 11, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (j) and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module ("program module," para [0013], [0020], [0027]).

As to claim 12, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (para [0013], [0033]).

(PLEASE SEE NEXT SUPPLEMENTAL BOX)

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

As to claim 13, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application ("the software might be in the form of a collection of separate programs, a program module with a larger program or a portion of a program module," para [0013]).

As to claim 18, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (p) (para [0021]).

As to claim 19, Kojori, Millsap and Gurusamy teach a non-transient, tangible computer readable medium comprising processor executable instructions to perform one or more of operations (a)-(p) referenced in claim 1.

As to claim 20, Kojori, Millsap and Gurusamy teach a method comprising steps to perform one or more of the operations (a)-(p) referenced in claim 1.

Claims 14-16 lack an inventive step under PCT Article 33(3) as being obvious over Kojori, Millsap and Gurusamy in view of US 7,891,004 B1 to Gelvin et al. (hereinafter 'Gelvin').

As to claim 14, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components. However, Gelvin teaches such a vehicle wherein the vehicle comprises (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components ("isolation must be provided between essential vehicle systems and any unauthorized local or remote access attempts," col 2, ln 32-39). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for isolating specific modules of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for modular in-vehicle computer systems.

As to claim 15, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (m) and wherein the media controller permits a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station ("blocking coupling with unauthorized devices," Claim 32). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for authorized of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for wireless vehicle communication.

As to claim 16, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (n) and wherein the network controller caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state ("when connectivity is established with another transmitter the record download begins again where it left off," col 27, ln 19-35). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for caching and resuming data streams of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for in-vehicle computers used for network communication.

Claim 17 lacks an inventive step under PCT Article 33(3) as being obvious over Kojori, Millsap and Gurusamy in view of US 2008/0140278 A1 to Breed.

As to claim 17, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (o) and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion. However, Breed teaches such a vehicle wherein the vehicle comprises (o) and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion ("obtaining information from various sensors about the occupant(s) in the passenger compartment of the vehicle, e.g., the number of occupants, their type and their motion, if any," para [0538]). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for occupant sensing of Breed, because Kojori, Millsap, Gurusamy and Breed are directed to systems and methods for in-vehicle computer systems with attributes tailored to specific detected occupants.

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Attorney Docket Number:	6583-247

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	17160041
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	17-OCT-2013
Filing Date:	16-NOV-2012
Time Stamp:	18:43:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	6275
Deposit Account	191970
Authorized User	

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

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-247_IDS_01.pdf	353685 45a059573158032da2522aa33c8c0437cd82314a	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	4	
	Information Disclosure Statement (IDS) Form (SB08)		5	8	
Warnings:					
Information:					
2	Non Patent Literature	Cadillac_2013_XTS_Full-Size_Luxury_Sedan.pdf	377339 d908f2c931cf26ae47faca108f44d7e5f5e5b916	no	4
Warnings:					
Information:					
3	Non Patent Literature	LEE_Cadillac_revamps_the_instrument_panel.pdf	728977 991e46cc2bc09d6d83a7f3cfe5021205d059d534	no	5
Warnings:					
Information:					
4	Non Patent Literature	MARTURANO_General_Motors_Takes_a_CUE_from_Customers.pdf	333978 8f5234ea57f07186431085aadd81865bc939d6e9	no	3
Warnings:					
Information:					
5	Non Patent Literature	6583-244-PCT_ISR_WO_05-06-2013.pdf	2726504 aa212a1bbd95b45f1271c2b5291f30677c014574	no	17
Warnings:					
Information:					
6	Non Patent Literature	6583-247-PCT_ISR_WO_02-15-2013.pdf	1161070 d8fa1b5275c96dcf9a0f99087cd113a42562b0dd	no	9
Warnings:					
Information:					
7	Non Patent Literature	6583-244_OA_09-05-2013.pdf	185675 0039078325a8ea4762147171bdb4e77c565a3616	no	6
Warnings:					
Information:					

8	Non Patent Literature	6583-315_OA_07-09-2013.pdf	359250 08033ec208a4cbc05aaa13a8d452155f88ece7ce	no	10
Warnings:					
Information:					
9	Non Patent Literature	Time-triggered_CAN.pdf	299076 9f6ba1a65fe56d4b9845110fa035864e12349a56	no	4
Warnings:					
Information:					
10	Non Patent Literature	DAVIS_Controller_Area_Network_CAN_schedulability.pdf	1952181 c90818628da658f61ec3199c0867bfa73caaf6e9	no	34
Warnings:					
Information:					
11	Non Patent Literature	DI_NATALE_Controller_Area_Network.pdf	396626 10f186ced304bce00ef97a39009ff13f33a8af0b	no	54
Warnings:					
Information:					
12	Non Patent Literature	FONSECA_Scheduling_for_a_TTCAN_network_with_a_stochastic.pdf	967397 3a4a97b68807d79e32f42a61af5fb74f8995c009	no	7
Warnings:					
Information:					
13	Non Patent Literature	HARTWICH_CAN_Network_with_Time_Triggered_Communication.pdf	868041 5dc84b7a8674b0a0df24519613a356f671566158	no	7
Warnings:					
Information:					
14	Non Patent Literature	IDSTEIN_Using_the_Controller_Area_Network.pdf	535403 219faceaab45787bbc7f149d60c89f87b20ab841	no	4
Warnings:					
Information:					
15	Fee Worksheet (SB06)	fee-info.pdf	30476 ca03a7192f0163e48a95217a8089441d0ffb6c466	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	11275678	

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2432
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Gilberto Barron Jr.
Filed: November 16, 2012	)	INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-247	)	*Electronically Submitted*
Entitled: "Vehicle Middleware"	)	

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

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☒ Examiner's attention is drawn to the following related applications:

- Serial No. 13/679,459 filed 11/16/12 (Attorney's Ref. No. 6583-228)
- Serial No. 13/679,857 filed 11/16/12 (Attorney's Ref. No. 6583-231)
- Serial No. 13/679,878 filed 11/16/12 (Attorney's Ref. No. 6583-232)
- Serial No. 13/679,875 filed 11/16/12 (Attorney's Ref. No. 6583-233)
- Serial No. 13/679,676 filed 11/16/12 (Attorney's Ref. no. 6583-234)
- Serial No. 13/679,441 filed 11/16/12 (Attorney's Ref. No. 6583-244)
- Serial No. 13/679,864 filed 11/16/12 (Attorney's Ref. No. 6583-245)

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- Serial No. 13/828,513 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP)
- Serial No. 13/828,651 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-2)
- Serial No. 13/828,758 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-3)
- Serial No. 13/828,860 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-4)
- Serial No. 13/828,960 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-5)
- Serial No. 13/829,058 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-6)
- Serial No. 13/829,157 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-7)
- Serial No. 13/829,505 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-8)
- Serial No. 13/829,605 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-9)
- Serial No. 13/829,718 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-10)
- Serial No. 13/829,799 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-11)
- Serial No. 13/829,862 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-12)
- Serial No. 13/830,003 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-13)
- Serial No. 13/830,066 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-14)
- Serial No. 13/830,133 filed 03/14/13 (Attorney's Ref. No. 6583-247-CIP-15)
- Serial No. 13/840,240 filed 03/15/13 (Attorney's Ref. No. 6583-314)
- Serial No. 13/678,773 filed 11/16/12 (Attorney's Ref. No. 6583-315)
- Serial No. 13/679,887 filed 11/16/12 (Attorney's Ref. No. 6583-316)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐ **37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction):

☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or

☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or

☐ Before the mailing date of a first Office Action on the merits, or

☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114.

Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.

☒ **37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions:

(1) a final action under 37 C.F.R. 1.113, or
(2) a notice of allowance under 37 C.F.R. 1.311, or
(3) an action that otherwise closes prosecution in the application.

This Information Disclosure Statement is accompanied by:

☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.

OR

☒ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.

☐ **37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c).

☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e)

AND

☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: October 17, 2013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2437
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**AMENDMENT AND RESPONSE**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Commissioner:

Applicants submit this Amendment and Response to address the Office Action having a mailing date of October 11, 2013. While Applicants believe no fees are due with the filing of this Amendment and Response, the undersigned hereby authorizes the Commissioner to charge any fees deemed necessary to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on **page 2** of this paper.

Remarks/Arguments begin on **page 9** of this paper.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service;

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

2. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module.

3. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating

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which processing module is an active processing module and/or which processing module is a standby processing module.

4. (Currently Amended) The vehicle of claim 3[[1]], wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module.

5. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system.

6. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle.

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7. (Canceled)

8. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal and ~~signaland~~ wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service.

9. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function[[,]] is executed or caused to be executed notwithstanding a contrary command from the vehicle operator.

10. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant and wherein the media controller module, in a dependent mode, provides common content synchronously to each

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of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems.

11. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises an installation supervisor module to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module.

12. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits

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communications between the isolated one of the component and/or processing module with other network components.

15. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station and wherein the media controller module permits a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station.

16. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state.

17. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion.

18. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information.

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19. – 20. (Canceled)

21. (New) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service;

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state;

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information;

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

22. (New) The vehicle of claim 21, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle.

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23. (New) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service;

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state;

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information;

wherein each of the afore-mentioned modules are implemented substantially in software.

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REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed October 11, 2013, claims 1-20 were pending in the application. Claims 1, 4, 6, 8-11, 15 and 16 are amended. Claims 7, 19 and 20 are canceled. Claims 21-23 are new. No new matter has been added. Claims 1, 21 and 23 are independent claims.

Therefore, claims 1-6, 8-18 and 21-23 are present for examination. Applicants respectfully request reconsideration of this application as amended.

Interview Summary

A brief telephone discussion was conducted between the Examiner and the undersigned on January 10, 2014. During the interview, *inter alia*, an apparent typographical error in the Office Action regarding Claims 19 and 20, and the pending 35 U.S.C. §112 rejections of Claims 1-20, were discussed.

It was agreed that the reference to Claim 20 on pg. 4, ll. 8 of the Office Action should be to Claim 19, and the reference to Claim 21 on pg. 4, ll. 13 of the Office Action should be to Claim 21. Candidate means for overcoming the 35 U.S.C. §112 rejections of Claims 1-20 were also discussed.

No final agreement was reached regarding allowance of pending claims. The undersigned thanks the Examiner for his time and guidance.

Claim Amendments, New Claims

Independent Claim 1 has been amended to, *inter alia*, additionally require the features of now-canceled dependent Claim 7.

New independent Claim 21 is similar to amended independent Claim 1, yet additionally requires the features of dependent Claims 16 and 18.

New independent Claim 21 is similar to amended independent Claim 1, yet additionally requires the features of dependent Claims 16 and 18.

Rejection Under 35 U.S.C. §101

Claim 20 is rejected under 35 U.S.C. §101as being directed to non-statutory subject matter. In order to facilitate prosecution, without concession as to the propriety of the rejection, Claim 20 is canceled.

Accordingly, the rejection of Claim 20 under 35 U.S.C. § 101 is moot.

Rejections Under 35 U.S.C. §112

Claims 1-20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for reciting various limitations that allegedly invoke 35 U.S.C. §112, sixth paragraph, without sufficient written description. Claims 19 and 20 are further rejected as indefinite.

Without admission as to the validity of these rejections and solely to facilitate prosecution, Applicants cancel Claim 19 and have amended Claims 1-18 to require that each module element be stored in a non-transient, tangible computer readable memory. As mentioned above, Claim 20 is canceled.

Accordingly, the rejections of Claims 1-18 under 35 U.S.C. § 112 should be reconsidered and withdrawn, and the rejections of Claims 19 and 20 under 35 U.S.C. § 112 are moot.

Rejections Under 35 U.S.C. §102

Claims 1-5, 8-13, 19, and 20 are rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent Application Publication No. 2003/0158638 to Yakes et al. ("Yakes").

In order for a rejection under 35 U.S.C. § 102 to be proper, each and every claim element must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Applicants respectfully request reconsideration because the Office Action has failed to show a *prima facie* case of anticipation under § 102. Indeed, "for anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." See MPEP §706.2, Original Eighth Edition, August 2001, Latest Revision July 2010. Adiga fails to teach each and every aspect of the claims.

However, all of the elements of the rejected claims cannot be found in Yates.

As stated above, Applicants have amended independent Claim 1 to, *inter alia*, additionally require the features of now-canceled dependent Claim 7. Because dependent Claim 7 was not rejected under 35 U.S.C. §102 to Yakes, amended Claim 1 is therefore allowable. Claims 2-28 depend from Claim 1.

Accordingly, for at least the reasons above, Applicants submit that the rejections of Claims 1-18 under 35 U.S.C. § 102 should be reconsidered and withdrawn.

Conclusion

Based on the foregoing, Applicants believe all pending claims are in condition for allowance. Applicants do not acquiesce to any objection, rejection, or argument not specifically addressed herein. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Richard E. Zelenka/
Richard E. Zelenka
Registration No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: January 13, 2014

Ford Ex. 1161 Page 241 of 520

Electronic Acknowledgement Receipt

EFS ID:	17892871
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	13-JAN-2014
Filing Date:	16-NOV-2012
Time Stamp:	13:23:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment_Response_13Jan 2014.pdf	130563 d9a6fa7ecbac3dc7feb8bec563b2479b073d7700	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	11
Warnings:			
Information:			
	Total Files Size (in bytes):	130563	

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

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

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/679,476	Filing Date 11/16/2012	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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

APPLICATION AS AMENDED – PART II

AMENDMENT **01/13/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

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

LIE
/YOLANDA CHADWICK/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

111285 7590 01/15/2014

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WILLIAMS, JEFFERY L	
ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
01/15/2014	ELECTRONIC

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

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

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

flexpatents@sheridanross.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *10 January 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☐102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *N/A*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner and Applicant's representative discussed claim language that may be used to preclude the interpretation of the claims under the 112 6th paragraph and overcome the rejections under 35 USC 112, 2nd par.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	1	of	1	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	2006/0047386	03/02/2006	Kanevsky et al.	
	2	2008/0051957	02/28/2008	Breed et al.	
	3	2013/0231800	09/05/2013	Ricci	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	4	PURCHER "Apple Invents In-Vehicle Holistic ID for "iOS in the Car"," Patently Apple, Dec. 2013, 8 pages [retrieved on 12/12/2013 from: www.patentlyapple.com/patently-apple/2013/12/apple-invents-in-vehicle-holistic-id-for-ios-in-the-car.html]
	5	Official Action for U.S. Patent Application No. 13/679,441, mailed Jan. 16, 2014 (Attorney's Ref. No. 6583-244) 6 pages
	6	Official Action for U.S. Patent Application No. 13/678,773, mailed Dec. 30, 2013 (Attorney's Ref. No. 6583-315) 9 pages

Examiner Signature		Date Considered	

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

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Attorney Docket Number:	6583-247

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	18051636
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	28-JAN-2014
Filing Date:	16-NOV-2012
Time Stamp:	18:49:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	5064
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-247_IDS_02.pdf	157343 07a22361b3016da14f59e14cd8fbf907a0e94184	yes	4
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	4	
Warnings:					
Information:					
2	Non Patent Literature	PURCHER_Apple_Invents_In-Vehicle.pdf	756299 16eae4e6d98c8855f4523681915b27648c976b9f	no	8
Warnings:					
Information:					
3	Non Patent Literature	6583-244_OA_01-16-2014.pdf	204870 cf795a1d6a0174d740f0c952513e469dbf3fef9f	no	6
Warnings:					
Information:					
4	Non Patent Literature	6583-315_OA_12-30-2013.pdf	328953 05fa3d9f364e26bf0da2c2082aaa9329419429f0	no	9
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30476 84f0eb99abd17dc282cff03f3ef0c162d981a3f4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1477941		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-247	)	
Entitled: "Vehicle Middleware"	)	*Electronically Submitted*

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

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence

Ford Ex. 1161 Page 254 of 520

of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☒	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☒ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: January 28, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

111285 7590 05/20/2014

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WILLIAMS, JEFFERY L	
ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
05/20/2014	ELECTRONIC

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

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

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

flexpatents@sheridanross.com

Office Action Summary	Application No. 13/679,476	Applicant(s) RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2495	AIA (First Inventor to File) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *4/20/13*.

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

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

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

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

Disposition of Claims

5)☒ Claim(s) *1 – 6, 8 – 18, and 21 – 23* is/are pending in the application.

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

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1 – 6, 8 – 18, and 21 – 23* is/are rejected.

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

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

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

Application Papers

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

11)☒ The drawing(s) filed on *11/16/12* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

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

Attachment(s)

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

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/28/14, 10/17/13*.

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

4) ☐ Other: _____.

DETAILED ACTION

This action is in response to the communication filed on 4/20/13.

All objections and rejections not set forth below have been withdrawn.

Claims 1 – 6, 8 – 18, and 21 – 23 are pending.

Any references to applicant's specification are made by way of applicant's U.S. pre-grant printed patent publication.

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

Claim Rejections - 35 USC § 112

> The following is a quotation of 35 U.S.C. 112(b):
> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 6, 8 – 18, and 21 – 23 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claims 1 – 6, 8 – 18, and 21 – 23, the elements of "…computational module selector…", "…plurality of processing modules …", "…first processing module

…", "…second processing module …", "…arbitration module…", "…health check module …", "…displayed object movement module …", "…media filter module …", "…diagnostic module…", "…remote control module…", "…media controller module …", "…installation supervisor module …", "…network security module…", "… network controller…", "…unified communications presence reporting module…", and "…social networking module…" (e.g. claims 1 – 6, 8 – 18, and 21 – 22), "…computational module selector to select…", "…plural computation modules…to perform…", "…network selector module to select…", "…network controller module to cache…", "social networking module to enable", and "processing modules ... to connect to exchange..." (e.g. claim 23), are limitations that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. The examiner notes that applicant disclosure only broadly recites general elements such as software, hardware, or logic (e.g. Specification, par. 374-376). Means-plus-function recitations, however, must be adequately disclosed in the form of specific computer algorithms or hardware structural features that transform a general purpose computing device into a specific purpose computing device.

Applicant may:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 5, 8 – 13, 19, and 20 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Yakes et al. (Yakes), US 2003/0158638 A1A1.

Regarding claim 1, as best understood in light of the above rejections, Yakes discloses:

a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a means, comprising a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules.

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service; wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 2:16 – control program; par. 102, 103). Herein, Yates discloses a stored software program, i.e. “network selector module”, that enables the CPU to select between different communication networks based upon protocol (e.g. “type of signal”).

Regarding claim 2, Yakes discloses:

a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (e.g. Yakes, fig. 2:14; par. 184, 185). Herein, the CPU may execute at least one module (i.e. primary control). Furthermore, information transfer for at least some of the modules is accomplished wirelessly.

Regarding claim 3, Yakes discloses:

wherein the vehicle comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module (e.g. Yakes, fig. 2:14, 16 - CPU). CPU's arbitrate the execution of tasks such as by semaphore.

Regarding claim 4, Yakes discloses:

wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module (e.g. Yakes, par. 336).

Regarding claim 5, Yakes discloses:

wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system (e.g. Yakes, par. 357).

Regarding claim 8, Yakes discloses:

and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service (e.g. Yakes, par. 91).

Regarding claim 9, Yakes discloses:

and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator (e.g. Yakes, par. 281).

Regarding claim 10, Yakes discloses:

and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems (e.g. Yakes, par. 184).

Regarding claim 11, Yakes discloses:

and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module (e.g. Yakes, fig. 2).

Regarding claim 12, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (e.g. Yakes, fig. 2; par. 297).

Regarding claim 13, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application (e.g. Yakes, fig. 2). The software modules comprise different types of functions (i.e. different versions).

Regarding claims 19 and 20, they comprise essentially similar limitations as claim above, and they are rejected, at least, for the same reasons.

Claim Rejections - 35 USC § 103

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

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

Claims 21 and 23 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes in view of Yousefi et al. (Yousefi), US 2012/0110356 A1.

Regarding claim 21, Yakes discloses:

a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a means, comprising a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules.

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks

local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service; wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 2:16 – control program; par. 102, 103). Herein, Yates discloses a stored software program, i.e. "network selector module", that enables the CPU to select between different communication networks based upon protocol (e.g. "type of signal").

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information (e.g. Yakes, fig. 34; par. 179, 185, 205). Herein, Yates discloses a stored software element, i.e. "social networking module", which enables the vehicle modules to exchange, over a wireless network, information with other vehicle modules.

Yakes discloses a system of software modules for monitoring a vehicle, such as by video from a camera (e.g. Yakes, par. 180, 184). However, Yakes does not appear to disclose caching streaming media within the system.

Yousefi also discloses a system for monitoring a vehicle using video from a camera. Furthermore Yousefi discloses:

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation … (e.g. Yousefi, fig. 60, 61; par. 155, 320, 342 - 345). Herein, Yousefi

discloses that automatically steaming media, such as camera footage, may be cached in the event of a change in vehicle state or operation.

and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state (e.g. Yousefi, fig. 60, 61; par. 346, 347). Herein, Yousefi discloses that automatically steaming media, such as camera footage, may be cached in the event a parked vehicle becomes unsettled or otherwise involved within a collision (i.e. unparked). Furthermore, the examiner notes that while Yousefi does not explicitly state that a collision results in movement or motion, one of ordinary skill will logically recognize in light of physical principle that a collision may result in motion of the parked vehicle.

wherein each of the afore-mentioned modules are stored in non-transient, tangible computer readable memory (e.g. Yakes, par. 419, 420).

Regarding claim 23, the examiner notes that the applicant's recitations of a "selector module", "network controller module" and "social networking module" invoke the 35 USC 112, 6th paragraph because the terms do not apply to any specific structure and the applicant does further define their structure within the claim by the recitation of "implemented substantially in software". However, for the applicant's benefit, the examiner notes that if the applicant had intended for the claim language to be interpreted as reciting software modules, and not according to any specific means

disclosed within the applicant's specification, then the examiner finds claim 23 to be rejected, at least, for the same reasons as claim 21.

Response to Arguments

Applicant's arguments filed 1/28/14 have been fully considered but they are not persuasive.

Applicant argues or alleges essentially that:

…

Without admission as to the validity of these rejections and solely to facilitate prosecution, Applicants cancel Claim 19 and have amended Claims 1-18 to require that each module element be stored in a non-transient, tangible computer readable memory. As mentioned above, Claim 20 is canceled.

Accordingly, the rejections of Claims 1-18 under 35 U.S.C. § 112 should be reconsidered and withdrawn, and the rejections of Claims 19 and 20 under 35 U.S.C. § 112 are moot.

…

(Remarks, pg. 10)

Examiner respectfully responds:

The examiner respectfully disagrees. Specifically, the examiner notes that the applicant's claims only recite that the "**afore**-mentioned modules" are stored in memory. However, the applicant fails to address the recited "computational module selector", (which, as best can be determined by the examiner, would correspond to a CPU) or the plurality of subsequently recited modules in the depending claims. These elements do not correspond to known and specific structures and are recited by the applicant in the form of "means-plus-function" language.

Applicant argues or alleges essentially that:

…

As stated above, Applicants have amended independent Claim 1 to, inter alia, additionally require the features of now-canceled dependent Claim 7. Because dependent Claim 7 was not rejected under 35 U.S.C. § 102 to Yakes, amended Claim 1 is therefore allowable. Claims 2-28 depend from Claim 1.

Accordingly, for at least the reasons above, Applicants submit that the rejections of Claims 1-18 under 35 U.S.C. § 102 should be reconsidered and withdrawn.

…

(Remarks, pg. 10)

Examiner respectfully responds:

The examiner respectfully disagrees. As presently recited, the particular claim limitations of independent claim 1, as noted by the applicant, no longer invoke the use of "means-plus-function" language and therefore, are no longer required to be interpreted, as best could have been determined by the examiner, according to a specific means disclosed within applicant's specification. Rather, these limitations are broadly limited to any software element that performs the recited function. Thus, the examiner finds the claims to be rejected according to the reasons noted of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

See Notice of References Cited.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)272-7965. The examiner can normally be reached on 9:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Farid Homayounmerhr can be reached on 571-272-3739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFERY WILLIAMS/
Primary Examiner, Art Unit 2495

Notice of References Cited	Application/Control No. 13/679,476	Applicant(s)/Patent Under Reexamination RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2495	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2012/0259951 A1	10-2012	Schalk et al.	709/217
*	B	US-2006/0274829 A1	12-2006	Siemens et al.	375/240.01
*	C	US-2014/0125802 A1	05-2014	Beckert et al.	348/148
*	D	US-2012/0284292 A1	11-2012	Rechsteiner et al.	707/758
*	E	US-2011/0267204 A1	11-2011	Chuang et al.	340/933
*	F	US-2011/0035098 A1	02-2011	Goto et al.	701/36
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	1	of	1	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	2006/0047386	03/02/2006	Kanevsky et al.	
	2	2008/0051957	02/28/2008	Breed et al.	
	3	2013/0231800	09/05/2013	Ricci	

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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	4	PURCHER "Apple Invents In-Vehicle Holistic ID for "iOS in the Car"," Patently Apple, Dec. 2013, 8 pages [retrieved on 12/12/2013 from: www.patentlyapple.com/patently-apple/2013/12/apple-invents-in-vehicle-holistic-id-for-ios-in-the-car.html]
	5	Official Action for U.S. Patent Application No. 13/679,441, mailed Jan. 16, 2014 (Attorney's Ref. No. 6583-244) 6 pages
	6	Official Action for U.S. Patent Application No. 13/678,773, mailed Dec. 30, 2013 (Attorney's Ref. No. 6583-315) 9 pages

Examiner Signature	/Jeffery Williams/	Date Considered	05/14/2014

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [2] Applicant's unique citation designation number (optional). [3] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [4] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [5] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [6] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [7] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.W./

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	Art Unit
	JEFFERY WILLIAMS	2437

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
PALM: inventor name search	10/7/2013	jw
East search: uspat, uspgpub, epo, jpo, derwent	10/7/2013	jw
NPL search: ibmtdb	10/7/2013	jw
limited classification search: 713, 726, 380	10/7/2013	jw
updated search	5/10/2014	jw
CPC limited search: H04W 84, 4; G06F 13; H04L 12; H04H 60; H04M 1	5/10/2014	jw

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

	/JEFFERY WILLIAMS/ Primary Examiner.Art Unit 2437

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	1	of	4	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5794164	08/11/1998	Beckert et al.	
	2	6484082	11/19/2002	Millsap et al.	
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Examiner Signature	/Jeffery Williams/	Date Considered	05/14/2014

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

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(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	2	of	4	Attorney Docket Number	6583-247

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	45	2013/0144462	06/06/2013	Ricci	
	46	2013/0144463	06/06/2013	Ricci et al.	
	47	2013/0144469	06/06/2013	Ricci	
	48	2013/0144470	06/06/2013	Ricci	
	49	2013/0144474	06/06/2013	Ricci	
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	51	2013/0144520	06/06/2013	Ricci	
	52	2013/0144657	06/06/2013	Ricci	
	53	2013/0145065	06/06/2013	Ricci	
	54	2013/0145279	06/06/2013	Ricci	
	55	2013/0145297	06/06/2013	Ricci et al.	
	56	2013/0145360	06/06/2013	Ricci	
	57	2013/0145401	06/06/2013	Ricci	
	58	2013/0147638	06/13/2013	Ricci	
	59	2013/0151031	06/13/2013	Ricci	
	60	2013/0151065	06/13/2013	Ricci	
	61	2013/0151088	06/13/2013	Ricci	
	62	2013/0152003	06/13/2013	Ricci et al.	
	63	2013/0154298	06/20/2013	Ricci	
	64	2013/0158821	06/20/2013	Ricci	
	65	2013/0166097	06/27/2013	Ricci	
	66	2013/0167159	06/27/2013	Ricci et al.	
	67	2013/0198737	08/01/2013	Ricci	
	68	2013/0198802	08/01/2013	Ricci	

Examiner Signature	/Jeffery Williams/	Date Considered	05/14/2014

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
(Use as many sheets as necessary)				First Named Inventor	Christopher Ricci
				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	3	of	4	Attorney Docket Number	6583-247

	69	2013/0200991	08/08/2013	Ricci et al.	
	70	2013/0203400	08/08/2013	Ricci	
	71	2013/0204466	08/08/2013	Ricci	
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	74	2013/0204943	08/08/2013	Ricci	
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	76	2013/0205412	08/08/2013	Ricci	
	77	2013/0218412	08/22/2013	Ricci	
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	80	2013/0241720	09/19/2013	Ricci et al.	
	81	2013/0245882	09/19/2013	Ricci	
	82	7738462	06/15/2010	HWANG	

UNPUBLISHED U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	83	13/462593	05/02/2012	Ricci et al.	
	84	13/462596	05/02/2012	Ricci et al.	
	85	13/829605	03/14/2013	Ricci	
	86	13/830066	03/14/2013	Ricci et al.	
	87	13/840240	03/15/2013	Ricci	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Examiner Signature	/Jeffery Williams/	Date Considered	05/14/2014

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.W./

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Gilberto Barron Jr.
Sheet	4	of	4	Attorney Docket Number	6583-247

	88	"Cadillac: 2013 XTS Full-Size Luxury Sedan," Cadillac.com, 4 pages, Jun. 2012 internet archive, found at: (web.archive.org/web/20120606185204/http://www.cadillac.com/xts-luxury-sedan.html)
	89	LEE "Cadillac revamps the instrument panel with CUE," CNET Reviews, Oct. 11, 2011, 5 pages, found at: (reviews.cnet.com/8301-12261_7-20118807-10356022/cadillac-revamps-the-instrument-panel-with-cue/)
	90	MARTURANO "General Motors Takes a CUE from Customers," InContext, Nov. 08, 2011, 3 pages, found at: (incontextdesign.com/blog/general-motors-takes-a-cue-from-customers/)
	91	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US12/65510, mailed May 06, 2013 (Attorney's Ref. No. 6583-244-PCT) 17 pages
	92	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US12/65613, mailed Feb. 15, 2013 (Attorney's Ref. No. 6583-247-PCT) 9 pages
	93	Official Action for U.S. Patent Application No. 13/679,441, mailed Sep. 05, 2013 (Attorney's Ref. No. 6583-244) 6 pages
	94	Official Action for U.S. Patent Application No. 6583-315, mailed Jul. 09, 2013 (Attorney's Ref. No. 6583-315) 10 pages
	95	"Time-triggered CAN," CIA, © 2001-2013, 4 pages, found at: (www.can-cia.org/index.php?id+166)
	96	DAVIS et al. "Controller Area Network (CAN) schedulability analysis: Refuted, revisited and revised," Real-Time Systems, Apr. 2007, Vol. 35, No. 3, pages 239-272
	97	DI NATALE "Controller Area Network," Dec. 2009, 54 pages
	98	FONSECA et al. "Scheduling for a TTCAN network with a stochastic optimization algorithm," Proceedings 8th Internatioanl CAN Conference, Jan. 2002, 7 pages
	99	HARTWICH et al. "CAN Network with Time Triggered Communication," Robert Bosch GmbH Proceedings 7th International CAN Conference, Jul. 2000, 7 pages
	100	IDSTEIN et al. "Using the Controller Area Network for Communication Between Prostesis Sensors and Control Systems," Proceedings of the 2011 MyoElectric Controls/Powered Prostetics Symposium Fredericton, New Brunswick, Canada, Aug. 14-19, 2011, 4 pages

Examiner Signature	/Jeffery Williams/	Date Considered	05/14/2014

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L24	17	l23 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:09
L23	37	DLNA and (register$7 connect$3) same (interrupt$3 disturb halt$4 stop$4) with (view$3 watch$3 stream$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:09
L22	2	(DVR video with recorder VOD) same (switch$3 chang$3) with (mode) same connect$3 with request	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:05
L21	0	("713".clas. "709".clas. "726".clas. "380".clas.) and (DVR video with recorder VOD) same (switch$3 chang$3) with (mode) same connect$3 with request	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:04
L20	1	("713".clas. "709".clas. "726".clas. "380".clas.) and (mode and connection adj request and access adj permission and reproduction adj signal).clm.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:03
L19	1	(mode and connection adj request and access adj permission and reproduction adj signal).clm.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:02
L18	1	("713".clas. "726".clas. "380".clas.) and (mode and connection adj request and access adj permission and reproduction adj signal).clm.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 22:02
L16	22	l15 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:57
L15	25	UPnP and (connect$3 join$3 regist$7) with client and server same (interrupt$3) with	US-PGPUB; USPAT;	OR	ON	2013/10/12 21:56

		(stream$3 view$3 playback watch$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB			
L14	8	DLNA and (connect$3 join$3 regist$7) with client and server same (interrupt$3) with (stream$3 view$3 playback watch$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:56
L13	8	DLNA and (connect$3 join$3 regist$7) with client and server with (interrupt$3) with (stream$3 view$3 playback watch$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:53
L12	5	DLNA and regist$7 with client and (interrupt$3) with (stream$3 view$3 playback watch$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:39
L11	11	DLNA with clients and (interrupt$3) with (stream$3 view$3 playback watch$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:38
L10	7	l9 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:33
L9	7	peer with (interrupt$3) with (stream$3 view$3 playback watch$3) and (DVR VOD video with recorder)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 21:32
L8	3	l7 and (interrupt$3) with (stream$3 view$3 playback watch$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:55
L7	18	l6 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:36
L6	19	(US-20120131649-$ or US-20100077026-$ or US-20090033806-$ or US-20070106899-$ or US-20060253852-$ or US-20050198357-$ or US-20030188320-$ or US-20090180617-$ or US-20110307376-$ or US-20110110271-$ or US-20100313225-$ or US-20100281534-$ or US-20100281508-$ or US-20100185764-$ or US-20100138900-$ or	US-PGPUB	OR	ON	2013/10/12 19:35

		US-20090307307-$ or US-20100036907-$ or US-20080271076-$ or US-20080235746-$).did.				
L5	2	(DVR recorder STB) with regist$6 and interrupt$4 with GUI	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:33
L4	0	(DVR recorder STB) with regist$6 and interrupt$4 with (watching viewing) with GUI	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:33
L3	5	l2 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:30
L2	9	(DVR recorder STB) with regist$6 with (access permission) and interrupt$4 with (watching viewing)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:30
L1	0	(DVR recorder STB) with interrupt$4 with (watching viewing) same regist$6 with new with device	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 19:13
S23	6	S22 and interrupt$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 16:07
S22	19	(US-20120131649-$ or US-20100077026-$ or US-20090033806-$ or US-20070106899-$ or US-20060253852-$ or US-20050198357-$ or US-20030188320-$ or US-20090180617-$ or US-20110307376-$ or US-20110110271-$ or US-20100313225-$ or US-20100281534-$ or US-20100281508-$ or US-20100185764-$ or US-20100138900-$ or US-20090307307-$ or US-20100036907-$ or US-20080271076-$ or US-20080235746-$).did.	US-PGPUB	OR	ON	2013/10/12 16:00
S21	3	(recorder DVR) same interrupt$3 with view$3 same (registrat$3 register)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 11:28
S20	1	(recorder DVR) with interrupt$3 with view$3 same (registrat$3 register)	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	2013/10/12 11:28

			DERWENT; IBM_TDB			
S19	1	(recorder DVR) with interrupt$3 with view$3 with (registrat$3 register)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 11:28
S18	6	(recorder DVR) with interrupt$3 same (registrat$3 register) with (client tv device)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/12 11:27
S14	118	S13 and (@ad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 02:33
S13	137	S12 and (register$3 registration associat$3) with (client device) with server	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 02:31
S12	289	S11 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 02:30
S11	509	S10 and (connection registration access) with request$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 02:29
S10	1113	dlna and (register$3 registration associat$3) with (client device)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 02:26
S9	36	S8 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:32
S8	49	("709".clas. "713".clas. "726".clas. "380".clas.) and (connect$3 associat$3) with client with DVR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:32
S7	33	("709".clas. "713".clas. "726".clas. "380".clas.) and (connect$3) with client with DVR	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	2013/03/25 01:32

			DERWENT; IBM_TDB			
S6	11	S5 and client same (register$3 registration)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:26
S5	48	S4 and (@ad<"20090912" @rlad<"20090912")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:25
S4	60	("709".clas. "713".clas. "726".clas. "380".clas.) and (register$3 registration) with DVR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:24
S3	9	"20070106899" "20060253852" "20050198357"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:19
S2	4	"20090033806" "20100077026"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 01:13
S1	2	"20120131649"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/25 00:27

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L17	1	("713".clas. "726".clas. "380".clas.) and (mode and connection adj request and access adj permission and reproduction adj signal).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/10/12 22:01

10/12/2013 10:13:35 PM
C:\Users\jwilliams\Documents\EAST\Workspaces\13388127-ApparatusRegistrationMethodandServerDevice.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	**Art Unit**
	JEFFERY WILLIAMS	2437

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

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

CLAIM		DATE								
Final	Original	10/07/2013	05/12/2014							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	-							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
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	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	-							
	20	✓	-							
	21		✓							
	22		✓							
	23		✓							

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci et al.	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**INTERVIEW SUMMARY**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Commissioner:

On July 2, 2014, Examiner Williams and the undersigned held a brief telephone conversation. During the conversation, with respect to the pending Office Action mailed May 20, 2014, the rejections of the claims under 35 U.S.C. §112 were discussed, as well as further distinguishing features of the invention. No final agreement regarding allowance was reached.

The undersigned thanks Examiner Williams for his time and guidance.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: July 2, 2014

By: */Richard E. Zelenka/*

Richard E. Zelenka
Reg. No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700

Electronic Acknowledgement Receipt

EFS ID:	19478498
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	02-JUL-2014
Filing Date:	16-NOV-2012
Time Stamp:	14:08:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	Applicant_Interview_Summary_2July2014.pdf	79942 4bc7f78b243da47c98a301ab552d6eba73b090b0	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	79942

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

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

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

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

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	13/679,476	Filing Date	2012-11-16	Docket Number (if applicable)	6583-247	Art Unit	2495
First Named Inventor	Christopher Ricci			Examiner Name	WILLIAMS, Jeffery		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 191970

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Richard E. Zelenka/	Date (YYYY-MM-DD)	2014-07-31
Name	Richard E. Zelenka	Registration Number	63179

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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Privacy Act Statement

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

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

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

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

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

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**AMENDMENT AND RESPONSE**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Commissioner:

Applicants submit this Amendment and Response, and Request for Continued Examination, to address the final Office Action having a mailing date of May 20, 2014. While Applicants believe no additional fees are due with the filing of this Amendment and Response, the undersigned hereby authorizes the Commissioner to charge any fees deemed necessary to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on **page 2** of this paper.

Remarks/Arguments begin on **page 10** of this paper.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected computational module being the most current version or release of the selected computational module;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol;

wherein each of the ~~afore-mentioned~~ computational module selector, computation modules and the network selector module are stored in a non-transient, tangible computer readable memory.

2. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

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3. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

4. (Currently Amended) The vehicle of claim 3, wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

5. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

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6. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

7. (Canceled)

8. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

9. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested

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vehicle function is executed or caused to be executed notwithstanding a contrary command from the vehicle operator, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

10. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant and wherein the media controller module, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

11. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises an installation supervisor module to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

12. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices

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comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

15. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station and wherein the media controller module permits a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

16. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state, wherein the computational module selector

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continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

17. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

18. (Currently Amended) The vehicle of claim 1, wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

19. – 20. (Canceled)

21. (Currently Amended) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected computational module being the most current version or release of the selected computational module;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local

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to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol;

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state;

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information;

wherein each of the ~~afore-mentioned~~ computational module selector, computation modules, network controller module, social networking module and the network selector module are stored in a non-transient, tangible computer readable memory.

22. (Currently Amended) The vehicle of claim 21, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

23. (Currently Amended) A vehicle, comprising:

a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to

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perform a selected task, operation, and/or function, the selected computational module being the most current version or release of the selected computational module;

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol;

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state;

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information;

wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded;

wherein each of the computational module selector, computation modules, network controller module, social networking module and the network selector module are stored in a non-transient, tangible computer readable memory.~~afore-mentioned modules are implemented substantially in software.~~

REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed May 20, 2014, claims 1-6, 8-18 and 21-23 were pending in the application. Claims 1-6, 8-11, 14-18 and 21-23 are amended. Support for the claim amendments is found at least at [0160], [0232]-[0234], [0240] and [0260] of the application as published. Claims 7, 19 and 20 were previously canceled. There are no new claims. No new matter has been added. Claims 1, 21 and 23 are independent claims.

Therefore, claims 1-6, 8-18 and 21-23 are present for examination. Applicants respectfully request reconsideration of this application as amended.

Interview Summary *(as submitted on July 2, 2014; provided here for convenience)*

On July 2, 2014, Examiner Williams and the undersigned held a brief telephone conversation. During the conversation, with respect to the pending Office Action mailed May 20, 2014, the rejections of the claims under 35 U.S.C. §112 were discussed, as well as further distinguishing features of the invention. No final agreement regarding allowance was reached.

The undersigned thanks Examiner Williams for his time and guidance.

Rejections Under 35 U.S.C. §112

Claims 1-6, 8-18 and 21-23 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for reciting various limitations that allegedly invoke 35 U.S.C. §112, sixth paragraph, without sufficient written description.

Without admission as to the validity of these rejections and solely to facilitate prosecution, Applicants have amended each of the independent claims and several dependent claims to require that each module element be stored in a non-transient, tangible computer readable memory.

Accordingly, the rejections of Claims 1-6, 8-18 and 21-23 under 35 U.S.C. § 112 should be reconsidered and withdrawn.

Rejections Under 35 U.S.C. §102 and Under 35 U.S.C. §103

Claims 1-5, 8-13, 19 and 20 are rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent Application Publication No. 2003/0158638 to Yakes et al. ("Yakes"). Claim 21 and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable

over Yakes in view of U.S. Patent Application Publication No. 2012/0110356 to Yousefi ("Yousefi").

In order for a rejection under 35 U.S.C. § 102 to be proper, each and every claim element must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Applicants respectfully request reconsideration because the Office Action has failed to show a *prima facie* case of anticipation under § 102. Indeed, "for anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." See MPEP §706.2, Original Eighth Edition, August 2001, Latest Revision July 2010. Adiga fails to teach each and every aspect of the claims.

To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Eighth Edition, August 2001, Latest Revision August 2012.

However, all of the elements of the rejected claims cannot be found in the cited references, whether those references are considered alone or in combination.

For example, at least the following features of amended claim 1 are not disclosed or suggested by the cited references, i.e. a vehicle comprising: 1) a computational module selector to select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected computational module being the most current version or release of the selected computational module; 2) wherein the vehicle further comprises a network selector module to select one of plural communication

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networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service; and 3) wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol.

Indeed, primary reference Yakes and secondary reference Yousefi teach away from some features.

For example, Yakes requires two on more communication networks, e.g. "each of the communication networks 1661-1663 may be formed of two or more communication networks to provide redundancy within each control system." *See* [0236]. In contrast, amended Claim 1 requires a "network selector module to select one of plural communication networks."

Additionally, Yousefi requires what appears to be a hard-coded network configuration that must conform to rigid protocols, e.g. "the network manager 40 coordinate[s] communication of packets, via the network fabric 32, among the vehicle control modules 38, the memory 46, and the multimedia processing module(s) 48 based on individual content of the packets and in accordance with a global vehicle network communication protocol" wherein "the processing module of the network node generates a header section of a frame to include a preamble, a vehicle network field, and routing information." *See* [0141] and [0216]. In contrast, amended Claim 1 requires a network selector module that "selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service."

The dependent claims provide further reasons for allowance. For example, each a Claims 16 and 22 require "wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device." In contrast, primary reference Yakes assigns computational resources based on vehicle operating mode, e.g. "the load manager 616 in the control unit 14 permits a high degree

of flexibility to be obtained. For example, the priority level of output devices can be changed without requiring any hardware changes" so that "the priority of the output devices can change dynamically as a function of the operating mode of the fire truck." See [0149] and [0150].

Accordingly, for at least the reasons above, Applicants submit that the rejections of Claims 1-6, 8-18 and 21-23 under 35 U.S.C. § 102 and the rejections of claims 21 and 23 under 35 U.S.C. § 103 should be reconsidered and withdrawn.

Conclusion

Based on the foregoing, Applicants believe all pending claims are in condition for allowance. Applicants do not acquiesce to any objection, rejection, or argument not specifically addressed herein. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: */Richard E. Zelenka/*

Richard E. Zelenka
Registration No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: July 31, 2014

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Richard Eric Zelenka/Lynn Tumey
Attorney Docket Number:	6583-247

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for Continued Examination	1801	1	1200	1200
		Total in USD ($)		**1200**

Electronic Acknowledgement Receipt

EFS ID:	19737762
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Lynn Tumey
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	31-JUL-2014
Filing Date:	16-NOV-2012
Time Stamp:	11:50:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1200
RAM confirmation Number	9598
Deposit Account	191970
Authorized User	

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

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

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Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	RCE.pdf	697670 a297d2284ccdac7336fc600f2a0a5eb25fe363bb	no	3
Warnings:					
Information:					
2		Amendment_Response_31July2014.pdf	148146 ac82778de0713fc48133cc78e6220aeffc523641	yes	13

Multipart Description/PDF files in .zip description

Document Description	Start	End
Response After Final Action	1	1
Claims	2	9
Applicant Arguments/Remarks Made in an Amendment	10	13

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30347 4fe5e252c3e7614271c604c1a8e6e1499466d3e6	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	876163		

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/679,476	Filing Date 11/16/2012	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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

APPLICATION AS AMENDED – PART II

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

AMENDMENT	07/31/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	=	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

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

LIE
/PEGGY YARBOROUGH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	1	of	4	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5363306	11/08/1994	Kuwahara et al.	
	2	5508689	04/16/1996	Rado et al.	
	3	5648769	07/15/1997	Sato et al.	
	4	5710702	01/20/1998	Hayashi et al.	
	5	5838251	11/17/1998	Brinkmeyer et al.	
	6	5890080	03/30/1999	Coverdill et al.	
	7	6678747	01/13/2004	Goossen et al.	
	8	7493140	02/17/2009	Michmerhuizen et al.	
	9	7643913	01/05/2010	Taki et al.	
	10	7899610	03/01/2011	McClellan	
	11	8346432	01/01/2013	Van Wiemeersch et al.	
	12	8432260	04/30/2013	Talty et al.	
	13	8532574	09/10/2013	Kirsch	
	14	8725311	05/13/2014	Breed	
	15	2002/0105968	08/08/2002	Pruzan et al.	
	16	2003/0007227	01/09/2003	Ogino	
	17	2005/0031100	02/10/2005	Iggulden et al.	
	18	2007/0057781	03/15/2007	Breed	
	19	2008/0090522	04/17/2008	Oyama	
	20	2008/0129475	06/05/2008	Breed et al.	
	21	2008/0234919	09/25/2008	Ritter et al.	
	22	2009/0275321	11/05/2009	Crow	
	23	2009/0278806	11/12/2009	Duarte et al.	
	24	2009/0279839	11/12/2009	Nakamura et al.	
	25	2010/0202346	08/12/2010	Sitzes et al.	
	26	2010/0235042	09/16/2010	Ying	
	27	2010/0253493	10/07/2010	Szczerba et al.	
	28	2011/0195699	08/11/2011	Tadayon et al.	
	29	2012/0006610	01/12/2012	Wallace et al.	
	30	2012/0089299	04/12/2012	Breed	
	31	2012/0116609	05/10/2012	Jung et al.	
	32	2012/0084792	04/05/2012	Benedek et al.	

Examiner Signature		Date Considered	

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	2	of	4	Attorney Docket Number	6583-247

	33	2012/0084735	04/05/2012	Sirpal	
	34	2012/0109446	05/03/2012	Yousefi et al.	
	35	2012/0115446	05/10/2012	Guatama et al.	
	36	2012/0238286	09/20/2012	Mallavarapu et al.	
	37	2012/0242510	09/27/2012	Choi et al.	
	38	2012/0296567	11/22/2012	Breed	
	39	2012/0313771	12/13/2012	Wottlifff, III	
	40	2013/0099940	04/25/2013	Protopapas	
	41	2013/0179689	07/11/2013	Matsumoto et al.	
	42	2013/0190978	07/25/2013	Kato et al.	
	43	2013/0288606	10/31/2013	Kirsch	
	44	2013/0295901	11/07/2013	Abramson et al.	
	45	2013/0309977	11/21/2013	Heines et al.	
	46	2014/0066014	03/06/2014	Nicholson et al.	
	47	2014/0088798	03/27/2014	Himmelstein	
	48	2014/0120829	05/01/2014	Bhamidipati et al.	

UNPUBLISHED U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	49	14/468055	08/25/2014	Ricci	
	50	14/485467	09/12/2014	Ricci	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	51	"A8: Technology as standard," Screen-shots from Audi.co.uk, 2014 [retrieved on 4/16/2014], 1 page. Retrieved from: www.audi.co.uk/new-cars/a8/a8/technology-as-standard/mmi-touch.html

Examiner Signature		Date Considered	

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	3	of	4	Attorney Docket Number	6583-247

	52	"Audi A8 MMI Touch," Audi of America, Jan. 7, 2011, [retrieved on 4/16/2014], 2 pages. Retrieved from: www.youtube.com/watch?v=O2nZ-WHo9IA
	53	DIAZ, "Audi New MMI Touch Input System Makes Perfect Sense," Gizmodo.com, Dec. 1, 2009 [retrieved on 4/16/2014], 12 pages. Retrieved from: http://gizmodo.com/5416342/audi-new-mmi-touch-input-system-makes-perfect-sense
	54	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2012/065510, mailed May 30, 2014 (Attorney's Ref. No. 6583-244-PCT) 14 pages
	55	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2012/065613, mailed May 30, 2014 (Attorney's Ref. No. 6583-247-PCT) 8 pages
	56	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US2014/019983, mailed Aug. 18, 2014 (Attorney's Ref. No. 6583-247-CIP-PCT) 10 pages
	57	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19216, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-6-PCT) 8 pages
	58	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19209, mailed Apr. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-13-PCT)
	59	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19201, mailed Jul. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-15-PCT) 11 pages
	60	Official Action for U.S. Patent Application No. 13/679,857, mailed Jun. 27, 2014 (Attorney's Ref. No. 6583-231) 5 pages
	61	Official Action for U.S. Patent Application No. 13/679,878, mailed Sep. 26, 2014 (Attorney's Ref. No. 6583-232) 7 pages
	62	Official Action for U.S. Patent Application No. 13/679,875, mailed Apr. 07, 2014 (Attorney's Ref. No. 6583-233) 7 pages RESTRICTION REQUIREMENT
	63	Official Action for U.S. Patent Application No. 13/679,875, mailed Jul. 17, 2014 (Attorney's Ref. No. 6583-233) 13 pages
	64	Official Action for U.S. Patent Application No. 13/679,441, mailed May 09, 2014 (Attorney's Ref. No. 6583-244) 6 pages
	65	Notice of Allowance for U.S. Patent Application No. 13/679,441, mailed Jul. 22, 2014 (Attorney's Ref. No. 6583-244) 5 pages
	66	Official Action for U.S. Patent Application No. 13/828,513, mailed May 06, 2014 (Attorney's Ref. No. 6583-247-CIP) 7 pages
	67	Official Action for U.S. Patent Application No. 13/828,513, mailed Sep. 04, 2014 (Attorney's Ref. No. 6583-247-CIP) 5 pages
	68	Official Action for U.S. Patent Application No. 13/828,651, mailed Jul. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-2) 17 pages
	69	Notice of Allowance for U.S. Patent Application No. 13/829,157, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-7) 14 pages
	70	Official Action for U.S. Patent Application No. 13/829,505, mailed Jul. 23, 2014 (Attorney's Ref. No. 6583-247-CIP-8) 7 pages

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [2] Applicant's unique citation designation number (optional). [3] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [4] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [5] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [6] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [7] Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	4	of	4	Attorney Docket Number	6583-247

	71	Official Action for U.S. Patent Application No. 13/829,718, mailed Apr. 10, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 7 pages
	72	Official Action for U.S. Patent Application No. 13/829,718, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 8 pages
	73	Official Action for U.S. Patent Application No. 13/830,003, mailed Apr. 15, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 9 pages
	74	Official Action for U.S. Patent Application No. 13/830,003, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 9 pages
	75	Official Action for U.S. Patent Application No. 13/830,133, mailed Jul. 10, 2014 (Attorney's Ref. No. 6583-247-CIP-15) 9 pages
	76	Notice of Allowance for U.S. Patent Application No. 13/678,773, mailed Apr. 02, 2014 (Attorney's Ref. No. 6583-315) 5 pages
	77	Official Action for U.S. Patent Application No. 13/679,887, mailed Jun. 30, 2014 (Attorney's Ref. No. 6583-316) 6 pages

Examiner Signature		Date Considered	

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

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)
(PCT Rule 44bis.1(c))

To:

WILSON, Tadd, F.
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202
ETATS-UNIS D'AMERIQUE

Date of mailing *(day/month/year)* 30 May 2014 (30.05.2014)	
Applicant's or agent's file reference 6583-244-PCT	**IMPORTANT NOTICE**

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2012/065510	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

Applicant
FLEXTRONICS AP , LLC

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. +41 22 338 82 70

Authorized officer
Lingfei Bai

e-mail: pt02.pct@wipo.int

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 6583-244-PCT	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2012/065510	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)	Priority date *(day/month/year)* 16 November 2011 (16.11.2011)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant FLEXTRONICS AP , LLC		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 13 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☒	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 20 May 2014 (20.05.2014)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Lingfei Bai e-mail: pt02.pct@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: TADD F. WILSON
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	06 MAY 2013
Applicant's or agent's file reference 6583-244-PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 12/65510	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G01M 17/00 (2013.01); G06F 7/00 (2013.01)
USPC - 701/31.5

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	29 March 2013 (29.03.2013)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

Reasons for Lack of Unity of Invention:

This application contains the following inventions or groups of inventions that are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group 1: Claims 1-30, 41-70, 81-90, and 101-110 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

Group 2: Claims 31-40, 71-80, 91-100 and 111-120 directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The inventions listed as Groups 1 - 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group 1 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising receiving a signal at a vehicle communication system from a device, automatically determining if the signal originates from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal, but if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device.

The special technical feature of the Group 2 invention is directed to a method, system and computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method comprising a vehicle communication system to receive a request for a function/application, determine one or more of available resources, available devices and available sources, determine load/cloud service/multimedia service, select/command a device or source to provide/activate the function/application/cloud service/multimedia service.

The only common technical feature shared by the above groups is a vehicle communication system.

However, this shared technical feature does not represent a contribution over prior art, because the shared technical feature is anticipated/made obvious by reference US 7,548,815 B2 to Watkins et al. (Published on16 June 2009) that discloses a vehicle communication system in Abstract, col 8, ln 10-18 (Vehicle system module 290 contains one or more processors, one or more memory devices, and one or more connection ports. In one embodiment, VSM 290 includes a software switch for scanning received information such as, for example, real-time traffic updates and location information to identify that data has been received. VSM 290 is coupled to a vehicle communication network 212, and therefore to any other device that is also coupled to vehicle communication network 212).

As the above technical feature of vehicle communication system as taught by Watkins et al was known, this cannot be considered a special technical feature that would otherwise unify the groups.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. Claims 1-30, 41-70, 81-90, and 101-110

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

1. Statement

Novelty (N)	Claims	1-30, 41-70, 81-90, 101-110	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-30, 41-70, 81-90, 101-110	NO
Industrial applicability (IA)	Claims	1-30, 41-70, 81-90, 101-110	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1, 16, 41-47, 49, 50, 56, 81-90, and 101-110 lack an inventive step under PCT Article 33(3) as being obvious over US 2010/0097239 A1 to Campbell et al. (hereinafter Campbell) in view of US 2010/0090817 A1 to Yamaguchi et al. (hereinafter Yamaguchi).

Regarding claim 1, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and providing access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 16, Campbell discloses a computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method for providing a universal bus, the computer-executable instructions comprising: instructions to receive a signal at a vehicle communication system from a device (para [0069]); instructions to automatically determine if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and instructions to provide access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said computer-executable instructions comprise if the signal originates from inside the vehicle, instructions to communicatively connect the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

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In case the space in any of the preceding boxes is not sufficient.

Continuation of:
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Regarding claim 41, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]): automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and receiving a message from a first device (para [0070]); and providing the message to a second device (para [0070]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device and verifying that the message originated from inside the vehicle and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 42, in the combination of Campbell and Yamaguchi, Campbell further discloses that the message is directed to the second device (para [0070]).

Regarding claim 43, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising accessing signal data in a signal data database to retrieve address information from the second device (para [0141]).

Regarding claim 44, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising accessing signal data in a signal data database to retrieve address information for the first device (para [0141]).

Regarding claim 45, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising comparing an address for the first device in the message with the retrieved address information (para [0070]).

Regarding claim 46, in the combination of Campbell and Yamaguchi, Campbell further discloses that if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 47, in the combination of Campbell and Yamaguchi, Campbell further discloses that the message is sent through the vehicle communication system to the second device (para [0070]).

Regarding claim 49, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]).

Regarding claim 50, in the combination of Campbell and Yamaguchi, Campbell further discloses that the first device communicates to the second device through the at least one wireless LAN component (para [0064]).

Regarding claim 56, Campbell discloses a computer readable medium having stored thereon computer-executable instructions, the computer executable instructions causing a processor to execute a method for providing a universal bus, the computer-executable instructions comprising: instructions to receive a message from a first device (para [0070]); and instructions to provide the message to a second device (para [0070]). Campbell does not expressly disclose that said computer-executable instructions comprise instructions to verify that the message originated from inside the vehicle. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

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Box V. 2. Citations and explanations:

Regarding claim 81, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle ((" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and providing access to a vehicle bus (para [0069]). determining one or more of available resources, available devices, and available sources (para [0137]); determining cloud services connected to the available resources, available devices, and available sources (para [0083]); receiving input on a user interface of the vehicle, wherein the input requests a cloud service (para [0131]); routing the input to a device (para [0131]); receiving, from the device, data from the cloud service (para [0083]); and providing the data on the display of the vehicle (para [0132]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 82, in the combination of Campbell and Yamaguchi, Campbell further discloses that a vehicle communication system sends signal data to a processor to determine the available resources, available devices, and available sources and the cloud services (para [0053]).

Regarding claim 83, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system determines which cloud sources are available through the device (para [0083]).

Regarding claim 84, in the combination of Campbell and Yamaguchi, Campbell further discloses that the processor determines which cloud sources are available through a server (para [0083]).

Regarding claim 85, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising presenting the cloud services information on a touch sensitive display (para [0041]).

Regarding claim 86, in the combination of Campbell and Yamaguchi, Campbell further discloses that the device is a computing system (para [0116]).

Regarding claim 87, in the combination of Campbell and Yamaguchi, Campbell further discloses that the cloud service is for the provision of data or for the execution of an application (para [0083]).

Regarding claim 88, in the combination of Campbell and Yamaguchi, Campbell further discloses that the input is received on the touch sensitive display (para [0041]).

Regarding claim 89, in the combination of Campbell and Yamaguchi, Campbell further discloses that the input is analyzed to determine a correct source for the cloud service (para [0083]).

Regarding claim 90, in the combination of Campbell and Yamaguchi, Campbell further discloses that based on the analysis, the vehicle communication system routes the input to the correct device (para [0083]).

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In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 101, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); determining one or more of available resources, available devices, and available sources (para [0137]); determining multimedia sources associated with the available resources, available devices, and available sources (para [0055]); receiving input on a user interface of the vehicle, wherein the input multimedia (para [0055]); routing the input to an available resource, available device, and available source (para [0087]); receiving a multimedia steam from an available resource, available device, and available source (para [0088]); and presenting the multimedia stream on an output of the vehicle (para [0070]). Campbell does not expressly disclose that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).

Regarding claim 102, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising caching the multimedia stream (para [0061]).

Regarding claim 103, in the combination of Campbell and Yamaguchi, Campbell further discloses that two or more multimedia streams are received from two or more sources (para [0064]).

Regarding claim 104, in the combination of Campbell and Yamaguchi, Campbell further discloses that all of the two or more multimedia streams are cached (para [0061]).

Regarding claim 105, in the combination of Campbell and Yamaguchi, Campbell further discloses that determining multimedia sources associated with the available resources, available devices, and available sources comprises canvassing the available resources, available devices, and available sources for multimedia available at those available resources, available devices, and available sources (para [0137]).

Regarding claim 106, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising:
consolidating the multimedia (para [0117]); and
presenting the multimedia on a vehicle touch sensitive display (para [0132]).

Regarding claim 107, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising determining if safety parameters are met for presentation of the multimedia stream (para [0099]).

Regarding claim 108, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising if safety parameters are met for presentation of the multimedia stream, presenting the multimedia stream (para [0099]).

Regarding claim 109, in the combination of Campbell and Yamaguchi, Campbell further discloses further comprising if safety parameters are not met for presentation of the multimedia stream, recording the multimedia stream (para [0099]).

Regarding claim 110, in the combination of Campbell and Yamaguchi, Campbell further discloses that the multimedia stream is recorded in local storage (para [0116]).

Claims 2-9, 11-15, 17-19, 48, 51-55, and 57-60 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi, and further in view of US 2010/0144284 A1 to Chutorash et al. (hereinafter Chutorash).

Regarding claim 2, Campbell and Yamaguchi disclose the method of claim 1.
Campbell and Yamaguchi do not expressly disclose that the vehicle communication system include a communication system in communication with two or more transceivers.
However, Chutorash discloses that the vehicle communication system include a communication system in communication with two or more transceivers (para [0053]).
It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system include a communication system in communication with two or more transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system include a communication system in communication with two or more transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

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Regarding claim 3, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that two or more of the transceivers are BLUETOOTH transceivers (para [0045]).

Regarding claim 4, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that two or more antennas for the vehicle communication system are separated but positioned within the vehicle (para [0033]).

Regarding claim 5, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system analyzes the signal (para [0075]).

Regarding claim 6, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the analysis includes one or more of:
determining signal characteristics (para [0027]);
determining location information;
determining person information;
determining movement information (para [0062]); and
determining sensor information.

Regarding claim 7, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the communication system resolves the analysis to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 8, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]).

Regarding claim 9, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the device communicates with the at least one wireless LAN component (para [0064]).

Regarding claim 11, Campbell discloses a vehicle communication system (para [0007]), comprising: a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]); wherein the signal processor is operable to: receive a signal at the vehicle communication system from a device (para [0069]); automatically determine if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); and provide access to a vehicle bus (para [0069]). Campbell does not expressly disclose that said signal processor is operable to if the signal originates from inside the vehicle, communicatively connect the vehicle communication system to the device and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said vehicle communication system comprises two or more BLUETOOTH transceivers. However, Chutorash discloses that said vehicle communication system comprises: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said vehicle communication system comprises two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said vehicle communication system comprises two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 12, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]).

Regarding claim 13, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises a signal data database (para [0141]).

Regarding claim 14, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises a translator (para [0120]).

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Regarding claim 15, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the signal processor is further operable to: determine signal characteristics (para [0027]); determine location information; determine person information; determine movement information (para [0062]); determine sensor information; and resolve the signal characteristics, location information, person information, movement information, and sensor information to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 17, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes: at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]); a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]). Campbell and Yamaguchi do not expressly disclose that the vehicle communication system includes two or more BLUETOOTH transceivers. However, Chutorash discloses that the vehicle communication system includes: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system includes two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system includes two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 18, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises: a signal data database (para [0141]); and a translator (para [0120]).

Regarding claim 19, in the combination of Campbell, Yamaguchi, and Chutorash, Chutorash further discloses that the signal processor executes instructions to: determine signal characteristics (para [0027]); determine location information; determine person information; determine movement information (para [0062]); determine sensor information; and resolve the signal characteristics, location information, person information, movement information, and sensor information to determine if the signal originated inside the vehicle (para [0060]).

Regarding claim 48, Campbell and Yamaguchi disclose the method of claim 41. Campbell and Yamaguchi do not expressly disclose that verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle. However, Chutorash discloses that verifying the message comprises: determining signal characteristics (para [0027]); determining location information; determining person information; determining movement information (para [0062]); determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle (para [0060]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from verifying the message comprises determining signal characteristics; determining location information; determining person information; determining movement information; determining sensor information; and resolving the signal characteristics, location information, person information, movement information, and sensor information to determine if the message originated inside the vehicle, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 51, Campbell discloses a vehicle communication system (para [0007]), comprising: a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]); wherein the signal processor is operable to: receiving a message from a first device (para [0070]); and providing the message to a second device (para [0070]). Campbell does not expressly disclose that the signal processor is operable to verifying that the message originated from inside the vehicle. However, Yamaguchi discloses that the signal processor is operable to: verifying that the message originated from inside the vehicle ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that the signal processor is operable to verifying that the message originated from inside the vehicle, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the signal processor is operable to verifying that the message originated from inside the vehicle, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said vehicle communication system comprises two or more BLUETOOTH transceivers. However, Chutorash discloses that said vehicle communication system comprises: two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said vehicle communication system comprises two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said vehicle communication system comprises two or more BLUETOOTH transceivers, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 52, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the message is directed to the second device (para [0070]).

Regarding claim 53, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising: accessing signal data in a signal data database to retrieve address information from the second device (para [0141]), and accessing signal data in a signal data database to retrieve address information for the first device (para [0141]).

--Please See Continuation Sheet-

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US 12/65510

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 54, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising comparing an address for the first device in the message with the retrieved address information (para [0070]), wherein if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 55, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the message is sent through the vehicle communication system to the second device (para [0070]).

Regarding claim 57, in the combination of Campbell and Yamaguchi, Campbell further discloses that the vehicle communication system includes: at least one wireless LAN component (para [0064]), and wherein at least one device connects through the wireless LAN component (para [0064]); a communication system (para [0040]) comprising: two or more communication modules (para [0065]); a signal processor (para [0053]). Campbell and Yamaguchi do not expressly disclose that the vehicle communication system includes two or more BLUETOOTH transceivers. However, Chutorash discloses that the vehicle communication system includes:
two or more BLUETOOTH transceivers (para [0045], [0053]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that the vehicle communication system includes two or more BLUETOOTH transceivers, as disclosed by Chutorash, because Campbell, Yamaguchi, and Chutorash are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the vehicle communication system includes two or more BLUETOOTH transceivers s, because such systems and methods configure a wireless control system of a vehicle (Chutorash para [0004]).

Regarding claim 58, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the communication system further comprises: a signal data database (para [0141]); and a translator (para [0120]).

Regarding claim 59, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses further comprising:
instructions to access signal data in a signal data database to retrieve address information from the second device (para [0141]),
instructions to access signal data in a signal data database to retrieve address information for the first device (para [0141]); and
instructions to compare an address for the first device in the message with the retrieved address information (para [0070]), wherein if the address for the first device in the message is the same as the retrieved address information, the message is verified (para [0070]).

Regarding claim 60, in the combination of Campbell, Yamaguchi, and Chutorash, Campbell further discloses that the vehicle communication system includes at least one wireless LAN component (para [0064]), and wherein the first device communicates to the second device through the at least one wireless LAN component (para [0064]).

Claims 21-30 and 61-70 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi and US 2009/0278750 A1 to Man et al. (hereinafter Man).

Regarding claim 21, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]);receiving a request for a function (para [0090]); determining one or more of available resources, available devices, and available sources (para [0137]); selecting a device or source to provide the function (para [0068]); commanding the device or source to provide the function (para [0108]); and receiving the function (para [0109]).
Campbell does not expressly disclose that the method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the lent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]).
The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said method comprises determining load. However, Man discloses that said method comprises: determining load (para [0019]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said method comprises determining load, as disclosed by Man, because Campbell, Yamaguchi, and Man are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises determining load, because such systems and methods provide relatively high performance multi-band antennas for operation in EDGE, CODMA and/or WCDMA systems (Man para [0008]).

Regarding claim 22, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the vehicle communication system includes a communication system in communication with one or more devices (para [0040]).

--Please See Continuation Sheet--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US 12/65510

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 23, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the device is a computing system (para [0116]).

Regarding claim 24, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the function is one of playing of multimedia data (para [0055]), provisioning of access to the internet (para [0059]), or providing access to e-mail (para [0070]).

Regarding claim 25, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that determining the load comprises one of: determining a number of input/output messages sent between a device and vehicle communication system (para [0045]); or analyzing information sent to the vehicle communication system by the device (para [0070]).

Regarding claim 26, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the selection of the device or source is based both on availability and load (para [0137]).

Regarding claim 27, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a first device requests the function (para [0090]).

Regarding claim 28, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a second device provides the function (para [0108]).

Regarding claim 29, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the request for the function is received by the vehicle communication system (para [0090]).

Regarding claim 30, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a device provides the function for the vehicle communication system (para [0090]).

Regarding claim 61, Campbell discloses a method, comprising: receiving a signal at a vehicle communication system from a device (para [0069]); automatically determining if the signal originates from inside the vehicle (" determination is made as to whether there is a connection to the vehicle control system (step 1306) (e.g., a connection between the component to be trained and the vehicle control system). If so, a determination as to whether a connection may be made between the vehicle control system and a phone or other outside device is made (step 1308)" para [0088]); receiving a request for an application (para [0083]); determining one or more of available resources, available devices, and available sources (para [0137]); activating function on a device or source to execute the application (para [0139]); receiving, from the device, application user interface information or data at the vehicle to be displayed on a display associated with the vehicle (para [0131]); and
displaying the application on the display (para [0132]).Campbell does not expressly disclose that the method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device,and if the signal does not originate from inside the vehicle, rejecting the signal. However, Yamaguchi discloses that said method comprises: if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device ("determine whether the electronic portable key is located in an interior wireless communicatable area formed inside the vehicle or an exterior wireless communicatable area formed outside the vehicle" para [0008]) and if the signal does not originate from inside the vehicle, rejecting the signal ("The control unit limits the operations of the vehicle that can be performed in accordance with the communicable area in which the sub-key is located when determining that the sub-key is not in the tent state" para [0008]-[0009]]). It would have been obvious to one having ordinary skill in the art to modify the system and method of Campbell so as that said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, as disclosed by Yamaguchi, because Campbell and Yamaguchi are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises if the signal originates from inside the vehicle, communicatively connecting the vehicle communication system to the device, because such systems and methods provide a vehicle electronic portable key system that improves the level of security (Yamaguchi para [0007]). The combination of Campbell and Yamaguchi discloses the foregoing, but does not expressly disclose that said method comprises determining load. However, Man discloses that said method comprises:determining load (para [0019]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell and Yamaguchi so as that said method comprises determining load, as disclosed by Man, because Campbell, Yamaguchi, and Man are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from said method comprises determining load, because such systems and methods provide relatively high performance multi-band antennas for operation in EDGE, CODMA and/or WCDMA systems (Man para [0008]).

Regarding claim 62, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising: commanding the vehicle communication system to perform functions for the application (para [0135]).

Regarding claim 63, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising receiving input on the display (para [0125]).

Regarding claim 64, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses further comprising based on the input received on the display, executing an application function on the device (para [0139]).

Regarding claim 65, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the vehicle communication system includes a communication system in communication with one or more devices (para [0040]).

Regarding claim 66, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the device is a computing system (para [0116]).

--Please See Continuation Sheet--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65510

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V. 2. Citations and explanations:

Regarding claim 67, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that determining the load comprises one of: determining a number of input/output messages sent between a device and vehicle communication system (para [0045]); or analyzing information sent to the vehicle communication system by the device (para [0070]).

Regarding claim 68, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the selection of the device or source is based both on availability and load (para [0137]).

Regarding claim 69, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that the request for the application is received by the vehicle communication system (para [0083]).

Regarding claim 70, in the combination of Campbell, Yamaguchi, and Man, Campbell further discloses that a device provides the application for the vehicle communication system (para [0139]).

Claims 10 and 20 lack an inventive step under PCT Article 33(3) as being obvious over Campbell in view of Yamaguchi and Chutorash, and further in view of US 2011/0105097 A1 to Tadayon et al. (hereinafter Tadayon).

Regarding claim 10, Campbell, Yamaguchi, and Chutorash disclose the method of claim 9.
Campbell, Yamaguchi, and Chutorash do not expressly disclose that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle. However, Tadayon discloses that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle (para [0069]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell, Yamaguchi, and Chutorash so as that the analysis is weighted to resolve the determination of if the signal originated inside the vehicle, as disclosed by Tadayon, because Campbell, Yamaguchi, Chutorash, and Tadayon are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the analysis is weighted to resolve the determination of if the signal originated inside the vehicle, because such systems and methods limit/disable the use of some of mobile device features which could cause distraction to the user when the user is engaged in another activity (Tadayon para [0010]).

Regarding claim 20, Campbell, Yamaguchi, and Chutorash disclose the computer readable medium of claim 19.
Campbell, Yamaguchi, and Chutorash do not expressly disclose that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle. However, Tadayon discloses that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle (para [0069]). It would have been obvious to one having ordinary skill in the art to modify the systems and methods of Campbell, Yamaguchi, and Chutorash so as that the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle, as disclosed by Tadayon, because Campbell, Yamaguchi, Chutorash, and Tadayon are directed to systems and methods for vehicle communication. Furthermore, users of such systems and methods benefit from the signal characteristics, location information, person information, movement information, and sensor information is weighted to resolve the determination of if the signal originated inside the vehicle, because such systems and methods limit/disable the use of some of mobile device features which could cause distraction to the user when the user is engaged in another activity (Tadayon para [0010]).

Claims 1-30, 41-70, 81-90, and 101-110 have industrial applicability as defined by PCT Article 33(4), because the subject matter can be made or used in industry.

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)
(PCT Rule 44bis.1(c))

To:

SWARTZ, Douglas, W.
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202
ETATS-UNIS D'AMERIQUE

Date of mailing *(day/month/year)* 30 May 2014 (30.05.2014)	
Applicant's or agent's file reference 6583-247-PCT	**IMPORTANT NOTICE**

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2012/065613	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

Applicant
FLEXTRONICS AP, LLC

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. +41 22 338 82 70

Authorized officer
Yukari Nakamura

e-mail: pt07.pct@wipo.int

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 6583-247-PCT	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2012/065613	International filing date *(day/month/year)* 16 November 2012 (16.11.2012)	Priority date *(day/month/year)* 16 November 2011 (16.11.2011)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant FLEXTRONICS AP, LLC		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 20 May 2014 (20.05.2014)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Yukari Nakamura e-mail: pt07.pct@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	15 FEB 2013
Applicant's or agent's file reference 6583-247-PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 12/65613	16 November 2012 (16.11.2012)	16 November 2011 (16.11.2011)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - B60T 8/172 (2013.01)
USPC - 701/1

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	19 January 2013 (19.01.2013)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

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

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

2. Citations and explanations:
(PLEASE SEE SUPPLEMENTAL BOX)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

Claims 1-13, 18-20 lack an inventive step under PCT Article 33(3) as being obvious over US 2006/0042846 A1 to Kojori et al. (hereinafter 'Kojori') in view of US 6,484,082 B1 to Millsap et al. (hereinafter 'Millsap') and US 2011/0106375 A1 to Gurusamy Sundaram et al. (hereinafter 'Gurusamy')

As to claim 1, Kojori teaches a vehicle, comprising at least one of: (a) a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions ("one computer unit could be operational while the other is on standby if the arbitration method employed could meet the criticality requirements established for the vehicle computer system," para [0027]); (b) an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules (para [0027]); (c) a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations ("system health," para [0029]). Kojori fails to explicitly teach such a vehicle further comprising: (d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants; (e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system; (f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal; (g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal; (i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant; (k) a computational module selector to select a computational module to perform a selected task, operation, and/or function. However, Millsap teaches (d) a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants (col 11, ln 33 to col 12, ln 3); (e) a media filter to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system (col 11, ln 33 to col 12, 3); (f) a network selector to select one of plural communication networks local to the vehicle for transmitting a selected signal (col 5, ln 56 to col 6, ln 10); (g) a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal ("diagnostics virtual network," col 8, ln 53 to col 9, ln 29); (i) a media controller to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant (col 11, ln 33 to col 12, ln 3); (k) a computational module selector to select a computational module to perform a selected task, operation, and/or function ("The activation of a virtual network to perform a particular control task," col 5, ln 34-55). Kojori and Millsap fail to explicitly teach such a vehicle further comprising: (h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request; (j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle; (l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network; (m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station; (n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation; (o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle; and (p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information. However, Gurusamy teaches such a vehicle further comprising: (h) a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request ("user authentication," para [0032], [0039]); (j) an installation supervisor to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle (software stack also handles application security, rights management, copy protection, security against virus attacks etc. The application programs stored in the secured layers have controlled access," para [0029]); (l) a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network (para [0029]); (m) a media controller to detect movement of a computational device from an authorized station to an unauthorized station and restrict, relative to wireless connection to the authorized station, an operation and/or function of the computational device when wirelessly connected to the unauthorized station ("rights management," para [0029]); (n) a network controller to cache automatically streaming media in response to a vehicle state change, function, and/or operation (para [0003], [0021]); (o) a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle ("determine that a user is not present in the vehicle," para [0069]-[0071]); and (p) a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information (para [0021]). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer system of Kojori with the support for networking, media streaming, and diagnostics of Millsap and Gurusamy, because Kojori, Millsap and Gurusamy are directed to systems and methods for in-vehicle computers.
(PLEASE SEE NEXT SUPPLEMENTAL BOX)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 12/65613

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

As to claim 2, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (a), wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (para [0027]-[0028]).

As to claim 3, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (b) and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module ("Depending upon the failure arbitration method employed, one computer unit could be operational while the other is on standby if the arbitration method employed could meet the criticality requirements established for the vehicle computer system," para [0027]).

As to claim 4, the vehicle of claim 1 is discussed above. Further, Kojori teaches such a vehicle wherein the vehicle comprises (c) and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module ("vehicle computer can also perform trend or prognostic health monitoring algorithms of parameters collected by the EEMC for preventative maintenance activities," para [0030]).

As to claim 5, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (d) and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system ("Audio subsystem 220 is capable of handling several sources of input and output, decoding digital audio, multichannel sound, etc. Further, audio subsystem 220 enables in-vehicle computer 104 to recognize the user and his/her commands for providing personalized features and services to the user," para [0036]).

As to claim 6, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (e) and wherein the selected rule is one or more of a white list, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle ("The vehicle's response may include one or more of the following: (a) preventing the user from going outside the bounds (e.g., preventing the user from exceeding a specified speed limit); (b) alerting the user that he is attempting to go (or is going) outside the bounds (e.g., with an alarm or a computer voice alert); (c) alert a third party about the user's actions (e.g., alert a parent of the user; e.g., alert authorities)," para [0019]).

As to claim 7, the vehicle of claim 1 is discussed above. Further, Millsap teaches such a vehicle wherein the vehicle comprises (f) and wherein the network selector selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service (col 12, ln 4-41).

As to claim 8, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (g) and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service ("these inputs may also be transmitted in real-time to various monitoring agencies which may then provide assistance, control, information or services to the user and external agencies such as road transport authorities etc.," para [0022]).

As to claim 9, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (h) and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator ("alert a third party about the user's actions (e.g., alert a parent of the user; e.g., alert authorities)," para [0019]; para [0157]-[0159]).

As to claim 10, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (i) and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems ("In some embodiments, the same speaker system can simultaneously output two different audio tracks to two different people," para [0176]).

As to claim 11, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (j) and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module ("program module," para [0013], [0020], [0027]).

As to claim 12, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (para [0013], [0033]).

(PLEASE SEE NEXT SUPPLEMENTAL BOX)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US 12/65613

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 - Citations and explanations:

As to claim 13, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (k), wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application ("the software might be in the form of a collection of separate programs, a program module with a larger program or a portion of a program module," para [0013]).

As to claim 18, the vehicle of claim 1 is discussed above. Further, Gurusamy teaches such a vehicle wherein the vehicle comprises (p) (para [0021]).

As to claim 19, Kojori, Millsap and Gurusamy teach a non-transient, tangible computer readable medium comprising processor executable instructions to perform one or more of operations (a)-(p) referenced in claim 1.

As to claim 20, Kojori, Millsap and Gurusamy teach a method comprising steps to perform one or more of the operations (a)-(p) referenced in claim 1.

Claims 14-16 lack an inventive step under PCT Article 33(3) as being obvious over Kojori, Millsap and Gurusamy in view of US 7,891,004 B1 to Gelvin et al. (hereinafter 'Gelvin').

As to claim 14, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components. However, Gelvin teaches such a vehicle wherein the vehicle comprises (l) and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components ("isolation must be provided between essential vehicle systems and any unauthorized local or remote access attempts," col 2, ln 32-39). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for isolating specific modules of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for modular in-vehicle computer systems.

As to claim 15, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (m) and wherein the media controller permits a first function and/or operation to be performed by the computational device when wirelessly connected to the authorized station but not when wirelessly connected to the unauthorized station ("blocking coupling with unauthorized devices," Claim 32). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for authorized of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for wireless vehicle communication.

As to claim 16, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (n) and wherein the network controller caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state ("when connectivity is established with another transmitter the record download begins again where it left off," col 27, ln 19-35). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for caching and resuming data streams of Gelvin, because Kojori, Millsap, Gurusamy and Gelvin are directed to systems and methods for in-vehicle computers used for network communication.

Claim 17 lacks an inventive step under PCT Article 33(3) as being obvious over Kojori, Millsap and Gurusamy in view of US 2008/0140278 A1 to Breed.

As to claim 17, Kojori, Millsap and Gurusamy teach the vehicle of claim 1, but fail to explicitly teach such a vehicle wherein the vehicle comprises (o) and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion. However, Breed teaches such a vehicle wherein the vehicle comprises (o) and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion ("obtaining information from various sensors about the occupant(s) in the passenger compartment of the vehicle, e.g., the number of occupants, their type and their motion, if any," para [0538]). It would have been obvious to one of ordinary skill in the art to combine the vehicle computer systems of Kojori, Millsap, and Gurusamy with the support for occupant sensing of Breed, because Kojori, Millsap, Gurusamy and Breed are directed to systems and methods for in-vehicle computer systems with attributes tailored to specific detected occupants.

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

PATENT COOPERATION TREATY

ASD

RECEIVED
AUG 21 2014

From the INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

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

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 18 AUG 2014
Applicant's or agent's file reference 6583-247-CIP-PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US2014/019983	International filing date *(day/month/year)* 03 March 2014
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

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

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 Telephone No. PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-247-CIP	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2014/019983	International filing date *(day/month/year)* 03 March 2014	(Earliest) Priority Date *(day/month/year)* 14 March 2013
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 4 sheets.

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

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

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

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

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. 20

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/019983

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-21

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/019983

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 19/00 (2014.01)
USPC - 701/2
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - G06F 19/00 (2014.01)
USPC - 455/414.1, 701/2, 36, 49

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - G06F17/00, G08C 17/02, G08C 2201/93, H04L 12/66, H04L67/12 (2014.02)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Orbit, Google Patents, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2008/0065274 A1 (TAKI et al) 13 March 2008 (13.03.2008) entire document	1, 5, 6, 8, 12, 13, 15, 19, 20 ---------- 3, 4, 10, 11, 17, 18
X	US 2012/0115446 A1 (GUATAMA et al) 10 May 2012 (10.05.2012) entire document	1, 2, 7, 8, 9, 14, 15, 16, 21
Y	US 2005/0031100 A1 (IGGULDEN et al) 10 February 2005 (10.02.2005) entire document	3, 4, 10, 11, 17, 18
A	US 7,643,913 B2 (TAKI et al) 05 January 2010 (05.01.2010) abstract, figures 1-6, column 1, line 64 through column 3, line 12	1-21
A	US 8,346,432 B2 (VAN WIEMEERSCH et al) 01 January 2013 (01.01.2013) entire document	1-21

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

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

Date of the actual completion of the international search	Date of mailing of the international search report
24 July 2014	18 AUG 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

Continuation of Box III.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-21, drawn to a microprocessor executable remote control module operable to receive, via a remote node, a command from a vehicle owner to configure/alter/determine a state of a selected vehicle component and, when the vehicle owner is authenticated successfully, to configure/alter/determine a state of the selected vehicle component.
Group II, claims 22-46, drawn to a microprocessor executable networking module operable to enable on board processing modules of different privately owned vehicles to wirelessly connect to exchange information.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: as claimed therein is not present in the invention of Groups I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of a vehicle having a microprocessor executable module, this technical feature is not a special technical feature as it does not make a contribution over the prior art. Specifically, US 7,643,913 B2 (TAKI et al) 05 January 2010 (05.01.2010) abstract, figures 1-6, column 1, line 64 through column 3, line 12.

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	18 AUG 2014
Applicant's or agent's file reference 6583-247-CIP-PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2014/019983	03 March 2014	14 March 2013

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06F 19/00 (2014.01)
USPC - 701/2

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	24 July 2014	Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/019983

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/019983

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-21, drawn to a microprocessor executable remote control module operable to receive, via a remote node, a command from a vehicle owner to configure/alter/determine a state of a selected vehicle component and, when the vehicle owner is authenticated successfully, to configure/alter/determine a state of the selected vehicle component.
Group II, claims 22-46, drawn to a microprocessor executable networking module operable to enable on board processing modules of different privately owned vehicles to wirelessly connect to exchange information.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: as claimed therein is not present in the invention of Groups I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of a vehicle having a microprocessor executable module, this technical feature is not a special technical feature as it does not make a contribution over the prior art. Specifically, US 7,643,913 B2 (TAKI et al) 05 January 2010 (05.01.2010) abstract, figures 1-6, column 1, line 64 through column 3, line 12.

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-21

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/019983

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

1. Statement

Novelty (N)	Claims	3, 4, 10, 11, 17, 18	YES
	Claims	1, 2, 5-9, 12-16, 19-21	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1, 5, 6, 8, 12, 13, 15, 19, 20 lack novelty under PCT Article 33(2) as being anticipated by Taki et al., hereinafter referred to as Taki.

Regarding claims 1, 8, 15, Taki discloses a vehicle (101, Fig.1, abstract), a method (see Fig. 5, para 61), and non-transient, tangible computer readable medium comprising a microprocessor executable remote control module on board a selected vehicle (method of Fig. 5, implemented in on-vehicle device, para 18, 61) comprising: a microprocessor executable remote control module operable to receive (on-vehicle device configured to perform operation with respect to the vehicle according to an operation instruction from a vehicle remote control apparatus, para 18), via a remote node (vehicle remote control apparatus, para 18; user of the vehicle uses the communication terminal 103 to cause the vehicle 101 to perform a predetermined operation, para 38, Fig. 1), a command from a vehicle owner to configure and/or alter and/or determine a state of a selected vehicle component (operation requested from vehicle user, para 18; see Fig. 6) and, when the vehicle owner is authenticated
successfully by the remote control module (confirming user authenticity, para 42), to configure and/or alter and/or determine a state of the selected vehicle component (transmit an operation instruction corresponding to the requested remote operation to the vehicle, para 18; see Fig. 6).

Regarding claims 5, 12, 19, Taki discloses wherein the command is to change a vehicle performance mode from a first performance configuration to a second performance 20 configuration and/or alter a setting of a vehicle component associated with a power unit and/or drive train of the vehicle (opening/closing of the driver-seat window and passenger-seat window [altering setting associated with power that is required to open and close window], para 67, Fig. 6).

Regarding claims 6, 13, 20, Taki discloses wherein the command is to determine a state of the selected vehicle component (detecting vehicle condition, para 18; see para 85-86).

Claims 1, 2, 7, 8, 9, 14, 15, 16, 21 lack novelty under PCT Article 33(2) as being anticipated by Gautama et al., hereinafter referred to as Gautama.

Regarding claims 1, 8, 15, Gautama discloses a vehicle (104, para 17, Fig. 1), a method (para 6), and non-transient, tangible computer readable medium comprising a microprocessor executable remote control module on board a selected vehicle (para 8) comprising: a microprocessor executable remote control module operable to receive, via a remote node (mobile communication device 102 sends remote operations to vehicle components 114 through vehicle control system 116, see Fig. 1, para 18, 20-24), a command from a vehicle owner to configure and/or alter and/or determine a state of a selected vehicle component (remote command for settings of vehicle components, para 20-24, Fig. 1) and, when the vehicle owner is authenticated successfully by the remote control module (authentication and retrieval of driver profile, para 31-32), to configure and/or alter and/or determine a state of the selected vehicle component (para 16, 24; see para 33).

Regarding claims 2, 9, 16, Gautama discloses wherein the selected vehicle component is an on board input/output system (see vehicle components 114, Fig. 1, para 21) and wherein the configuration and/or alteration is one or more of moving a graphical object to another location, removing a graphical object from the input/output system, adding a graphical object to the input/output system, adding wall paper to the input/output system, and altering a setting of the input/output system (altering a setting, see para 21-22).

Regarding claims 7, 14, 21, Gautama discloses wherein, when a vehicle occupant is identified, the remote control module automatically configures the selected vehicle component as desired by the identified occupant (remote application of vehicle control settings automates the execution of driver preferences for a vehicle, para 16, authentication and retrieval of driver profile, para 31-32).

Supplemental Box

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

Claims 3, 4, 10, 11, 17, 18 lack an inventive step under PCT Article 33(3) as being obvious over Taki in view of Iggulden et al., hereinafter referred to as Iggulden.

Regarding claims 3, 10, 17, Gautama fails to disclose wherein the selected vehicle component is a programmable hard button and wherein the configuration and/or alteration is to assign, to the hard button, a different function.
However, Iggulden is in the field of setting preferences of a motor vehicle using a mobile device (abstract) and teaches wherein the selected vehicle component is a programmable hard button and wherein the configuration and/or alteration is to assign, to the hard button, a different function (Customize the function of "function buttons" to control selected functions of any system in the car, para 116; para 26, 63-66; see para 18-19, 263). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the programmable button features as taught in Iggulden with the invention of Gautama in order to allow the driver to assign and create individualized "function keys" (see Iggulden, para 263).

Regarding claims 4, 11, 18, Gautama fails to disclose wherein the command is to download content from the Internet and save the downloaded content in on board memory of the vehicle. However, Iggulden is in the field of setting preferences of a motor vehicle using a mobile device (abstract) and teaches wherein the command is to download content from the Internet and save the downloaded content in on board memory of the vehicle (two-way communications is that it may be used to facilitate remote troubleshooting of the motor vehicle by causing the downloading of corrective software or firmware, para 18-21). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine downloading content features as taught in Iggulden with the invention of Gautama in order to allow a user to remotely repair the motor vehicle (see Iggulden, para 21).

Claims 1-21 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Amy

RECEIVED
JUL 29 2014
SHERIDAN ROSS P.C.
DOCKETING DEPT.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

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

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 25 JUL 2014
Applicant's or agent's file reference 6583-247-CIP-6-PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 14/19216	International filing date *(day/month/year)* 28 February 2014 (28.02.2014)
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

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

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450	Lee W. Young PCT Helpdesk: 571-272-4300
Facsimile No. 571-273-3201	Telephone No. PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-247-CIP-6-PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 14/19216	International filing date *(day/month/year)* 28 February 2014 (28.02.2014)	(Earliest) Priority Date *(day/month/year)* 14 March 2013 (14.03.2013)
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 2 sheets.

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

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

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

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

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 20

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 14/19216

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04W 24/00 (2014.01)
USPC - 455/456.1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8): H04W 24/00 (2014.01)
USPC: 455/456.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
IPC(8): H04W 24/00 (2014.01)
USPC: 455/456.1 or 455/418 or 701/32.6 or 455/41.2

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Patbase, Google (Scholar, Patent); vehicle, automobile, controller, manager, restrictions, limits, disable, law, policy, regulation, media, multimedia, player, location, phone, device, tablet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/0195699 A1 (Tadayon et al.) 11 August 2011 (11.08.2011) entire document (especially para [0053], [0058]-[0068], [0096], [0125]-[0126], [01778]-[0180], [0321], [0263]-[0268], [0306]-[0307], [0321])	1-39
A	US 2012/0238286 A1 (Mallavarapu et al.) 20 September 2012 (20.09.2012) entire document	1-39

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

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

Date of the actual completion of the international search	Date of mailing of the international search report
15 June 2014 (15.06.2014)	25 JUL 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	25 JUL 2014
Applicant's or agent's file reference 6583-247-CIP-6-PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 14/19216	28 February 2014 (28.02.2014)	14 March 2013 (14.03.2013)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04W 24/00 (2014.01)
USPC - 455/456.1

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	15 June 2014 (15.06.2014)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 14/19216

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 14/19216

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

1. Statement

Novelty (N)	Claims	None	YES
	Claims	1-39	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-39	NO
Industrial applicability (IA)	Claims	1-39	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-39 lack novelty under PCT Article 33(2) as being anticipated by US 2011/0195699 A1 to Tadayon et al. (hereinafter Tadayon).

As per claims 1, 14, and 27, Tadayon teaches a vehicle (para [0041], [0061]) (and a corresponding method (abstract) and non-transient, tangible computer readable medium (para [0061]-[0065], [0215]), [0227], [0276]) comprising a microprocessor executable media controller on board the vehicle operable (a) to determine a first spatial location of an external communication device (e.g. a localized unit uses a processor/controller to perform logical and other calculations, control the transmitters/transceivers, communicate with the mobile device via transceiver(s), and receive data/status from vehicle's computer/control or sensors...localized device communicates (710) with the vehicle's computer/control (708) system or sensor, para [0061]-[0062]; e.g. mobile device location is determined by using the localized transmitters/transceivers, para [0063]-[0065]);
the external communication device being in wireless communication with the on board media controller and the first spatial location being associated with a first set of restrictions (e.g. using Bluetooth or similar technology, para [0055], [0091]; e.g. instead of driver (at 212) attempting to use a feature (e.g., SMS), the mobile device can be handed to a person on the passenger side (at 214) to perform the function. Similarly, the mobile device (e.g., at 224) can be used by a person on the back seat (216) to perform the task, para [0058]; e.g. after the mobile device receives a signal from a localized transmitter/transceiver...SMS... should be changed (e.g., to become limited or disabled), para [0045]);
the first set of restrictions being at least one of a control on connectivity access by the external communication device, a restriction on the connectivity access, and a restriction on one or more functions of the external communication device (para [0045], [0051]-[0053], [0057], [0219]) and (b), in response, to apply the first set of restrictions (e.g. event would indicate that one or more feature or functionality of the mobile device (e.g., SMS) should be changed (e.g., to become limited or disabled)...the feature (e.g., SMS) of the mobile device is changed (e.g., disabled), para [0045]).

As per claims 2, 15, and 28, Tadayon teaches as a result of applying the first set of restrictions, the media controller declines to accept connectivity access by the external communication device (para [0218]-[0219]).

As per claims 3, 16, and 29, Tadayon teaches the vehicle as a result of applying the first set of restrictions, the media controller applies a restriction on the connectivity access (para [0045], [0051]-[0053], [0057], [0219]).

As per claims 4, 17, and 30, Tadayon teaches as a result of applying the first set of restrictions, the media controller restricts the one or more functions of the external communication device (para [0045], [0051]-[0053], [0057], [0219]).

As per claims 5, 18, and 31, Tadayon teaches the media controller measures, at a plurality of connectivity access points, a respective signal strength associated with a transmission by the external communication device, and, based on the measurements, determines the first spatial location by triangulation (para [0184], [0251]; para [0058]-[0064], [0092], [0095], [0319]).

As per claims 6, 19, and 32, Tadayon teaches a second spatial location is associated with a second set of restrictions, the first and second sets of restrictions being different from one another (para [0052]-[0053], [0321]).

As per clams 7, 20, and 33, Tadayon teaches the media controller monitors the external communication for a change from the first to the second spatial locations and, upon detecting the change, applies the second set of restrictions (para [0052]-[0053], [0321]).

As per claims 8, 21, and 34, Tadayon teaches the media controller is operable to receive a media stream from a remote node, the received media stream being for an occupant associated with at least one of an on board vehicle input/output system and external communication device, identify which on board vehicle input/output systems and/or external communication devices are restricted by the first set of restrictions and provide the media stream, in compliance with the first set of restrictions, to a selected input/output system and/or external communication device associated with the occupant (para [0125]-[0126], [0321]).

-Continuation in Supplemental Box-

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 14/19216

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fu lly supported by the description, are made:

Claim 9 depends on claim 9. For examinations purposes, claims 9 depends on claim 1.
Claim 12 depends on claim 12. For examinations purposes, claims 12 depends on claim 8.
Claim 13 depends on claim 13. For examinations purposes, claims 13 depends on claim 11.

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V, 2: Citations and Explanations

As per claims 9, 22, and 35, Tadayon teaches the first set of restrictions are applied as a due to operator command and/or as a result of a governing law (para [0126]; para [0053], [0232]-[0234], [0321]).

As per claims 10, 23, and 36, Tadayon teaches the media stream is for all occupants of the vehicle but is provided only to unrestricted input/output systems and/or external communication devices, the unrestricted input/output systems and/or external communication devices being a subset of all input/output systems and/or external communication devices on board the vehicle (para [0206]; para [0058]-[0059], [0125]-[0126], [0221]-[0222]).

As per claims 11, 24, and 37, Tadayon teaches the restriction is as a result of a governing law and wherein the media controller, for a current satellite-positioning-system based position of the vehicle, current state of the vehicle, and a selected input/output system and/or external communication device determines that a law restricts the input/output system and/or external communication device from performing at least one of the following functions: texting from an on board input/output system and/or external communication device, displaying streaming video content to an on board input/output system and/or external communication device, initiating and/or continuing a cellular call, and providing a media channel of a multimedia media stream (para [0306]-[0307]; para [0053], [0125]-[0126], [01778]-[0180], [0321], [0263]-[0268]).

As per claims 12, 25, and 38, Tadayon teaches the selected input/output system and/or external communication device is associated with the vehicle operator and the current state of the vehicle is one or more of moving and in gear (para [0306]-[0307]; para [0096], [0125]-[0126]).

As per claims 13, 26, and 39, Tadayon teaches the function is providing a media channel of a multimedia media stream and wherein the media controller presents a first channel, but not a second, of the multimedia stream to the selected input/output system and/or external communication device (para [0222], [0235], para [0058], [0183], [0206], [0279]).

Claims 1-39 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

Amy

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

APR 28 2014

To:
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202
USA

PCT

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

(PCT Rule 44.1)

	Date of mailing (*day/month/year*) 25 APR 2014
Applicant's or agent's file reference 6583-247-CIP	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US14/19209	International filing date (*day/month/year*) 28 February 2014 (28.02.2014)
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70.

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer John Nguyen Telephone No. 571-272-6952

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-247-CIP	**FOR FURTHER ACTION** see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US14/19209	International filing date (*day/month/year*) 28 February 2014 (28.02.2014)	(Earliest) Priority Date (*day/month/year*) 14 March 2013 (14.03.2013)
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 7 sheets.

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

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

5. With regard to the **abstract**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 20
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US14/19209

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **G06F 7/00**(2006.01);**B60K 5/00**(2006.01)

USPC: 701/36;180/232
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 701/36; 180/232

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0057781 A1 (Breed) 15 March 2007, see entire document.	1-24

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 April 2014 (22.04.2014)	25 APR 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer John Nguyen Telephone No. 571-272-6952

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202
USA

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing (*day/month/year*) 25 APR 2014

Applicant's or agent's file reference
6583-247-CIP

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US14/19209	28 February 2014 (28.02.2014)	14 March 2013 (14.03.2013)

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

IPC: **G06F 7/00**(2006.01);**B60K 5/00**(2006.01)
USPC: 701/36;180/232

Applicant

FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	22 April 2014 (22.04.2014)	John Nguyen Telephone No. 571-272-6952

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY	International application No. PCT/US14/19209

Box No. I Basis of this opinion

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

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

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

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

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

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form.

☐ furnished subsequently to this Authority for the purposes of search.

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

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY	International application No. PCT/US14/19209

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

1. Statement

Novelty (N)	Claims NONE	YES
	Claims 1-24	NO
Inventive step (IS)	Claims NONE	YES
	Claims 1-24	NO
Industrial applicability (IA)	Claims 1-24	YES
	Claims NONE	NO

2. Citations and explanations:

Please See Continuation Sheet

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:
Claims 1-24 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Claims 1-24 lacks novelty under PCT Article 33(2), as being anticipated by Breed (U.S. Pub No. 20070057781).

Regarding claims 1, 9, 17, as best understood, Breed discloses a method, a non-transient, tangible computer readable medium, a vehicle comprising: a microprocessor executable displayed object movement module operable to receive a selected target vehicle display and/or target vehicle occupant to receive a currently displayed object on a source vehicle display of a source vehicle occupant and forward the currently displayed object, in substantial real time, to the selected target vehicle display of the target vehicle occupant and/or a portable computational device associated with the target vehicle occupant and currently located within the vehicle (See paragraph 0016, 0017).

Regarding claims 2, 10, 18, Breed discloses the displayed object is one or more of streaming video, a web page, an icon, a window, and an application and wherein the currently displayed object is directed by a media controller on board the vehicle to the selected target vehicle display of the target vehicle occupant, and/or a computational device associated with the target vehicle occupant and currently located within the vehicle and is not transmitted by a network component located physically outside of the vehicle (See 0017 for remote transmission,0222, 0784, 0806,0965).

Regarding claims 3, 11, 19, Breed discloses the selected target vehicle display and/or target vehicle occupant is selected by the source vehicle occupant by one or more of a

gesture received by the source vehicle display, the gesture indicating a position and/or orientation of the target vehicle display and/or target vehicle occupant relative to the source vehicle display, a selection, received by the source vehicle display, of the target vehicle display, and a selection, received by the source vehicle display, of an identifier associated with the target vehicle occupant and wherein the displayed object is one or more of streaming video, a web page, an icon, a window, and an application (See paragraph 0222, 1012).

Regarding claims 4, 12, 20, Breed discloses gestures used (See paragraph 1011) wherein the selected target vehicle display and/or target vehicle occupant is selected by the source vehicle occupant by the gesture being received by the source vehicle display and wherein the gesture indicates a vector originating substantially at a seating position of the source vehicle occupant and pointing towards a seating position of the target vehicle occupant (See paragraph 0989).

Regarding claims 5, 13, 21, Breed discloses the selected target vehicle display and/or target vehicle occupant is selected by the source vehicle occupant by the selection, received by the source vehicle display, of the target vehicle display and wherein the selection is made by the source vehicle occupant selecting a seating position of the target vehicle occupant on a displayed seating diagram of the vehicle (See 0989).

Regarding claims 6, 14, 22, Breed discloses The vehicle of claim 1, wherein the source vehicle occupant selects multiple target vehicle occupants and wherein the displayed object is provided, substantially simultaneously, to the selected multiple target vehicle occupants (See paragraph 0981).

Regarding claims 7, 15, 23, Breed discloses the displayed object movement module determines whether the target vehicle display is activated and, when not activated, causes the target vehicle display to be activated to receive the displayed object (See paragraph 0977).

Regarding claims 8, 16, 24, Breed discloses the displayed object movement module determines whether the target vehicle display is activated and, when not activated, causes the displayed object to be transmitted to the computational device associated with the target vehicle occupant (See paragraph 0993, 0776, 0946, 0949).

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

RECEIVED AUG 04 2014

Amy

To:
DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

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

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 29 JUL 2014
Applicant's or agent's file reference 6583-247-CIP-15-PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 14/19201	International filing date *(day/month/year)* 28 February 2014 (28.02.2014)
Applicant FLEXTRONICS AP, LLC	

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

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

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

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

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

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

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

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

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

4. **Reminders**

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

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

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

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

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

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450	Authorized officer Lee W. Young PCT Helpdesk: 571-272-4300
Facsimile No. 571-273-3201	Telephone No. PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 6583-247-CIP-15-PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 14/19201	International filing date *(day/month/year)* 28 February 2014 (28.02.2014)	(Earliest) Priority Date *(day/month/year)* 14 March 2013 (14.03.2013)
Applicant FLEXTRONICS AP, LLC		

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

This international search report consists of a total of 9 sheets.

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

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

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

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

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. 20

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 14/19201

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G01M 17/00 (2014.01)
USPC - 701/29.1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 701/29.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 714/11, 701/29.1 (keyword limited - see search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase; Google; Google Scholar
Terms: vehicle, automobile, network, bus, module, sensor, backup, standby, replace, primary, active, main, controller, replicate, identical, redundant, state, mode, synchronize, failure, repair, arbitrate, score, threshold, monitor, manage, weight, scale, shadow, wireless, airbag.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012/0109446 A1 (Yousefi et al.) 03 May 2012 (03.05.2012), entire document, especially abstract, Figs. 2, 3, 14, 17, para [0007], [0130], [0131], [0136], [0139], [0143], [0150], [0156], [0158], [0166], [0181], [0192], [0193], [0290], [0321], [0333], [0455].	1-39
A	US 5,508,689 A (Rado et al.) 16 April 1996 (16.04.1996), entire document.	1-39
A	US 7,899,610 B2 (McClellan) 01 March 2011 (01.03.2011), entire document.	1-39

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

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

Date of the actual completion of the international search	Date of mailing of the international search report
16 June 2014 (16.06.2014)	29 JUL 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: DOUGLAS W. SWARTZ
SHERIDAN ROSS P.C.
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	29 JUL 2014
Applicant's or agent's file reference 6583-247-CIP-15-PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 14/19201	28 February 2014 (28.02.2014)	14 March 2013 (14.03.2013)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G01M 17/00 (2014.01)
USPC - 701/29.1

Applicant FLEXTRONICS AP, LLC

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

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

2. **FURTHER ACTION**

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

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

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	16 June 2014 (16.06.2014)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 14/19201

Box No. I Basis of this opinion

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

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

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

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

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

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

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

5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 14/19201

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

1. Statement

Novelty (N)	Claims	None	YES
	Claims	1-39	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-39	NO
Industrial applicability (IA)	Claims	1-39	YES
	Claims	None	NO

2. Citations and explanations:
Claims 1-39 lack novelty under PCT Article 33(2) as being anticipated by US 2012/0109446 A1 to Yousefi et al. (hereinafter Yousefi).

Regarding claim 1, Yousefi teaches a vehicle (Fig. 2, vehicles 10, para [0130]), comprising: a plurality of processing modules (Fig. 3, a plurality of vehicle control modules 38, para [0136]) to control a plurality of automated vehicle tasks, functions and/or operations (Fig. 3, vehicle control module 38 further includes an analog to digital converter and/or a digital to analog converter. Such devices may include a sensor, an actuator, an intelligent sensor, an intelligent actuator, an electronic control unit (ECU), and/or a control device, para [0139]), wherein a first processing module is in an active mode whereby the first processing module is in primary control of at least most automated vehicle tasks, functions and/or operations (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]) and a second processing module is in a standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]) whereby the second processing module is ready to assume primary control of the at least most automated vehicle tasks, functions and/or operations (Typically, packets will be processed via the primary link. If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 2, Yousefi further teaches wherein the first and second processing modules are in wireless communication with one another (if the processing module 44 includes more than one processing device, the processing devices may be centrally located (e.g., directly coupled together via a wired and/or wireless bus structure), para [0143]), and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 3, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an engine and/or power control unit (electronic engine control, para [0007]), transmission control unit (TCU) (transmission control, para [0007]), a door setting (door network node module, para [0321]), a window setting (window up/down actuator, para [0455]), a blind spot monitor (a mirror electronic control unit 162, a mirror actuator 164, a mirror sensor 166, para [0156]), an airbag deployment control unit (airbag sensor, airbag actuator, para [0166]), a collision sensor, a nearby object sensing system (collision indication, collision avoidance, para [0166]), a seat belt control unit, a sensor for a seat belt setting (a seat electronic control unit, para [0323]), a power source controller, an energy output sensor (second gauge for battery level, para [0309]), an engine temperature sensor (temperature sensors, para [0304]), oil pressure (oil level, para [0131]), hydraulic pressure, a headlight, an emergency light, a brake light (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a parking light, a fog light, an interior and/or passenger compartment light, a tail light, a vehicle control system sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a wireless network, a cellular data sensor (a cellular telephone interface, para [0160]), a steering sensor, a torque sensor (steering wheel network node module, para [0306]), an engine, power steering, a display panel, switch state control unit, and a brake control unit (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]).

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Box No. V.2. Citations and explanations.

Regarding claim 4, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an emissions system (electronic modules for engine control, transmission control, antilock braking, body control, emissions control, para [0006]), a seating system controller and/or sensor (seat operation, para [0150]), an entertainment system (audio/video playback, para [0150]), monitoring an ambient (outdoor) weather sensor (a climate electronic control unit 174, a climate actuator 176, a climate sensor 178, para [0156]), an odometer reading sensor, a trip mileage reading sensor, a road condition sensor, a radar transmitter/receiver output (radio frequency sensors 800 may be used as a localized radar system for the vehicle, para [0290]), a brake wear sensor, an oxygen sensor, an ambient lighting sensor, a vision system sensor (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a ranging sensor, a parking sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a heating, venting, and air conditioning (HVAC) system and/or sensor, a water sensor, a air-fuel ratio meter (environment control (e.g., air conditioning, heater, fan speed, etc.), para [0308]), a hall effect sensor, a microphone, a radio frequency (RF) sensor, and/or an infrared (IR) sensor (infrared sensors 924, radio frequency sensors 926, and/or touch sensors 928, para [0333]).

Regarding claim 5, Yousefi further teaches wherein the first and second processing modules are duplicated and further comprising an arbitration module to arbitrate hand-off conflicts between the duplicated first and second processing modules (link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 6, Yousefi further teaches wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating at least one of (i) which processing module is an active processing module and/or which processing module is a standby processing module (link manager 440 also indicates which of the links is the primary link and which is the backup link. Typically, packets will be processed via the primary link, para [0193]) and (ii) which processing module is responsible for a selected set of processing tasks, functions, and/or operations associated with the token (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 7, Yousefi further teaches wherein the first and second processing modules are duplicated (redundancy/backup modules 392, para [0175]) and further comprising a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules (manager processing module determines that a communication medium coupling the active network fabric port to a corresponding active network fabric port of the other vehicle network fabric link module is broken (e.g., cable broke, HW failure, SW failure of port), para [0196]) to perform at least one of critical and non-critical tasks, functions, and operations (determining the type of packet (e.g., mission critical, network data, info-entertainment, vehicle operation, etc.). Determining the type of packet can include determining the type of content carried by the packet, i.e. the packet content type. Having identified the packet 418, and the packet content type, the local network management function 401 determines the processing for the packet 418 and then processes the packet 418 accordingly, para [0175]).

Regarding claim 8, Yousefi further teaches wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations (link manager 440, alone or in combination with the processing module 438, monitors the "health" of the transmissions and receptions of packets via the active interconnecting port 444, para [0192]), assign a score to the selected processing module based on the check and/or test results, and/or compare the score to one or more thresholds and/or to a score of a different processing module to determine a relative and/or absolute state of health of the selected processing module (if the data rate of transmissions via the active interconnecting port 444 is lower than a desired threshold due to errors, other factors, or the cable is broken, then the link may be flagged as being in a degenerative state. If the degenerative state compares unfavorably to a threshold, the link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 9, Yousefi further teaches wherein the arbitration module, based on the relative and/or absolute state of health of each of the first and second processing modules selects one of the first and second processing modules as a primary processing module in primary control of the at least most automated vehicle tasks, functions and/or operations (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]) and the other of the first and second processing modules as a secondary processing module in standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]).

Regarding claim 10, Yousefi further teaches wherein a hand-off procedure is activated whereby primary control is passed from the first processing module to the secondary processing module and the first processing module enters the standby mode (determining whether hot standby 454 (e.g., another use mode in which a backup link is used to convey the same packets as the active link) is active. If hot standby is not active, the processing module and/or link manager activates another port and retransmits any packets that may have been lost due to the link failure 456, para [0200]).

Regarding claim 11, Yousefi further teaches wherein the relative weighting of at least some tasks, functions and/or operations in assigning the score is a function of geographic location of the vehicle (retransmit the packet or request retransmission packet by the other vehicle network fabric link module based on a sliding scale of content type and traffic conditions (e.g., retransmit everything but entertainment under normal traffic conditions, only mission critical packets when network is very busy, etc.), para [0202]).

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Box No. V.2. Citations and explanations.

Regarding claim 12, Yousefi further teaches wherein, for a first set of tasks, functions, and/or operations, the first processing module is in primary control and the second processing module is in standby mode and, for a different second set of tasks, functions, and/or operations, the second processing module is in primary control and the first processing module is in standby mode (If hot standby is active for the link aggregation, the method continues by using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0203]).

Regarding claim 13, Yousefi further teaches wherein, in the standby mode, the second processing module at least one of (a) performs shadow processing of the at least most automated vehicle tasks, functions and/or operations (using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0230]) and (b) synchronizes stored time stamped processing state information with time-stamped processing state information regarding the at least most automated vehicle tasks, functions and/or operations (packet 704 and packet queues within a vehicle communication network. The packet 704 includes the preamble 706, start of frame 708, timestamp 710, packet type 712, para [0257]).

Regarding claim 14, Yousefi teaches a non-transient, tangible computer readable medium comprising microprocessor executable instructions that, when executed (processors executing appropriate software and the like, para [0630]), designate (a plurality of vehicle control modules 38, para [0136]) a first processing module as being in an active mode (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]) whereby the first processing module is in primary control of at least most automated vehicle tasks, functions and/or operations (Fig. 3, vehicle control module 38 further includes an analog to digital converter and/or a digital to analog converter. Such devices may include a sensor, an actuator, an intelligent sensor, an intelligent actuator, an electronic control unit (ECU), and/or a control device, para [0139]) and a second processing module as being in a standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]) whereby the second processing module is ready to assume primary control of the at least most automated vehicle tasks, functions and/or operations (Typically, packets will be processed via the primary link. If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 15, Yousefi further teaches wherein the first and second processing modules are in wireless communication with one another (if the processing module 44 includes more than one processing device, the processing devices may be centrally located (e.g., directly coupled together via a wired and/or wireless bus structure), para [0143]), and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 16, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an engine and/or power control unit (electronic engine control, para [0007]), transmission control unit (TCU) (transmission control, para [0007]), a door setting (door network node module, para [0321]), a window setting (window up/down actuator, para [0455]), a blind spot monitor (a mirror electronic control unit 162, a mirror actuator 164, a mirror sensor 166, para [0156]), an airbag deployment control unit (airbag sensor, airbag actuator, para [0166]), a collision sensor, a nearby object sensing system (collision indication, collision avoidance, para [0166]), a seat belt control unit, a sensor for a seat belt setting (a seat electronic control unit, para [0323]), a power source controller, an energy output sensor (second gauge for battery level, para [0309]), an engine temperature sensor (temperature sensors, para [0304]), oil pressure (oil level, para [0131]), hydraulic pressure, a headlight, an emergency light, a brake light (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a parking light, a fog light, an interior and/or passenger compartment light, a tail light, a vehicle control system sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a wireless network, a cellular data sensor (a cellular telephone interface, para [0160]), a steering sensor, a torque sensor (steering wheel network node module, para [0306]), an engine, power steering, a display panel, switch state control unit, and a brake control unit (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]).

Regarding claim 17, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an emissions system (electronic modules for engine control, transmission control, antilock braking, body control, emissions control, para [0006]), a seating system controller and/or sensor (seat operation, para [0150]), an entertainment system (audio/video playback, para [0150]), monitoring an ambient (outdoor) weather sensor (a climate electronic control unit 174, a climate actuator 176, a climate sensor 178, para [0156]), an odometer reading sensor, a trip mileage reading sensor, a road condition sensor, a radar transmitter/receiver output (radio frequency sensors 800 may be used as a localized radar system for the vehicle, para [0290]), a brake wear sensor, an oxygen sensor, an ambient lighting sensor, a vision system sensor (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a ranging sensor, a parking sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a heating, venting, and air conditioning (HVAC) system and/or sensor, a water sensor, a air-fuel ratio meter (environment control (e.g., air conditioning, heater, fan speed, etc.), para [0308]), a hall effect sensor, a microphone, a radio frequency (RF) sensor, and/or an infrared (IR) sensor (infrared sensors 924, radio frequency sensors 926, and/or touch sensors 928, para [0333]).

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Box No. V.2. Citations and explanations.

Regarding claim 18, Yousefi further teaches wherein the first and second processing modules are duplicated and further comprising an arbitration module to arbitrate hand-off conflicts between the duplicated first and second processing modules (link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 19, Yousefi further teaches wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating at least one of (i) which processing module is an active processing module and/or which processing module is a standby processing module (link manager 440 also indicates which of the links is the primary link and which is the backup link. Typically, packets will be processed via the primary link, para [0193]) and (ii) which processing module is responsible for a selected set of processing tasks, functions, and/or operations associated with the token (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 20, Yousefi further teaches wherein the first and second processing modules are duplicated (redundancy/backup modules 392, para [0175]) and further comprising a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules (manager processing module determines that a communication medium coupling the active network fabric port to a corresponding active network fabric port of the other vehicle network fabric link module is broken (e.g., cable broke, HW failure, SW failure of port), para [0196]) to perform at least one of critical and non-critical tasks, functions, and/or operations (determining the type of packet (e.g., mission critical, network data, info-entertainment, vehicle operation, etc.). Determining the type of packet can include determining the type of content carried by the packet, i.e. the packet content type. Having identified the packet 418, and the packet content type, the local network management function 401 determines the processing for the packet 418 and then processes the packet 418 accordingly, para [0175]).

Regarding claim 21, Yousefi further teaches wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations (link manager 440, alone or in combination with the processing module 438, monitors the "health" of the transmissions and receptions of packets via the active interconnecting port 444, para [0192]), assign a score to the selected processing module based on the check and/or test results, and/or compare the score to one or more thresholds and/or to a score of a different processing module to determine a relative and/or absolute state of health of the selected processing module (if the data rate of transmissions via the active interconnecting port 444 is lower than a desired threshold due to errors, other factors, or the cable is broken, then the link may be flagged as being in a degenerative state. If the degenerative state compares unfavorably to a threshold, the link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 22, Yousefi further teaches wherein the arbitration module, based on the relative and/or absolute state of health of each of the first and second processing modules selects one of the first and second processing modules as a primary processing module in primary control of the at least most automated vehicle tasks, functions and/or operations (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]) and the other of the first and second processing modules as a secondary processing module in standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]).

Regarding claim 23, Yousefi further teaches wherein a hand-off procedure is activated whereby primary control is passed from the first processing module to the secondary processing module and the first processing module enters the standby mode (determining whether hot standby 454 (e.g., another use mode in which a backup link is used to convey the same packets as the active link) is active. If hot standby is not active, the processing module and/or link manager activates another port and retransmits any packets that may have been lost due to the link failure 456, para [0200]).

Regarding claim 24, Yousefi further teaches wherein the relative weighting of at least some tasks, functions and/or operations in assigning the score is a function of geographic location of the vehicle (retransmit the packet or request retransmission packet by the other vehicle network fabric link module based on a sliding scale of content type and traffic conditions (e.g., retransmit everything but entertainment under normal traffic conditions, only mission critical packets when network is very busy, etc.), para [0202]).

Regarding claim 25, Yousefi further teaches wherein, for a first set of tasks, functions, and/or operations, the first processing module is in primary control and the second processing module is in standby mode and, for a different second set of tasks, functions, and/or operations, the second processing module is in primary control and the first processing module is in standby mode (If hot standby is active for the link aggregation, the method continues by using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0203]).

Regarding claim 26, Yousefi further teaches wherein, in the standby mode, the second processing module at least one of (a) performs shadow processing of the at least most automated vehicle tasks, functions and/or operations (using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0230]) and (b) synchronizes stored time-stamped processing state information with time-stamped processing state information regarding the at least most automated vehicle tasks, functions and/or operations (packet 704 and packet queues within a vehicle communication network. The packet 704 includes the preamble 706, start of frame 708, timestamp 710, packet type 712, para [0257]).

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Box No. V.2. Citations and explanations.

Regarding claim 27, Yousefi teaches a method (a vehicular communication network that includes a unified network fabric 32 (e.g., Ethernet-based), one or more communication links 34, para [0136]) comprising: designating, by a microprocessor executable arbitration module processors executing appropriate software and the like, para [0630]), a first processing module as being in an active mode (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]), whereby the first processing module is in primary control of at least most automated vehicle tasks, functions and/or operations (Fig. 3, vehicle control module 38 further includes an analog to digital converter and/or a digital to analog converter. Such devices may include a sensor, an actuator, an intelligent sensor, an intelligent actuator, an electronic control unit (ECU), and/or a control device, para [0139]), and a second processing module as being in a standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]), whereby the second processing module is ready to assume primary control of the at least most automated vehicle tasks, functions and/or operations (Typically, packets will be processed via the primary link. If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 28, Yousefi further teaches wherein the first and second processing modules are in wireless communication with one another (if the processing module 44 includes more than one processing device, the processing devices may be centrally located (e.g., directly coupled together via a wired and/or wireless bus structure), para [0143]), and further comprising: maintaining a state of the second processing module substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

Regarding claim 29, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an engine and/or power control unit (electronic engine control, para [0007]), transmission control unit (TCU) (transmission control, para [0007]), a door setting (door network node module, para [0321]), a window setting (window up/down actuator, para [0455]), a blind spot monitor (a mirror electronic control unit 162, a mirror actuator 164, a mirror sensor 166, para [0156]), an airbag deployment control unit (airbag sensor, airbag actuator, para [0166]), a collision sensor, a nearby object sensing system (collision indication, collision avoidance, para [0166]), a seat belt control unit, a sensor for a seat belt setting (a seat electronic control unit, para [0323]), a power source controller, an energy output sensor (second gauge for battery level, para [0309]), an engine temperature sensor (temperature sensors, para [0304]), oil pressure (oil level, para [0131]), hydraulic pressure, a headlight, an emergency light, a brake light (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a parking light, a fog light, an interior and/or passenger compartment light, a tail light, a vehicle control system sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a wireless network, a cellular data sensor (a cellular telephone interface, para [0160]), a steering sensor, a torque sensor (steering wheel network node module, para [0306]), an engine, power steering, a display panel, switch state control unit, and a brake control unit (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]).

Regarding claim 30, Yousefi further teaches wherein the plurality of automated vehicle tasks, functions and/or operations comprise monitoring, controlling and/or operating a plurality of the following: an emissions system (electronic modules for engine control, transmission control, antilock braking, body control, emissions control, para [0006]), a seating system controller and/or sensor (seat operation, para [0150]), an entertainment system (audio/video playback, para [0150]), monitoring an ambient (outdoor) weather sensor (a climate electronic control unit 174, a climate actuator 176, a climate sensor 178, para [0156]), an odometer reading sensor, a trip mileage reading sensor, a road condition sensor, a radar transmitter/receiver output (radio frequency sensors 800 may be used as a localized radar system for the vehicle, para [0290]), a brake wear sensor, an oxygen sensor, an ambient lighting sensor, a vision system sensor (a communication includes the vehicle 10 transmitting data regarding its operational status (e.g., number of hours since last engine tune-up, wear & tear on the break system, brake fluid level, oil level, transmission fluid level, etc.). The automobile service provider 22 interprets the operational status data to determine if the vehicle 10 is in need of service and/or if a component failure is likely to occur in the near future, para [0131]), a ranging sensor, a parking sensor (general safety issues (e.g., turn signal, brake lights, etc.), para [0158]), a heating, venting, and air conditioning (HVAC) system and/or sensor, a water sensor, a air-fuel ratio meter (environment control (e.g., air conditioning, heater, fan speed, etc.), para [0308]), a hall effect sensor, a microphone, a radio frequency (RF) sensor, and/or an infrared (IR) sensor (infrared sensors 924, radio frequency sensors 926, and/or touch sensors 928, para [0333]).

Regarding claim 31, Yousefi further teaches wherein the first and second processing modules are duplicated and further comprising a microprocessor executable arbitration module to arbitrate hand-off conflicts between the duplicated first and second processing modules (link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 32, Yousefi further teaches wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating at least one of (i) which processing module is an active processing module and/or which processing module is a standby processing module (link manager 440 also indicates which of the links is the primary link and which is the backup link. Typically, packets will be processed via the primary link, para [0193]) and (ii) which processing module is responsible for a selected set of processing tasks, functions, and/or operations associated with the token (link manager 440 also determines a use mode such as backup transmissions and/or backup receptions of packets, para [0193]; If, however, the primary link has a failure (e.g., an unacceptable degenerative state or is broken), the packet can be processed from the backup link without loss of data, para [0193]).

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Regarding claim 33, Yousefi further teaches wherein the first and second processing modules are duplicated (redundancy/backup modules 392, para [0175]) and further comprising a microprocessor executable health check module to determine a corresponding state of health of each of the duplicated first and second processing modules (manager processing module determines that a communication medium coupling the active network fabric port to a corresponding active network fabric port of the other vehicle network fabric link module is broken (e.g., cable broke, HW failure, SW failure of port), para [0196]) to perform at least one of critical and non-critical tasks, functions, and operations (determining the type of packet (e.g., mission critical, network data, info-entertainment, vehicle operation, etc.). Determining the type of packet can include determining the type of content carried by the packet, i.e. the packet content type. Having identified the packet 418, and the packet content type, the local network management function 401 determines the processing for the packet 418 and then processes the packet 418 accordingly, para [0175]).

Regarding claim 34, Yousefi further teaches wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations (link manager 440, alone or in combination with the processing module 438, monitors the "health" of the transmissions and receptions of packets via the active interconnecting port 444, para [0192]), assign a score to the selected processing module based on the check and/or test results, and/or compare the score to one or more thresholds and/or to a score of a different processing module to determine a relative and/or absolute state of health of the selected processing module (if the data rate of transmissions via the active interconnecting port 444 is lower than a desired threshold due to errors, other factors, or the cable is broken, then the link may be flagged as being in a degenerative state. If the degenerative state compares unfavorably to a threshold, the link manager 440 may deactivate the current active interconnecting port and activate another interconnecting port 444, para [0192]).

Regarding claim 35, Yousefi further teaches wherein the arbitration module, based on the relative and/or absolute state of health of each of the first and second processing modules selects one of the first and second processing modules as a primary processing module in primary control of the at least most automated vehicle tasks, functions and/or operations (Fig. 17, link manager 440 also indicates which of the links is the primary link and which is the backup link, para [0193]) and the other of the first and second processing modules as a secondary processing module in standby mode (Fig. 14, 17, redundancy-backup modules 392, para [0181]).

Regarding claim 36, Yousefi further teaches wherein a hand-off procedure is activated whereby primary control is passed from the first processing module to the secondary processing module and the first processing module enters the standby mode (determining whether hot standby 454 (e.g., another use mode in which a backup link is used to convey the same packets as the active link) is active. If hot standby is not active, the processing module and/or link manager activates another port and retransmits any packets that may have been lost due to the link failure 456, para [0200]).

Regarding claim 37, Yousefi further teaches wherein the relative weighting of at least some tasks, functions and/or operations in assigning the score is a function of geographic location of the vehicle (retransmit the packet or request retransmission packet by the other vehicle network fabric link module based on a sliding scale of content type and traffic conditions (e.g., retransmit everything but entertainment under normal traffic conditions, only mission critical packets when network is very busy, etc.), para [0202]).

Regarding claim 38, Yousefi further teaches wherein, for a first set of tasks, functions, and/or operations, the first processing module is in primary control and the second processing module is in standby mode and, for a different second set of tasks, functions, and/or operations, the second processing module is in primary control and the first processing module is in standby mode (If hot standby is active for the link aggregation, the method continues by using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0203]).

Regarding claim 39, Yousefi further teaches wherein, in the standby mode, the second processing module at least one of (a) performs shadow processing of the at least most automated vehicle tasks, functions and/or operations (using the replicated transmission for the failed cable 466 (i.e., the backup transmission on the hot standby link). The method continues by setting up a new hot standby for a newly activated link 468, para [0230]) and (b) synchronizes stored timestamped processing state information with time-stamped processing state information regarding the at least most automated vehicle tasks, functions and/or operations (packet 704 and packet queues within a vehicle communication network. The packet 704 includes the preamble 706, start of frame 708, timestamp 710, packet type 712, para [0257]).

Claims 1-39 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

Electronic Acknowledgement Receipt

EFS ID:	20460160
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	20-OCT-2014
Filing Date:	16-NOV-2012
Time Stamp:	14:29:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-247_IDS_03.pdf	323951 3eae93c50becf5331201f194a59b2db04ba493ba	yes	7

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	7	
Warnings:					
Information:					
2	Non Patent Literature	A8_Technology_as_standard.pdf	98967 53a8b41db45ed2ae5b060182792d6961e7f2da1c	no	1
Warnings:					
Information:					
3	Non Patent Literature	Audi_A8_MMI_Touch.pdf	516587 1f17a58db7a87e9f856f17dfeb2a6b8c697f123b	no	2
Warnings:					
Information:					
4	Non Patent Literature	DIAZ_Audi_New_MMI_Touch.pdf	1393865 9751ac4ec09e03bdd5738fbbafd7dcc0baccc809	no	12
Warnings:					
Information:					
5	Non Patent Literature	6583-244-PCT_IPRP_05-30-2014.pdf	1060557 10431985e4996a60df37b8868ea827038ded4521	no	14
Warnings:					
Information:					
6	Non Patent Literature	6583-247-PCT_IPRP_05-30-2014.pdf	437375 92b75f301ab647d63599dd20d6a3684deb10c1bd	no	8
Warnings:					
Information:					
7	Non Patent Literature	6583-247-CIP-PCT_ISR-WO_08-18-2014.pdf	1000794 4692d14fdad0a2cf30c001289e76027da04b58db	no	10
Warnings:					
Information:					
8	Non Patent Literature	6583-247-CIP-6-PCT_ISR-WO_07-25-2014.pdf	782570 cdec0f41192af33e03197b2a851c1f04a28ee16b	no	8
Warnings:					
Information:					

9	Non Patent Literature	6583-247-CIP-13-PCT_ISR-WO_04-25-2014.pdf	2160745 a4621b947cd26fa93ad2c8e7bc54fec7c900e306	no	8
Warnings:					
Information:					
10	Non Patent Literature	6583-247-CIP-15-PCT_ISR-WO_07-29-2014.pdf	1686355 04b68e1192d8dbe3091df153783ff626875c549d	no	11
Warnings:					
Information:					
11	Non Patent Literature	6583-231_OA_06-27-2014.pdf	165148 fda14dd805bd03abfaf49c60c71f527e715821b8	no	5
Warnings:					
Information:					
12	Non Patent Literature	6583-232_OA_09-26-2014.pdf	231935 8271af3f8a4f6909a272cbdbb7e3b4940730bf10	no	7
Warnings:					
Information:					
13	Non Patent Literature	6583-233_OA_04-07-2014.pdf	217765 3e4747e81748f35c630143ec9a7a9cc6ac4015d4	no	7
Warnings:					
Information:					
14	Non Patent Literature	6583-233_OA_07-17-2014.pdf	414632 6e0c5c666bad11eef8feb685b35c3a333eb37273	no	13
Warnings:					
Information:					
15	Non Patent Literature	6583-244_OA_05-09-2014.pdf	205767 61a57b32f680bc04eb637a25e3dfeedaf16ba3e4	no	6
Warnings:					
Information:					
16	Non Patent Literature	6583-244_NOA_07-22-2014.pdf	352604 ca6eed24933e209f1404f0c852a038f2673837f0	no	5
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Information:					
17	Non Patent Literature	6583-247-CIP_OA_05-06-2014.pdf	245776 34340402da668508bd67c960f65eb23094edf97c	no	7
Warnings:					
Information:					

18	Non Patent Literature	6583-247-CIP_OA_09-04-2014.pdf	185220 78f7b2390e812dfcfa6ff075e4e8d2df6fa62f25	no	5
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Information:					
19	Non Patent Literature	6583-247-CIP-2_OA_07-29-2014.pdf	595864 1b27d7e601bcb5cb0111cab67853a63901d3a792	no	17
Warnings:					
Information:					
20	Non Patent Literature	6583-247-CIP-7_NOA_07-25-2014.pdf	623725 816bd4d0391610e29db027812cf176ef310a76b1	no	14
Warnings:					
Information:					
21	Non Patent Literature	6583-247-CIP-8_OA_07-23-2014.pdf	228939 301d06cff02846d3e9b86414c12973de7c86ba73	no	7
Warnings:					
Information:					
22	Non Patent Literature	6583-247-CIP-10_OA_04-10-2014.pdf	259905 de74d57c254436da0e40994a0a37882b475f778a	no	7
Warnings:					
Information:					
23	Non Patent Literature	6583-247-CIP-10_OA_07-25-2014.pdf	290071 44b8cb92011f5b2185328bbb4e00d1b1bb66960a	no	8
Warnings:					
Information:					
24	Non Patent Literature	6583-247-CIP-13_OA_04-15-2014.pdf	295098 a83e64e1a87ec0af433b88e393219cc5d7b4ae30	no	9
Warnings:					
Information:					
25	Non Patent Literature	6583-247-CIP-13_OA_07-25-2014.pdf	317647 8e4494b52ad0945e3b00ca3de68356c65460beec	no	9
Warnings:					
Information:					
26	Non Patent Literature	6583-247-CIP-15_OA_07-10-2014.pdf	314828 33cdca8ca2b9bf854acd6159bccf97f9aca49a28	no	9
Warnings:					
Information:					

27	Non Patent Literature	6583-315_NOA_04-02-2014.pdf	348373 9bb71d1ad2c1d3d783625fe376fa37e238330886	no	5
Warnings:					
Information:					
28	Non Patent Literature	6583-316_OA_06-30-2014.pdf	186123 92f527809a834accc6bb928aa7d655c18496c70f	no	6
Warnings:					
Information:					
			Total Files Size (in bytes):	14941186	

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-247	)	
Entitled: "Vehicle Middleware"	)	*Electronically Submitted*

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

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☒ Examiner's attention is drawn to the following related applications:

- Serial No. 14/485,467 filed 09/12/2014 (Attorney's Ref. No. 6583-247-CIP-7-CON)
- Serial No. 14/468,055 filed 08/25/2014 (Attorney's Ref. No. 6583-315-CON)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence

of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☒ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: October 20, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

111285 7590 01/16/2015

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER
WILLIAMS, JEFFERY L

ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
01/16/2015	ELECTRONIC

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

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

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

flexpatents@sheridanross.com
edocket@sheridanross.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *02 July 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Yakes*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner and applicant's representative discussed amendments to overcome the rejections under 35 USC 112. No agreement was reached regarding the patentability of the claims over the prior art.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Office Action Summary	Application No. 13/679,476	Applicant(s) RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2495	AIA (First Inventor to File) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *10/20/14*.

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

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

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

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

Disposition of Claims

5)☒ Claim(s) *1 – 6, 8 – 18, and 21 – 23* is/are pending in the application.

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

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1 – 6, 8 – 18, and 21 – 23* is/are rejected.

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

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

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

Application Papers

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

11)☒ The drawing(s) filed on *11/16/12* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

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

Attachment(s)

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

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/20/14*.

3) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *7/2/14* .

4) ☐ Other: _____.

DETAILED ACTION

This action is in response to the communication filed on 7/31/14.

All objections and rejections not set forth below have been withdrawn.

Claims 1 – 6, 8 – 18, and 21 – 23 are pending.

Any references to applicant's specification are made by way of applicant's U.S. pre-grant printed patent publication.

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

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/31/14 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Specifically, claim 15 is indefinite in scope because the terms "station" and “movement” appear ambiguous within the context of the claim and the terms "authorized" and "unauthorized" appear to be arbitrary and relative without a clear standard for interpretation. The examiner points out that it is unclear as to what kind of "station" the claims are referencing. A "station” could represent physical devices such as workstations and base stations or logical locations/signals such as listening/viewing stations/channels. Furthermore, different interpretations of "station” would require different interpretations of “movement” and how such movement is “detected”. For example, movement from station to station could represent physical displacement or could represent a logical channel switching or selection. Finally, the claims are unclear as any reference point for characterizing a station as "authorized" and "unauthorized". The examiner points out that the applicant's disclosure fails to provide any clear basis for interpreting the claim language.

Claim Rejections - 35 USC § 103

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

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

Claims 1 – 5, 8 – 14, and 18 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes et al. (Yakes), US 2003/0158638 A1.

Regarding claim 1, as best understood in light of the above rejections, Yakes discloses:

a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a means, comprising a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules.

Yakes does not explicitly state that *the selected computational module being the most current version or release of the selected computational module*.

However, Yakes teaches that the system components of the vehicle should be updated and upgraded when new ones become available (e.g. Yakes, par. 5, 400).

Thus, the examiner points out that it would have been obvious to one of ordinary skill in the art, in view of the teachings of Yakes in combination with logic and common sense, to realize that updated or "the current" versions of components should be used within the system.

Furthermore, Yakes discloses:

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol (e.g. Yakes, fig. 2:16 – control program; par. 102, 103). Herein, Yates discloses a stored software program, i.e. "network selector module", that enables the CPU to select and properly communicate between different communication networks based upon protocol (e.g. "type of signal").

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 2, Yakes discloses:

a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle

functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (e.g. Yakes, fig. 2:14; par. 184, 185). Herein, the CPU may execute at least one module (i.e. primary control). Furthermore, information transfer for at least some of the modules is accomplished wirelessly.

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 3, Yakes discloses:

wherein the vehicle comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module (e.g. Yakes, fig. 2:14, 16 - CPU). CPU's arbitrate the execution of tasks such as by semaphore.

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 4, Yakes discloses:

wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module (e.g. Yakes, par. 336).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 5, Yakes discloses:

wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the and wherein

the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system (e.g. Yakes, par. 357).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 8, Yakes discloses:

and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service (e.g. Yakes, par. 91).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 9, Yakes discloses:

and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator (e.g. Yakes, par. 281).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 10, Yakes discloses:

and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems (e.g. Yakes, par. 184).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 11, Yakes discloses:

and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module (e.g. Yakes, fig. 2).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 12, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (e.g. Yakes, fig. 2; par. 297).

Regarding claim 13, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application (e.g. Yakes, fig. 2; par. 5, 400). The software modules comprise different types of functions and times of release (i.e. different versions).

Regarding claim 14, Yakes discloses:

wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 19; par. 277, 403, 404). The system comprises software

means for detecting failures and isolating processing modules by turning off inputs and outputs and replicating the failed modules elsewhere within the system.

Regarding claim 18, Yakes discloses:

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 34, 35; par. 185).

Claims 6, 16, and 21 – 23 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes in view of Yousefi et al. (Yousefi), US 2012/0110356 A1.

Regarding claim 6, Yakes discloses a vehicle software system for monitoring a vehicle and receiving media signals from outside sources. However, Yakes does not appear to disclose a media filter module.

Yousefi also discloses a vehicle software system for monitoring a vehicle and for receiving media signals. Furthermore Yousefi discloses:

a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal,

state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein each of the afore-mentioned modules are stored in a non- transient, tangible computer readable memory (e.g. Yousefi, fig. 107:1752; par. 572, 576, 577).

It would have been obvious to one of skill in the art to employ the media filter teachings of Yousefi within the vehicle software system of Yakes. This would have been obvious because one of ordinary skill in the art would have been motivated by the advantages of flexibility in considering the preferences or requirements of the vehicle and/or vehicle occupants when receiving media.

Regarding claim 21, it is rejected, at least, for the same reasons noted above, and furthermore because Yakes discloses:

a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a means, comprising a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules.

wherein the vehicle further comprises a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of

network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service; wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 2:16 – control program; par. 102, 103). Herein, Yates discloses a stored software program, i.e. "network selector module", that enables the CPU to select between different communication networks based upon protocol (e.g. "type of signal").

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information (e.g. Yakes, fig. 34; par. 179, 185, 205). Herein, Yates discloses a stored software element, i.e. "social networking module", which enables the vehicle modules to exchange, over a wireless network, information with other vehicle modules.

Yakes discloses a system of software modules for monitoring a vehicle, such as by video from a camera (e.g. Yakes, par. 180, 184). However, Yakes does not appear to disclose caching streaming media within the system.

Yousefi also discloses a system for monitoring a vehicle using video from a camera. Furthermore Yousefi discloses:

wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation … (e.g. Yousefi, fig. 60, 61; par. 155, 320, 342 - 345). Herein, Yousefi discloses that automatically steaming media, such as camera footage, may be cached in the event of a change in vehicle state or operation.

and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state (e.g. Yousefi, fig. 60, 61; par. 346, 347). Herein, Yousefi discloses that automatically steaming media, such as camera footage, may be cached in the event a parked vehicle becomes unsettled or otherwise involved within a collision (i.e. unparked). Furthermore, the examiner notes that while Yousefi does not explicitly state that a collision results in movement or motion, one of ordinary skill will logically recognize in light of physical principle that a collision may result in motion of the parked vehicle.

It would have been obvious to one of ordinary skill in the art to employ the teachings of media recording methods of Yousefi within the system of Yakes. This would have been obvious because one of ordinary skill in the art would have been motivated by the advantages of security and evidence gathering.

wherein each of the computational module selector, computation modules, network controller module, social networking module and the network selector module are stored in non-transient, tangible computer readable memory (e.g. Yakes, par. 419, 420).

Regarding claim 23, the examiner notes that the applicant's recitations of a "selector module", "network controller module" and "social networking module" invoke the 35 USC 112, 6th paragraph because the terms do not apply to any specific structure and the applicant does further define their structure within the claim by the recitation of

"implemented substantially in software". However, for the applicant's benefit, the examiner notes that if the applicant had intended for the claim language to be interpreted as reciting software modules, and not according to any specific means disclosed within the applicant's specification, then the examiner finds claim 23 to be rejected, at least, for the same reasons as claim 21.

Yakes discloses a system of software modules for monitoring a vehicle, such as by video from a camera (e.g. Yakes, par. 180, 184). However, Yakes fails to disclose software that checks for available processing power among computation modules and external devices and offloads tasks, operations, and/or functions.

Yousefi also discloses a system for monitoring a vehicle using video from a camera. Furthermore Yousefi discloses software that checks for available processing power among computation modules and external devices and offloads tasks, operations, and/or functions (e.g. Yousefi, fig. 20, fig. 21; par. 208, 209, 610 – 613).

It would have been obvious to one of ordinary skill in the art to incorporate the load balancing teachings of Yousefi within the system of Yates because one of skill would have been motivated by the advantages of increased processing flexibility.

Regarding claims 16 and 22, they comprises essentially similar recitations as found within claims 6, 21 and 23, and they are rejected, at least, for the same reasons.

Claim 17 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes in view of Breed et al. (Breed), US 2007/0156317 A1.

Regarding claim 17, Yakes discloses a vehicle software system for monitoring a vehicle. However, Yakes does not appear to disclose a presence reporting module to determine the presence or lack of presence of operators and occupants within the vehicle while the vehicle is in motion.

Breed also discloses a vehicle software system for monitoring a vehicle. Furthermore Breed discloses a presence reporting module that utilizes a selected communication channel to determine the presence or lack of presence of operators and occupants within the vehicle while the vehicle is in motion (e.g. Breed, fig. 1 – 4; par. 99, 145, 212).

It would have been obvious to one of skill in the art to employ the presence reporting teachings of Breed within the system of Yakes. This would have been obvious because one of skill in the art would have been motivated by the advantages of vehicle and occupant safety.

Response to Arguments

Applicant's arguments filed 7/31/14 have been fully considered but they are not persuasive.

Applicant argues or alleges essentially that:

…

For example, Yakes requires two on more communication networks, e.g. "each of the communication networks 1661-1663 may be formed of two or more communication networks to provide redundancy within each control system." See [0236]. In contrast, amended Claim 1 requires a "network selector module to select one of plural communication networks." …

…

(Remarks, pg. 10 – 12)

Examiner respectfully responds:

The examiner respectfully disagrees. Specifically, applicant's remarks are unpersuasive, at least, for the reason that Yakes discloses that each network **may** be formed of two or more networks, however, such is clearly not a requirement.

Applicant argues or alleges essentially that:

…

The dependent claims provide further reasons for allowance. For example, each a Claims 16 and 22 require "wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device." In

contrast, primary reference Yakes assigns computational resources based on vehicle operating mode …

…

(Remarks, pg. 12, 13)

Examiner respectfully responds:

The examiner respectfully disagrees. Specifically, applicant's remarks are unpersuasive, at least, for the reason that the claimed features have been rejected in view of the teachings of Yousefi.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

See Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)272-7965. The examiner can normally be reached on 9:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Farid Homayounmerhr can be reached on 571-272-3739. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFERY WILLIAMS/
Primary Examiner, Art Unit 2495

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *02 July 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Yakes*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner and applicant's representative discussed amendments to overcome the rejections under 35 USC 112. No agreement was reached regarding the patentability of the claims over the prior art.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Notice of References Cited	Application/Control No. 13/679,476	Applicant(s)/Patent Under Reexamination RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2495	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2007/0156317 A1	07-2007	Breed, David S.	701/045
*	B	US-2007/0103328 A1	05-2007	Lakshmanan et al.	340/686.6
*	C	US-6,302,438 B1	10-2001	Stopper et al.	280/735
*	D	US-7,019,641 B1	03-2006	Lakshmanan et al.	340/538
*	E	US-2010/0042498 A1	02-2010	Schalk, Thomas Barton	705/14.52
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	W	
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
(Use as many sheets as necessary)				First Named Inventor	Christopher Ricci
				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	1	of	4	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5363306	11/08/1994	Kuwahara et al.	
	2	5508689	04/16/1996	Rado et al.	
	3	5648769	07/15/1997	Sato et al.	
	4	5710702	01/20/1998	Hayashi et al.	
	5	5838251	11/17/1998	Brinkmeyer et al.	
	6	5890080	03/30/1999	Coverdill et al.	
	7	6678747	01/13/2004	Goossen et al.	
	8	7493140	02/17/2009	Michmerhuizen et al.	
	9	7643913	01/05/2010	Taki et al.	
	10	7899610	03/01/2011	McClellan	
	11	8346432	01/01/2013	Van Wiemeersch et al.	
	12	8432260	04/30/2013	Talty et al.	
	13	8532574	09/10/2013	Kirsch	
	14	8725311	05/13/2014	Breed	
	15	2002/0105968	08/08/2002	Pruzan et al.	
	16	2003/0007227	01/09/2003	Ogino	
	17	2005/0031100	02/10/2005	Iggulden et al.	
	18	2007/0057781	03/15/2007	Breed	
	19	2008/0090522	04/17/2008	Oyama	
	20	2008/0129475	06/05/2008	Breed et al.	
	21	2008/0234919	09/25/2008	Ritter et al.	
	22	2009/0275321	11/05/2009	Crow	
	23	2009/0278806	11/12/2009	Duarte et al.	
	24	2009/0279839	11/12/2009	Nakamura et al.	
	25	2010/0202346	08/12/2010	Sitzes et al.	
	26	2010/0235042	09/16/2010	Ying	
	27	2010/0253493	10/07/2010	Szczerba et al.	
	28	2011/0195699	08/11/2011	Tadayon et al.	
	29	2012/0006610	01/12/2012	Wallace et al.	
	30	2012/0089299	04/12/2012	Breed	
	31	2012/0116609	05/10/2012	Jung et al.	
	32	2012/0084792	04/05/2012	Benedek et al.	

Examiner Signature	/Jeffery Williams/	Date Considered	01/11/2015

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

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				Examiner Name	Jeffery Williams
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	33	2012/0084735	04/05/2012	Sirpal	
	34	2012/0109446	05/03/2012	Yousefi et al.	
	35	2012/0115446	05/10/2012	Guatama et al.	
	36	2012/0238286	09/20/2012	Mallavarapu et al.	
	37	2012/0242510	09/27/2012	Choi et al.	
	38	2012/0296567	11/22/2012	Breed	
	39	2012/0313771	12/13/2012	Wottlifff, III	
	40	2013/0099940	04/25/2013	Protopapas	
	41	2013/0179689	07/11/2013	Matsumoto et al.	
	42	2013/0190978	07/25/2013	Kato et al.	
	43	2013/0288606	10/31/2013	Kirsch	
	44	2013/0295901	11/07/2013	Abramson et al.	
	45	2013/0309977	11/21/2013	Heines et al.	
	46	2014/0066014	03/06/2014	Nicholson et al.	
	47	2014/0088798	03/27/2014	Himmelstein	
	48	2014/0120829	05/01/2014	Bhamidipati et al.	

UNPUBLISHED U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	49	14/468055	08/25/2014	Ricci	
	50	14/485467	09/12/2014	Ricci	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	51	"A8: Technology as standard," Screen-shots from Audi.co.uk, 2014 [retrieved on 4/16/2014], 1 page. Retrieved from: www.audi.co.uk/new-cars/a8/a8/technology-as-standard/mmi-touch.html

Examiner Signature	/Jeffery Williams/	Date Considered	01/11/2015

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(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	3	of	4	Attorney Docket Number	6583-247

	52	"Audi A8 MMI Touch," Audi of America, Jan. 7, 2011, [retrieved on 4/16/2014], 2 pages. Retrieved from: www.youtube.com/watch?v=O2nZ-WHo9IA
	53	DIAZ, "Audi New MMI Touch Input System Makes Perfect Sense," Gizmodo.com, Dec. 1, 2009 [retrieved on 4/16/2014], 12 pages. Retrieved from: http://gizmodo.com/5416342/audi-new-mmi-touch-input-system-makes-perfect-sense
	54	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2012/065510, mailed May 30, 2014 (Attorney's Ref. No. 6583-244-PCT) 14 pages
	55	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2012/065613, mailed May 30, 2014 (Attorney's Ref. No. 6583-247-PCT) 8 pages
	56	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US2014/019983, mailed Aug. 18, 2014 (Attorney's Ref. No. 6583-247-CIP-PCT) 10 pages
	57	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19216, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-6-PCT) 8 pages
	58	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19209, mailed Apr. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-13-PCT)
	59	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US14/19201, mailed Jul. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-15-PCT) 11 pages
	60	Official Action for U.S. Patent Application No. 13/679,857, mailed Jun. 27, 2014 (Attorney's Ref. No. 6583-231) 5 pages
	61	Official Action for U.S. Patent Application No. 13/679,878, mailed Sep. 26, 2014 (Attorney's Ref. No. 6583-232) 7 pages
	62	Official Action for U.S. Patent Application No. 13/679,875, mailed Apr. 07, 2014 (Attorney's Ref. No. 6583-233) 7 pages RESTRICTION REQUIREMENT
	63	Official Action for U.S. Patent Application No. 13/679,875, mailed Jul. 17, 2014 (Attorney's Ref. No. 6583-233) 13 pages
	64	Official Action for U.S. Patent Application No. 13/679,441, mailed May 09, 2014 (Attorney's Ref. No. 6583-244) 6 pages
	65	Notice of Allowance for U.S. Patent Application No. 13/679,441, mailed Jul. 22, 2014 (Attorney's Ref. No. 6583-244) 5 pages
	66	Official Action for U.S. Patent Application No. 13/828,513, mailed May 06, 2014 (Attorney's Ref. No. 6583-247-CIP) 7 pages
	67	Official Action for U.S. Patent Application No. 13/828,513, mailed Sep. 04, 2014 (Attorney's Ref. No. 6583-247-CIP) 5 pages
	68	Official Action for U.S. Patent Application No. 13/828,651, mailed Jul. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-2) 17 pages
	69	Notice of Allowance for U.S. Patent Application No. 13/829,157, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-7) 14 pages
	70	Official Action for U.S. Patent Application No. 13/829,505, mailed Jul. 23, 2014 (Attorney's Ref. No. 6583-247-CIP-8) 7 pages

Examiner Signature	/Jeffery Williams/	Date Considered	01/11/2015

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				First Named Inventor	Christopher Ricci
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
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	71	Official Action for U.S. Patent Application No. 13/829,718, mailed Apr. 10, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 7 pages
	72	Official Action for U.S. Patent Application No. 13/829,718, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 8 pages
	73	Official Action for U.S. Patent Application No. 13/830,003, mailed Apr. 15, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 9 pages
	74	Official Action for U.S. Patent Application No. 13/830,003, mailed Jul. 25, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 9 pages
	75	Official Action for U.S. Patent Application No. 13/830,133, mailed Jul. 10, 2014 (Attorney's Ref. No. 6583-247-CIP-15) 9 pages
	76	Notice of Allowance for U.S. Patent Application No. 13/678,773, mailed Apr. 02, 2014 (Attorney's Ref. No. 6583-315) 5 pages
	77	Official Action for U.S. Patent Application No. 13/679,887, mailed Jun. 30, 2014 (Attorney's Ref. No. 6583-316) 6 pages

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	**Art Unit**
	JEFFERY WILLIAMS	2437

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

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

CLAIM		DATE								
Final	Original	10/07/2013	05/12/2014	01/11/2015						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	-	-						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	-	-						
	20	✓	-	-						
	21		✓	✓						
	22		✓	✓						
	23		✓	✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	Art Unit
	JEFFERY WILLIAMS	2437

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
PALM: inventor name search	10/7/2013	jw
East search: uspat, uspgpub, epo, jpo, derwent	10/7/2013	jw
NPL search: ibmtdb	10/7/2013	jw
limited classification search: 713, 726, 380	10/7/2013	jw
updated search	5/10/2014	jw
CPC limited search: H04W 84, 4; G06F 13; H04L 12; H04H 60; H04M 1	5/10/2014	jw
updated search	1/11/2015	jw

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

	/JEFFERY WILLIAMS/ Primary Examiner.Art Unit 2437

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	14	(US-20130145482-$ or US-20080174451-$ or US-20120173905-$ or US-20120173900-$ or US-20120110356-$ or US-20130250933-$ or US-20040024502-$ or US-20030158638-$ or US-20120259951-$ or US-20060274829-$ or US-20120284292-$ or US-20110035098-$).did. or (US-7891004-$).did. or (WO-2007066064-$).did.	US-PGPUB; USPAT; DERWENT	OR	ON	2015/01/12 00:50
L4	6	l3 and off$1load$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 00:50
L5	4	l3 and location with media	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 01:57
L6	9	"20100042498"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 02:01
L7	34	(premium $2authorized pay) with station same restrict$3 with access with (geo$1graphic location region)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 02:16
L8	660	detect$3 with presence with occupant with vehicle and detect$3 with driver	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 02:55
L9	266	detect$3 with presence with occupant with vehicle and detect$3 with driver with seat	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 02:55
L10	0	l9 and (@ad<"2011116" @rlad<"2011116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/01/12 02:55

			IBM_TDB			
L11	0	l8 and (@ad<"2011116" @rlad<"2011116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/12 02:56
S1	2	"20130145482"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 03:56
S2	0	vehicle adj computer and network same media same safety and park$3 with (halt$3 stop$4) with (music media navigation) and cellular same bluetooth	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:15
S3	4	(car vehicle automobile) same computer and (wireless$3 network satellite) same media and safety and park$3 with (halt$3 stop$4) with (music media navigation) and cellular and bluetooth	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:16
S4	82	("713".clas. "726".clas. "380".clas.) and vehicle with diagnostic with (computer controller module)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:40
S5	7	S4 and media and wireless and security and streaming	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:41
S6	154	vehicle with diagnostic with (computer controller module) and media and wireless and security and streaming	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:43
S7	133	S6 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:43
S8	65	S6 and (@ad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:44
S9	12	S8 and arbitrat$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT;	OR	ON	2013/10/07 04:45

			IBM_TDB			
S10	8	(US-20130145482-$ or US-20080174451-$ or US-20120173905-$ or US-20120173900-$ or US-20120110356-$ or US-20130250933-$ or US-20040024502-$ or US-20030158638-$).did.	US-PGPUB	OR	ON	2013/10/07 04:50
S11	3	S10 and arbitrat$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:50
S12	7	S10 and stream$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/10/07 04:51
S13	2	"20130145482"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 21:33
S14	672	(vehicle automobile car) same streaming with media	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 21:48
S15	100	S14 AND ((H04W84/005 OR H04W84/06 OR H04W4/046 OR H04W4/001 OR H04W4/008 OR H04W4/12 OR H04W4/18 OR H04W84/18 OR G06F13/14 OR H04L12/2803 OR H04M1/6091 OR H04M1/7253 OR H04M2250/02 OR H04M1/6075 OR H04M1/6083 OR H04M1/0202 OR H04M1/72552 OR H04M2250/06 OR H04M3/493 OR H04H60/91).CPC.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:28
S16	84	S15 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:28
S17	0	S14 and cach$3 with (park moving) same (law legal$5)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:29
S18	3	S14 and cach$3 with (park moving)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:30
S19	4	S14 and cach$3 with stream$3 same (park$3 moving)	US-PGPUB; USPAT;	OR	ON	2014/05/10 22:32

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S20	7407	(vehicle automobile car) same stream$4 with (music content video media radio)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:33
S21	10	S20 and cach$3 with stream$3 same (park$3 moving)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:33
S22	6	S21 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:34
S23	17	S20 and cach$3 with stream$3 same (vehicle automobile car) same (operat$3 driv$3 moving $2parked $2gear)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:50
S24	14	S23 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 22:50
S25	10154	(vehicle automobile car) same stream$4 same (music content video media radio)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:05
S26	3648	(vehicle automobile car) same (record$3 stream$4) same (music content video media radio) same moving	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:06
S27	58	(vehicle automobile car) same (record$3 stream$4 cach$3) same (music content video media radio) same (start$4 begin$3) adj2 mov$3 with (vehicle automobile car)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:07
S28	14	S24 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:08
S29	53	S27 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT;	OR	ON	2014/05/10 23:08

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S30	2	(vehicle automobile car) same (record$3 stream$4 cach$3) same (music content video media radio) same (start$4 begin$3) adj2 mov$3 with (vehicle automobile car) same (secur$3 safe$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:08
S31	70	(vehicle automobile car) same (record$3 stream$4 cach$3 stor$3) same (music content video media radio footage) same (start$4 begin$3) adj2 mov$3 and (vehicle automobile car) same (secur$3 safe$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:53
S32	76	(vehicle automobile car) same (record$3 stream$4 cach$3 stor$3) same (music content video media radio footage camera) same (start$4 begin$3) adj2 mov$3 and (vehicle automobile car) same (secur$3 safe$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:54
S33	75	S32 and (@ad<"20110116" @rlad<"20110116")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 23:54
S34	13	(US-20130145482-$ or US-20080174451-$ or US-20120173905-$ or US-20120173900-$ or US-20120110356-$ or US-20130250933-$ or US-20040024502-$ or US-20030158638-$ or US-20120259951-$ or US-20060274829-$ or US-20120284292-$ or US-20110035098-$).did. or (WO-2007066064-$).did.	US-PGPUB; DERWENT	OR	ON	2014/05/13 01:48
S35	1	S34 and park	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 01:48
S36	10	S34 and park$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 01:48
S37	106	("5794164" "6484082" "6681176" "6724920" "7295921" "7548815" "7606660" "7891004").pn. "20050149752" "20060042846" "20060125631" "20060250272" "20080140278" "20080148374" "20080212215" "20080253613" "20090180668" "20090278750" "20100090817" "20100097239" "20100144284" "20100222939" "20100295676" "20110053506" "20110105097" "20110106375" "20110112969" "20110117933"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:17

		"20120081267" "20120081311" "20120084542"				
S38	6	S37 and park$3 and stream$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:19
S39	3	"7738462".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:23
S40	4	"20110106375"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:27
S41	7	"20060042846" "6484082".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:30
S42	2	"7891004".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 22:32

EAST Search History (Interference)

< This search history is empty>

1/ 12/ 2015 3:33:03 AM
C:\ Users\ jwilliams\ Documents\ EAST\ Workspaces\ 13679476-VehicleMiddleware.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**INTERVIEW SUMMARY**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Dear Commissioner:

On January 28, 2015, Examiner Williams and the undersigned held a brief telephone conversation to discuss the above-identified application. During the conversation, *inter alia*, further distinctions between the invention as claimed and the prior art of record were discussed. In particular, further distinctions between the invention as claimed and reference U.S. Patent Application Publication No. 2003/0158638 to Yakes were identified and discussed. No final decision was reached regarding allowance of any pending claims.

The undersigned thanks Examiner Williams for his time and guidance.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Richard E. Zelenka/
Richard E. Zelenka
Reg. No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: January 28, 2015

Electronic Acknowledgement Receipt

EFS ID:	21335803
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	28-JAN-2015
Filing Date:	16-NOV-2012
Time Stamp:	17:07:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	Applicant_Interview_Summary_28Jan2015.pdf	77112 82c1c911ebd3a2647ed770449a1bec5642056104	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	77112

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

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**AMENDMENT AND RESPONSE**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Commissioner:

Applicants submit this Amendment and Response to address the non-final Office Action having a mailing date of January 16, 2015. While Applicants believe no fees are due with the filing of this Amendment and Response, the undersigned hereby authorizes the Commissioner to charge any fees deemed necessary to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on **page 2** of this paper.

Remarks/Arguments begin on **page 9** of this paper.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A vehicle, comprising:

a non-transient, tangible computer readable memory;

a computational module selector to identify and select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected task, operation, and/or function having performance requirements, wherein each of the plural computation modules has processing capabilities and operating system capabilities; wherein at least a pair of the plural computation modules has non-identical processing capabilities and/or operating system capabilities;~~the selected computational module being the most current version or release of the selected computational module;~~

~~wherein the vehicle further comprises~~ a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol;

wherein the computational module selector selects a computational module from among the plural computation modules that has processing capabilities and operating system capabilities that satisfy the performance requirements of the selected task, operation, and/or function;

wherein each of the computational module selector, computation modules and the network selector module are stored in the ~~a~~ non-transient, tangible computer readable memory.

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2. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

3. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

4. (Previously Presented) The vehicle of claim 3, wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

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5. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

6. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

7. (Canceled)

8. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service, wherein each

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of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

9. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function is executed or caused to be executed notwithstanding a contrary command from the vehicle operator, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

10. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant and wherein the media controller module, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

11. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises an installation supervisor module to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle

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and thereby prevent the component from communicating with a processing module in a different vehicle and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

12. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

15. (Canceled)

16. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a network controller module to cache automatically streaming media in response

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to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state, wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

17. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

18. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

19. – 20. (Canceled)

21. – 23. (Canceled)

24. (New) The vehicle of claim 1, wherein at least one of the plural computation modules is a software application of an on board or portable device located physically within the vehicle.

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25. (New) The vehicle of claim 24, wherein the selected task, operation, and/or function is running a software application, wherein the computational module selector selects a computational module from among the plural computation modules based on operating system capabilities that satisfy the software application operating system performance requirements.

26. (New) The vehicle of claim 25, wherein the vehicle further comprises a display, wherein the software application is displayed on the display.

27. (New) The vehicle of claim 26, wherein the display is configured to allow the user to interact with the software application.

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REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed January 16, 2015, claims 1-6, 8-18 and 21-23 were pending in the application. Claim 1 is amended. Support for the claim amendments is found at least at [0160], [0233], and [0260] of the application as published. Claims 7, 19 and 20 were previously canceled. Claims 15 and 21-23 are canceled by this paper. Claims 24-27 are new. Support for the new claims is found at least at [0041], [0176], [0269] and Fig. 16 of the application as published. No new matter has been added. Claim 1 is an independent claim.

Therefore, claims 1-6, 8-14, 16-18 and 24-27 are present for examination. Applicants respectfully request reconsideration of this application as amended.

Rejections Under 35 U.S.C. §112

Claim 15 is rejected under 35 U.S.C. §112. Without admission as to the validity of this rejection and solely to facilitate prosecution, Applicants have canceled Claim 15. Accordingly, the rejection of Claim 15 is now moot.

Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1-5, 8-14 under 35 U.S.C. §103 as being unpatentable over U.S. Pat. Publ. No. 2003/0158639 to Yakes ("Yakes"). Also, the Office Action rejects claims 6, 16 and 21-23 under 35 U.S.C. §103 as being unpatentable over Yakes in view of U.S. Pat. Publ. No. 2012/0110356 to Yousefi ("Yousefi"). Lastly, the Office Action rejects claim 17 under 35 U.S.C. §103 as being unpatentable over Yakes in view of U.S. Pat. Publ. No. 2007/0156317 to Breed ("Breed").

In order for a rejection under 35 U.S.C. § 102 to be proper, each and every claim element must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Applicants respectfully request reconsideration because the Office Action has failed to show a *prima facie* case of anticipation under § 102. Indeed, "for anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." See MPEP §706.2, Original Eighth Edition, August 2001, Latest Revision July 2010. Adiga fails to teach each and every aspect of the claims.

To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Eighth Edition, August 2001, Latest Revision August 2012.

However, all of the elements of the rejected claims cannot be found in the cited references, whether those references are considered alone or in combination.

For example, at least the following features of amended claim 1 are not disclosed or suggested by the cited references, i.e. a vehicle comprising: 1) a computational module selector to identify and select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected task, operation, and/or function having performance requirements, wherein each of the plural computation modules has processing capabilities and operating system capabilities; wherein at least a pair of the plural computation modules has non-identical processing capabilities and/or operating system capabilities; 2) a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol; and 3) wherein the computational module selector selects a computational module from among the plural computation modules that has processing capabilities and

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operating system capabilities that satisfy the performance requirements of the selected task, operation, and/or function.

At best, primary reference Yakes discloses, at [0005], an "electric traction vehicle that can be updated and upgraded as new technology and components become available." The Yakes vehicle, and its associated systems, is designed for commonality and redundancy, with standardized software and hardware. That is, the Yakes "interface modules 1420 each include a microprocessor 1815 that is sufficiently powerful to allow each interface module to serve as the central control unit. The interface modules are identically programmed." *See* [0244].

Furthermore, the Yakes "interface modules are both physically and functionally interchangeable because the interface modules are capable of being plugged in at any slot on the network, and are capable of performing any functions that are required at that slot on the network. *See* [0244]. Such an "arrangement is highly advantageous. Because all of the interface modules 1420 are identically programmed and store the same information, the interface modules are physically and functionally interchangeable within a given class of vehicles. Thus, if an interface module 1420 on one variant module is rendered inoperative, but the variant module is otherwise operational, the inoperative interface module can be replaced with an interface module scavenged from another inoperative vehicle." *See* [0246].

This is opposite, and a teaching-away, from amended Claim 1, which, *inter alia*, requires "wherein at least a pair of the plural computation modules has non-identical processing capabilities and/or operating system capabilities."

Primary reference Yakes and secondary reference Yousefi provide additional teach aways from some features. For example, Yakes requires two on more communication networks, e.g. "each of the communication networks 1661-1663 may be formed of two or more communication networks to provide redundancy within each control system." *See* [0236]. In contrast, amended Claim 1 requires a "network selector module to select one of plural communication networks."

Additionally, Yousefi requires what appears to be a hard-coded network configuration that must conform to rigid protocols, e.g. "the network manager 40 coordinate[s] communication of packets, via the network fabric 32, among the vehicle control modules 38, the memory 46, and the multimedia processing module(s) 48 based

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on individual content of the packets and in accordance with a global vehicle network communication protocol" wherein "the processing module of the network node generates a header section of a frame to include a preamble, a vehicle network field, and routing information." *See* [0141] and [0216]. In contrast, amended Claim 1 requires a network selector module that "selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service."

Accordingly, for at least the reasons above, Applicants submit that the rejections of Claims 1-6 and 8-14 and 16-18 under 35 U.S.C. § 103 should be reconsidered and withdrawn.

Conclusion

Based on the foregoing, Applicants believe all pending claims are in condition for allowance. Applicants do not acquiesce to any objection, rejection, or argument not specifically addressed herein. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,
SHERIDAN ROSS P.C.

By: */Richard E. Zelenka/*
Richard E. Zelenka
Registration No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: February 10, 2015

Ford Ex. 1161 Page 435 of 520

Electronic Acknowledgement Receipt

EFS ID:	21452214
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	10-FEB-2015
Filing Date:	16-NOV-2012
Time Stamp:	14:56:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment_Response_10Feb2015.pdf	138418 6e8866bd0caf849389bb40f66cf57c6f41ca117a	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	12
Warnings:			
Information:			
	Total Files Size (in bytes):	138418	

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/679,476	Filing Date 11/16/2012	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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

APPLICATION AS AMENDED – PART II

AMENDMENT **02/10/2015**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

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

LIE
/DORIS BURNS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
(Use as many sheets as necessary)				First Named Inventor	RICCI, Christopher P.
				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	1	of	3	Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5296840	03/22/1994	Gieffers	
	2	6502022	12/31/2002	Chastain et al.	
	3	6690940	02/10/2004	Brown et al.	
	4	6782240	08/24/2004	Tabe	
	5	7343148	03/11/2008	O'Neil	
	6	7474264	01/06/2009	Bolduc et al.	
	7	7506375	03/17/2009	Kanda et al.	
	8	7549041	06/16/2009	Wang	
	9	7734315	06/08/2010	Rathus et al.	
	10	8527143	09/03/2013	Tan	
	11	8583292	11/12/2013	Preston et al.	
	12	8644165	02/04/2014	Saarimaki et al.	
	13	8706143	04/22/2014	Elias	
	14	8761673	06/24/2014	Sakata	
	15	8774842	07/08/2014	Jones et al.	
	16	8817761	08/26/2014	Gruberman et al.	
	17	8838088	09/16/2014	Henn et al.	
	18	8868899	10/21/2014	Galicia et al.	
	19	2002/0023010	02/21/2002	Rittmaster et al.	
	20	2002/0045484	04/18/2002	Eck et al.	
	21	2003/0182435	09/25/2003	Redlich et al.	
	22	2004/0255123	12/16/2004	Noyama et al.	
	23	2005/0042999	02/24/2005	Rappaport	
	24	2005/0130744	06/16/2005	Eck et al.	
	25	2005/0153760	07/14/2005	Varley	
	26	2007/0015485	01/18/2007	DeBiasio et al.	
	27	2007/0120697	05/31/2007	Ayoub et al.	
	28	2008/0305780	12/11/2008	Williams et al.	
	29	2009/0082951	03/26/2009	Graessley	
	30	2009/0224931	09/10/2009	Dietz et al.	
	31	2011/0021234	01/27/2011	Tibbitts et al.	
	32	2011/0021213	01/27/2011	Carr	

Examiner Signature		Date Considered	

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	RICCI, Christopher P.
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	2	of	3	Attorney Docket Number	6583-247

	33	2011/0092159	04/21/2011	Park et al.	
	34	2011/0137520	06/09/2011	Rector et al.	
	35	2012/0071097	03/22/2012	Matsushita et al.	
	36	2012/0116678	05/10/2012	Witmer	
	37	2012/0274459	11/01/2012	Jaisimha et al.	
	38	2012/0289217	11/15/2012	Reimer et al.	
	39	2013/0035063	02/07/2013	Fisk et al.	
	40	2013/0157640	06/20/2013	Aycock	
	41	2013/0212659	08/15/2013	Maher et al.	
	42	2014/0032014	01/30/2014	DeBiasio et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	43	Official Action for U.S. Patent Application No. 13/679,459, mailed Oct. 28, 2014 (Attorney's Ref. No. 6583-228) 17 pages
	44	Notice of Allowance for U.S. Patent Application No. 13/679,857, mailed Dec. 3, 2014 (Attorney's Ref. No. 6583-231) 5 pages
	45	Notice of Allowance for U.S. Patent Application No. 13/679,878, mailed Feb. 2, 2015 (Attorney's Ref. No. 6583-232) 5 pages
	46	Official Action for U.S. Patent Application No. 13/679,875, mailed Dec. 26, 2014 (Attorney's Ref. No. 6583-233) 14 pages
	47	Official Action for U.S. Patent Application No. 13/679,676, mailed Feb 25, 2015 (Attorney's Ref. No. 6583-234) 14 pages
	48	Notice of Allowance for U.S. Patent Application No. 13/679,441, mailed Oct. 29, 2014 (Attorney's Ref. No. 6583-244) 5 pages
	49	Official Action for U.S. Patent Application No. 13/679,864, mailed Nov. 03, 2014 (Attorney's Ref. No. 6583-245) 9 pages
	50	Notice of Allowance for U.S. Patent Application No. 13/679,864, mailed Mar. 03, 2015 (Attorney's Ref. No. 6583-245) 8 pages

Examiner Signature		Date Considered	

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

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	RICCI, Christopher P.
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	3	of	3	Attorney Docket Number	6583-247

	51	Official Action for U.S. Patent Application No. 13/828,513, mailed Dec. 24, 2014 (Attorney's Ref. No. 6583-247-CIP) 7 pages
	52	Notice of Allowance for U.S. Patent Application No. 13/828,651, mailed Feb. 2, 2015 (Attorney's Ref. No. 6583-247-CIP-2) 10 pages
	53	Official Action for U.S. Patent Application No. 13/828,758, mailed Feb. 12, 2015 (Attorney's Ref. No. 6583-247-CIP-3) 10 pages
	54	Official Action for U.S. Patent Application No. 13/828,860, mailed Feb. 27, 2015 (Attorney's Ref. No. 6583-247-CIP-4) 16 pages
	55	Official Action for U.S. Patent Application No. 13/828,960, mailed Jan. 05, 2015 (Attorney's Ref. No. 6583-247-CIP-5) 15 pages
	56	Notice of Allowance for U.S. Patent Application No. 13/829,505, mailed Nov. 26, 2014 (Attorney's Ref. No. 6583-247-CIP-8) 8 pages
	57	Notice of Allowance for U.S. Patent Application No. 13/829,718, mailed Nov. 21, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 5 pages
	58	Notice of Allowance for U.S. Patent Application No. 13/830,003, mailed Nov. 21, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 7 pages
	59	Official Action for U.S. Patent Application No. 13/830,133, mailed Oct. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-15) 31 pages
	60	Notice of Allowance for U.S. Patent Application No. 13/830,133, mailed Mar. 3, 2015 (Attorney's Ref. No. 6583-247-CIP-15) 5 pages
	61	Notice of Allowance for U.S. Patent Application No. 13/679,887, mailed Nov. 13, 2014 (Attorney's Ref. No. 6583-316) 5 pages

Examiner Signature		Date Considered	

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

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Douglas W. Swartz/Amy Duarte
Attorney Docket Number:	6583-247

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	21775748
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Douglas W. Swartz/Amy Duarte
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-247
Receipt Date:	16-MAR-2015
Filing Date:	16-NOV-2012
Time Stamp:	12:59:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	10948
Deposit Account	191970
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-247_IDS_04.pdf	255471 3b707680473 58bfe8e66a3c41ecce33aa46b06b7	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	6	
Warnings:					
Information:					
2	Other Reference-Patent/App/Search documents	6583-228_OA_10-28-2014.pdf	560230 b2372a3f0429422fd6fc89862a18ff9319112dc4	no	17
Warnings:					
Information:					
3	Other Reference-Patent/App/Search documents	6583-231_NOA_12-03-2014.pdf	675466 8315058f1ac202f0d0144bbea9018bef4e93b8f5	no	5
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	6583-232_NOA_02-02-2015.pdf	351931 70bc25c36da63f4282a8dc4b4c0e253bece d9812	no	5
Warnings:					
Information:					
5	Other Reference-Patent/App/Search documents	6583-233_FOA_12-26-2014.pdf	900978 d4bfa81e443d06c0048b074493b4b3ebe068b655	no	14
Warnings:					
Information:					
6	Other Reference-Patent/App/Search documents	6583-234_OA_02-25-2015.pdf	545471 3ebfdfba6f2b87153525b339b075ce7689958b07	no	14
Warnings:					
Information:					

7	Other Reference-Patent/App/Search documents	6583-244_NOA_10-29-2014.pdf	672578 f7fb39fdcdd84488f510cc3934d608f95a0ece26	no	5
Warnings:					
Information:					
8	Other Reference-Patent/App/Search documents	6583-245_OA_11-03-2014.pdf	658444 24061de1bd059f0e02a3e78d94a2d56e0becf61a	no	9
Warnings:					
Information:					
9	Other Reference-Patent/App/Search documents	6583-245_NOA_03-03-2015.pdf	411375 bb0b1065e166a3a089a7ff2446f578c84db9e51a	no	8
Warnings:					
Information:					
10	Other Reference-Patent/App/Search documents	6583-247-CIP_OA_12-24-2014.pdf	483585 099598fc5d7a9c890439ec90f4be3850ea6e2522	no	7
Warnings:					
Information:					
11	Other Reference-Patent/App/Search documents	6583-247-CIP-2_NOA_02-02-2015.pdf	510147 728841f6cb85ce7e42df9a7cc3c105809db65e02	no	10
Warnings:					
Information:					
12	Other Reference-Patent/App/Search documents	6583-247-CIP-3_OA_02-12-2015.pdf	311929 0427c4feac2278921511184 53b5801b64e418d46	no	10
Warnings:					
Information:					
13	Other Reference-Patent/App/Search documents	6583-247-CIP-4_OA_02-27-2015.pdf	525273 bed19c20ddbb51822e0df65f598b39300da127a0	no	16
Warnings:					
Information:					
14	Other Reference-Patent/App/Search documents	6583-247-CIP-5_OA_01-05-2015.pdf	1139510 b956f01e58ae52a266d4a93bf8c8c9d72b5158c3	no	15
Warnings:					
Information:					
15	Other Reference-Patent/App/Search documents	6583-247-CIP-8_NOA_11-26-2014.pdf	850287 15cd5f2391bb31c94aa8204c4f967d6bdef56878	no	8
Warnings:					
Information:					

16	Other Reference-Patent/App/Search documents	6583-247-CIP-10_NOA_11-21-2014.pdf	675787 0df30b144a3b7073c64991e510d9d60cec168df9	no	5
Warnings:					
Information:					
17	Other Reference-Patent/App/Search documents	6583-247-CIP-13_NOA_11-21-2014.pdf	791349 5eb73618340b2d6c389021908585d693d6094d56	no	7
Warnings:					
Information:					
18	Other Reference-Patent/App/Search documents	6583-247-CIP-15_OA_10-29-2014.pdf	2654153 c2e491674c0de498e854edf13e73afd9b44e6a86	no	31
Warnings:					
Information:					
19	Other Reference-Patent/App/Search documents	6583-247-CIP-15_NOA_03-03-2015.pdf	354782 b3d022740c001540d191eefd15f3ad05e6b6f758	no	5
Warnings:					
Information:					
20	Other Reference-Patent/App/Search documents	6583-316_NOA_11-13-2014.pdf	673584 ed1fd5cba6b85b306dadf857b565b4017a553d11	no	5
Warnings:					
Information:					
21	Fee Worksheet (SB06)	fee-info.pdf	30719 3cbf1cbafbfbde37e4d404245cc0ed71d035c616	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	14033049	

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
RICCI et al.	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	
Atty. File No.: 6583-247	)	*Electronically Submitted*
Entitled: "VEHICLE MIDDLEWARE"	)	

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents

analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☒	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☒ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: March 16, 2015

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**INTERVIEW SUMMARY**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Dear Commissioner:

On May 1, 2015, Examiner Williams and the undersigned held a brief telephone conversation to discuss the above-identified application. During the conversation, *inter alia*, Applicant's Amendment and Response to non-final Office Action, filed on February 10, 2015, was introduced. More specifically, further distinctions between the invention as claimed and U.S. Patent Application Publication No. 2003/0158638 to Yakes and U.S. Pat. Publ. No. 2012/0110356 to Yousefi were identified. No final decision was reached regarding allowance of any pending claims.

The undersigned thanks Examiner Williams for his time and guidance.

Respectfully submitted,
SHERIDAN ROSS P.C.

By: /Richard E. Zelenka/
Richard E. Zelenka
Reg. No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: May 1, 2015

Electronic Acknowledgement Receipt

EFS ID:	22235102
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	Applicant_Interview_Summary_1May2015.pdf	77254 a4d244fa99fd555eb6275af1750c9f43fa1d2c38	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	77254

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

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

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

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13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

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Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER
WILLIAMS, JEFFERY L

ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
06/04/2015	ELECTRONIC

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

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

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

flexpatents@sheridanross.com
edocket@sheridanross.com

Office Action Summary	Application No. 13/679,476	Applicant(s) RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2495	AIA (First Inventor to File) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *2/10/15*.

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

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

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

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

Disposition of Claims

5)☒ Claim(s) *1 – 6, 8 –14,16-18, and 24-27* is/are pending in the application.

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

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1 – 6, 8 –14,16-18, and 24-27* is/are rejected.

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

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

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

Application Papers

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

11)☒ The drawing(s) filed on *11/16/12* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

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

Attachment(s)

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

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/16/15*.

3) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *5/1/15* .

4) ☐ Other: _____.

DETAILED ACTION

This action is in response to the communication filed on 2/10/15.

All objections and rejections not set forth below have been withdrawn.

Claims 1 – 6, 8 – 14, 16 – 18, and 24 – 27 are pending.

Any references to applicant's specification are made by way of applicant's U.S. pre-grant printed patent publication.

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

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The specification fails to provide proper antecedent basis for these recitations of "… wherein each of the plural computation modules has … operating system capabilities", "…wherein at least a pair of .... computation modules has ... non-identical ... operating system capabilities..." (e.g. claim 1), "...the ... computation modules is a software application of an ... portable device located physically within the vehicle…" (e.g. claim 24), selecting a "computation module … based on operating system capabilities…", and wherein that selection satisfies "software application operating system performance requirements".

Specifically, the examiner was unable to find the idea of that software modules as having “operating system capabilities” or non-identical “operating system capabilities”. Furthermore, the examiner was unable to identify a disclosure of one of the selected computation modules as being located on a portable device within the vehicle. Furthermore, the examiner notes that, while paragraph 233 of applicant’s specification appears to suggest that requirements of an operating system can dictate the selection of a module, the specification does not appear to teach the selection of a module based on capabilities of an operating system. Furthermore noted, the vocabulary of "software application operating system performance requirements" is not found within the applicant’s original disclosure and it is not a standard and recognized term within the art.

The examiner notes that the applicant’s specification is lengthy and extensive. Thus, if the applicant believes the examiner’s position to be taken in error, the applicant is respectfully encouraged to clarify the record with specific citations of support within the originally filed disclosure.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 – 6, 8 – 14, 16 – 18, and 24 – 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has not pointed out where the new (or amended) claim is supported, nor does there appear to be a written description of the claim limitations in the application as filed (see above objection to the specification).

The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 6, 8 – 14, 16 – 18, and 24 – 27 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Specifically, regarding claim 1, the recitation of computation modules as having “operating system capabilities" is ambiguous and renders the scope of the claims indefinite. The examiner notes that it is not clear whether the applicant is suggesting that the computation modules are operating systems and thus have different abilities, or

that the computation modules are capable of being executed by an operating system, or something else entirely. The examiner points out that the applicant's original specification is silent as to this recitation.

Similarly, it is not clear what the applicant is intending to suggest by the recitation of “wherein the computational module selector selects a computational module from among the plural computation modules that has … operating system capabilities that satisfy the performance requirements of the selected task, operation, and/or function”. Again, the examiner respectfully points out that the applicant's original specification is silent as to this recitation.

Specifically, regarding claim 25 is indefinite in scope because the term or language of "software application operating system performance requirements" is not found within the applicant’s original disclosure and it is not a standard and recognized term or language within the art.

All depending claims are rejected by virtue of dependency.

Claim Rejections - 35 USC § 103

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

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 – 5, 8 – 14, 18, and 24 – 27 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes et al. (Yakes), US 2003/0158638 A1.

Regarding claim 1, as best understood in light of the above rejections, Yakes discloses:

a *non-transient, tangible computer readable memory; a computational module selector to select a computational module form among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, module selector to perform a selected task, operation, and/or function, the selected task, operation, and/or function having performance requirements, wherein each of the plural computation modules has processing capabilities and operating system capabilities; wherein at least a pair of the plural computation modules has non-identical processing capabilities and/or operating system capabilities* (e.g. Yakes, fig. 2:14, 16 - CPU). Herein, Yakes discloses a means, comprising a cpu with a control program, which selects between and operates a plurality of programmed instructions, i.e. modules, wherein each of the "modules" or units of program instructions perform a different function (i.e. have different requirements for performance or capabilities).

a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector

module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol (e.g. Yakes, fig. 2:16 – control program; par. 102, 103). Herein, Yates discloses a stored software program, i.e. "network selector module", that enables the CPU to select and properly communicate between different communication networks based upon protocol (e.g. "type of signal").

wherein the computational module selector selects a computational module from among the plural computation modules that has processing capabilities … that satisfy the performance requirements of the selected task, operation, and/or function (e.g. Yakes, par. 102 - 104, 213). Herein, the control program can select which software modules are to operate within the system based upon the needed capabilities of the different software modules.

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Yakes does not explicitly recite language stating that *computational module selector selects a computational module* based upon "operating system capabilities". While, it is noted above, that it is unclear what the applicant is attempting to recite, the

examiner points out however, that Yakes teaches that the selection of operation by computation modules is based upon load within the system (e.g. Yakes, fig. 6, 7).

Thus, the examiner points out that it would have been obvious to one of ordinary skill in the art, in view of the teachings of Yakes in combination with logic and common sense, to realize that the load balancing teachings of Yakes corresponds to the capability of an "operating system" to perform the required functions.

Regarding claim 2, Yakes discloses:

a plurality of processing modules, a first processing module being in an active mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module (e.g. Yakes, fig. 2:14; par. 184, 185). Herein, the CPU may execute at least one module (i.e. primary control). Furthermore, information transfer for at least some of the modules is accomplished wirelessly.

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 3, Yakes discloses:

wherein the vehicle comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module (e.g. Yakes, fig. 2:14, 16 - CPU). CPU's arbitrate the execution of tasks such as by semaphore.

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 4, Yakes discloses:

wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score

of a different processing module to determine a state of health to determine a state of health of the selected processing module (e.g. Yakes, par. 336).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 5, Yakes discloses:

wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system (e.g. Yakes, par. 357).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 8, Yakes discloses:

and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to

contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service (e.g. Yakes, par. 91).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 9, Yakes discloses:

and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function, is executed or caused to be executed notwithstanding a contrary command from the vehicle operator (e.g. Yakes, par. 281).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 10, Yakes discloses:

and wherein the media controller, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems (e.g. Yakes, par. 184).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 11, Yakes discloses:

and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module (e.g. Yakes, fig. 2).

wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, par. 400, 421-423).

Regarding claim 12, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer (e.g. Yakes, fig. 2; par. 297).

Regarding claim 13, Yakes discloses:

wherein the computational module is selected from among plural computational modules, and wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application (e.g. Yakes, fig. 2; par. 5, 400). The software modules comprise different types of functions and times of release (i.e. different versions).

Regarding claim 14, Yakes discloses:

wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 19; par. 277, 403, 404). The system comprises software means for detecting failures and isolating processing modules by turning off inputs and outputs and replicating the failed modules elsewhere within the system.

Regarding claim 18, Yakes discloses:

wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 34, 35; par. 185).

Regarding claim 24, Yakes discloses:

wherein at least one of the plural computation modules is a software application of an on board or portable device located physically within the vehicle (e.g. Yakes, par. 87, 222, 244, 246). Herein, different software programs (i.e. computation modules), for

the performance of different vehicle functions, are downloaded into the system components located on the vehicle.

Regarding claim 25, Yakes discloses:

wherein the selected task, operation, and/or function is running a software application, wherein the computational module selector selects a computational module from among the plural computation modules based on operating system capabilities that satisfy the software application operating system performance requirements (e.g. Yakes, par. 87, 222, 244, 246).

Regarding claim 26, Yakes discloses:

wherein the vehicle further comprises a display, wherein the software application is displayed on the display (e.g. Yakes, par. 98, 329).

Regarding claim 27, Yakes discloses:

wherein the display is configured to allow the user to interact with the software application (e.g. Yakes, par. 98, 329).

Claims 6 and 16 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes in view of Yousefi et al. (Yousefi), US 2012/0110356 A1.

Regarding claim 6, Yakes discloses a vehicle software system for monitoring a vehicle and receiving media signals from outside sources. However, Yakes does not appear to disclose a media filter module.

Yousefi also discloses a vehicle software system for monitoring a vehicle and for receiving media signals. Furthermore Yousefi discloses:

a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein each of the afore-mentioned modules are stored in a non- transient, tangible computer readable memory (e.g. Yousefi, fig. 107:1752; par. 572, 576, 577).

It would have been obvious to one of skill in the art to employ the media filter teachings of Yousefi within the vehicle software system of Yakes. This would have been obvious because one of ordinary skill in the art would have been motivated by the advantages of flexibility in considering the preferences or requirements of the vehicle and/or vehicle occupants when receiving media.

Regarding claim 16, Yakes discloses a vehicle software system for monitoring a vehicle and receiving media signals from outside sources. However, Yakes does not appear to disclose a media filter module.

Yousefi also discloses a vehicle software system for monitoring a vehicle and for receiving media signals. Furthermore Yousefi discloses:

a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation … (e.g. Yousefi, fig. 60, 61; par. 155, 320, 342 - 345). Herein, Yousefi discloses that automatically steaming media, such as camera footage, may be cached in the event of a change in vehicle state or operation.

and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state (e.g. Yousefi, fig. 60, 61; par. 346, 347). Herein, Yousefi discloses that automatically steaming media, such as camera footage, may be cached in the event a parked vehicle becomes unsettled or otherwise involved within a collision (i.e. unparked). Furthermore, the examiner notes that while Yousefi does not explicitly state that a collision results in movement or motion, one of ordinary skill will logically recognize in light of physical principle that a collision may result in motion of the parked vehicle.

It would have been obvious to one of skill in the art to employ the media filter teachings of Yousefi within the vehicle software system of Yakes. This would have been obvious because one of ordinary skill in the art would have been motivated by the

advantages of flexibility in considering the preferences or requirements of the vehicle and/or vehicle occupants when receiving media.

Furthermore, the combination enables:

wherein the computational module selector continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory (e.g. Yakes, fig. 6, 7).

Claim 17 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Yakes in view of Breed et al. (Breed), US 2007/0156317 A1.

Regarding claim 17, Yakes discloses a vehicle software system for monitoring a vehicle. However, Yakes does not appear to disclose a presence reporting module to determine the presence or lack of presence of operators and occupants within the vehicle while the vehicle is in motion.

Breed also discloses a vehicle software system for monitoring a vehicle. Furthermore Breed discloses a presence reporting module that utilizes a selected communication channel to determine the presence or lack of presence of operators and occupants within the vehicle while the vehicle is in motion (e.g. Breed, fig. 1 – 4; par. 99, 145, 212).

It would have been obvious to one of skill in the art to employ the presence reporting teachings of Breed within the system of Yakes. This would have been obvious because one of skill in the art would have been motivated by the advantages of vehicle and occupant safety.

Response to Arguments

Applicant's arguments filed 2/10/15 have been fully considered but they are not persuasive.

Applicant argues or alleges essentially that:

…

Furthermore, the Yakes "interface modules are both physically and functionally interchangeable because the interface modules are capable of being plugged in at any slot on the network, and are capable of performing any functions that are required at that slot on the network. See [0244]. …

…

This is opposite, and a teaching-away, from amended Claim 1, which, inter alia, requires "wherein at least a pair of the plural computation modules has non-identical processing capabilities and/or operating system capabilities." …

…

(Remarks, pg. 10 – 11)

Examiner respectfully responds:

The examiner respectfully disagrees. Specifically, applicant's remarks are relevant only to the on-board hardware components that can be programmed with the different software applications (i.e. "computation modules"). However, the examiner notes that the prior art clearly shows that the software units or applications of the prior art are different and perform different functions. Thus, the examiner points out that the prior art teaches the claimed subject matter of different software modules that perform non-identical functions.

Applicant argues or alleges essentially that:

…

Primary reference Yakes and secondary reference Yousefi provide additional teach aways from some features. For example, Yakes requires two on more communication networks, e.g. "each of the communication networks 1661-1663 may be formed of two or more communication networks to provide redundancy within each control system." See [0236]. In contrast, amended Claim 1 requires a "network selector module to select one of plural communication networks."…

… In contrast, amended Claim 1 requires a network selector module that "selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal,

available and/or unavailable bandwidth, network performance parameter(s), and quality of service."

…

(Remarks, pg. 11, 12)

Examiner respectfully responds:

The examiner respectfully disagrees. Specifically, applicant's remarks are unpersuasive, at least, for the reason that it is unclear as to what rationale the applicant believes to be the basis for the prior art as teaching away from the claimed invention.

The examiner respectfully notes that even if the prior art discloses redundant networks, as alleged by the applicant, it would still anticipate "plural" networks as claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)272-7965. The examiner can normally be reached on 9:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Farid Homayounmerhr can be reached on 571-272-3739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFERY WILLIAMS/
Primary Examiner, Art Unit 2495

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *01 May 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Yakes*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner and applicant's representative discussed the amendments of 2/10/15. The examiner noted that a careful consideration will be given upon examination. No agreement was reached regarding the patentability of the claims over the prior art.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	3

Complete if Known	
Application Number	13/679,476
Filing Date	November 16, 2012
First Named Inventor	RICCI, Christopher P.
Art Unit	2495
Examiner Name	Jeffery Williams
Attorney Docket Number	6583-247

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5296840	03/22/1994	Gieffers	
	2	6502022	12/31/2002	Chastain et al.	
	3	6690940	02/10/2004	Brown et al.	
	4	6782240	08/24/2004	Tabe	
	5	7343148	03/11/2008	O'Neil	
	6	7474264	01/06/2009	Bolduc et al.	
	7	7506375	03/17/2009	Kanda et al.	
	8	7549041	06/16/2009	Wang	
	9	7734315	06/08/2010	Rathus et al.	
	10	8527143	09/03/2013	Tan	
	11	8583292	11/12/2013	Preston et al.	
	12	8644165	02/04/2014	Saarimaki et al.	
	13	8706143	04/22/2014	Elias	
	14	8761673	06/24/2014	Sakata	
	15	8774842	07/08/2014	Jones et al.	
	16	8817761	08/26/2014	Gruberman et al.	
	17	8838088	09/16/2014	Henn et al.	
	18	8868899	10/21/2014	Galicia et al.	
	19	2002/0023010	02/21/2002	Rittmaster et al.	
	20	2002/0045484	04/18/2002	Eck et al.	
	21	2003/0182435	09/25/2003	Redlich et al.	
	22	2004/0255123	12/16/2004	Noyama et al.	
	23	2005/0042999	02/24/2005	Rappaport	
	24	2005/0130744	06/16/2005	Eck et al.	
	25	2005/0153760	07/14/2005	Varley	
	26	2007/0015485	01/18/2007	DeBiasio et al.	
	27	2007/0120697	05/31/2007	Ayoub et al.	
	28	2008/0305780	12/11/2008	Williams et al.	
	29	2009/0082951	03/26/2009	Graessley	
	30	2009/0224931	09/10/2009	Dietz et al.	
	31	2011/0021234	01/27/2011	Tibbitts et al.	
	32	2011/0021213	01/27/2011	Carr	

Examiner Signature	/Jeffery Williams/	Date Considered	05/30/2015

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	RICCI, Christopher P.
				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	2	of	3	Attorney Docket Number	6583-247

	33	2011/0092159	04/21/2011	Park et al.	
	34	2011/0137520	06/09/2011	Rector et al.	
	35	2012/0071097	03/22/2012	Matsushita et al.	
	36	2012/0116678	05/10/2012	Witmer	
	37	2012/0274459	11/01/2012	Jaisimha et al.	
	38	2012/0289217	11/15/2012	Reimer et al.	
	39	2013/0035063	02/07/2013	Fisk et al.	
	40	2013/0157640	06/20/2013	Aycock	
	41	2013/0212659	08/15/2013	Maher et al.	
	42	2014/0032014	01/30/2014	DeBiasio et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	43	Official Action for U.S. Patent Application No. 13/679,459, mailed Oct. 28, 2014 (Attorney's Ref. No. 6583-228) 17 pages
	44	Notice of Allowance for U.S. Patent Application No. 13/679,857, mailed Dec. 3, 2014 (Attorney's Ref. No. 6583-231) 5 pages
	45	Notice of Allowance for U.S. Patent Application No. 13/679,878, mailed Feb. 2, 2015 (Attorney's Ref. No. 6583-232) 5 pages
	46	Official Action for U.S. Patent Application No. 13/679,875, mailed Dec. 26, 2014 (Attorney's Ref. No. 6583-233) 14 pages
	47	Official Action for U.S. Patent Application No. 13/679,676, mailed Feb 25, 2015 (Attorney's Ref. No. 6583-234) 14 pages
	48	Notice of Allowance for U.S. Patent Application No. 13/679,441, mailed Oct. 29, 2014 (Attorney's Ref. No. 6583-244) 5 pages
	49	Official Action for U.S. Patent Application No. 13/679,864, mailed Nov. 03, 2014 (Attorney's Ref. No. 6583-245) 9 pages
	50	Notice of Allowance for U.S. Patent Application No. 13/679,864, mailed Mar. 03, 2015 (Attorney's Ref. No. 6583-245) 8 pages

Examiner Signature	/Jeffery Williams/	Date Considered	05/30/2015

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/679,476
				Filing Date	November 16, 2012
				First Named Inventor	RICCI, Christopher P.
(Use as many sheets as necessary)				Art Unit	2495
				Examiner Name	Jeffery Williams
Sheet	3	of	3	Attorney Docket Number	6583-247

	51	Official Action for U.S. Patent Application No. 13/828,513, mailed Dec. 24, 2014 (Attorney's Ref. No. 6583-247-CIP) 7 pages
	52	Notice of Allowance for U.S. Patent Application No. 13/828,651, mailed Feb. 2, 2015 (Attorney's Ref. No. 6583-247-CIP-2) 10 pages
	53	Official Action for U.S. Patent Application No. 13/828,758, mailed Feb. 12, 2015 (Attorney's Ref. No. 6583-247-CIP-3) 10 pages
	54	Official Action for U.S. Patent Application No. 13/828,860, mailed Feb. 27, 2015 (Attorney's Ref. No. 6583-247-CIP-4) 16 pages
	55	Official Action for U.S. Patent Application No. 13/828,960, mailed Jan. 05, 2015 (Attorney's Ref. No. 6583-247-CIP-5) 15 pages
	56	Notice of Allowance for U.S. Patent Application No. 13/829,505, mailed Nov. 26, 2014 (Attorney's Ref. No. 6583-247-CIP-8) 8 pages
	57	Notice of Allowance for U.S. Patent Application No. 13/829,718, mailed Nov. 21, 2014 (Attorney's Ref. No. 6583-247-CIP-10) 5 pages
	58	Notice of Allowance for U.S. Patent Application No. 13/830,003, mailed Nov. 21, 2014 (Attorney's Ref. No. 6583-247-CIP-13) 7 pages
	59	Official Action for U.S. Patent Application No. 13/830,133, mailed Oct. 29, 2014 (Attorney's Ref. No. 6583-247-CIP-15) 31 pages
	60	Notice of Allowance for U.S. Patent Application No. 13/830,133, mailed Mar. 3, 2015 (Attorney's Ref. No. 6583-247-CIP-15) 5 pages
	61	Notice of Allowance for U.S. Patent Application No. 13/679,887, mailed Nov. 13, 2014 (Attorney's Ref. No. 6583-316) 5 pages

Examiner Signature	/Jeffery Williams/	Date Considered	05/30/2015

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [2] Applicant's unique citation designation number (optional). [3] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [4] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [5] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [6] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [7] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINE THROUGH. /J.W./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13679476	RICCI ET AL.
	Examiner	**Art Unit**
	JEFFERY WILLIAMS	2437

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

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

CLAIM		DATE								
Final	Original	10/07/2013	05/12/2014	01/11/2015	05/30/2015					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	-	-	-					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	-					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	-	-	-					
	20	✓	-	-	-					
	21		✓	✓	-					
	22		✓	✓	-					
	23		✓	✓	-					
	24				✓					
	25				✓					
	26				✓					
	27				✓					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**INTERVIEW SUMMARY**
Atty. File No.: 6583-247	)	Electronically Submitted
Entitled: "Vehicle Middleware"	)	

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

Dear Commissioner:

On July 21, 2015, Examiner Williams and the undersigned held a brief telephone conversation to discuss the above-identified application. During the conversation, *inter alia*, the pending final Office Action mailed June 4, 2015 was discussed. The undersigned presented further distinctions between the invention as claimed and U.S. Patent Application Publication No. 2003/0158638 to Yakes. It was agreed that an Amendment After Final under the After Final Consideration Pilot Program 2.0 would be filed by the required deadline of August 4, 2015. No final decision was reached regarding allowance of any pending claims.

The undersigned thanks Examiner Williams for his time and guidance.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Richard E. Zelenka/

Richard E. Zelenka
Reg. No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: July 21, 2015

Electronic Acknowledgement Receipt

EFS ID:	22980572
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	21-JUL-2015
Filing Date:	16-NOV-2012
Time Stamp:	17:19:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	Applicant_Interview_Summary_21July2015.pdf	77634 58c1dda0ebeb78f0d42ccba13c8d8ea52587eaa3	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	77634

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**AMENDMENT AND RESPONSE AFTER FINAL**
Atty. File No.: 6583-247	)	
Entitled: "Vehicle Middleware"	)	Electronically Submitted

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

Dear Commissioner:

In response to the final Office Action with a mailing date of June 4, 2015 for the above-referenced application, please enter the following Amendment and Response. Applicant further requests consideration under the After Final Consideration Pilot program 2.0 of the accompanying response under 37 CFR 1.116. A Form PTO/SB/434 is included with this Amendment and Response. While Applicants believe no fees are due with the filing of this Amendment and Response, the undersigned hereby authorizes the Commissioner to charge any fees deemed necessary to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on **page 2** of this paper.

Remarks/Arguments begin on **page 9** of this paper.

Ford Ex. 1161 Page 487 of 520

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A vehicle, comprising:

a non-transient, tangible computer readable memory;

a computational module selector to identify and select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected task, operation, and/or function having performance requirements, wherein each of the plural computation modules has processing capabilities and operating system capabilities; wherein at least a pair of the plural computation modules has non-identical processing capabilities wherein one of the pair has a cellular capability and the other of the pair does not have a cellular capability ~~and/or operating system capabilities~~;

a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol;

wherein the computational module selector selects a computational module from among the plural computation modules that has processing capabilities ~~and operating system capabilities~~ that satisfy the performance requirements of the selected task, operation, and/or function;

wherein each of the computational module selector, computation modules and the network selector module are stored in the non-transient, tangible computer readable memory.

2. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a plurality of processing modules, a first processing module being in an active

Ford Ex. 1161 Page 488 of 520

mode whereby the first processing module is in primary control of at least most vehicle functions and a second processing module being in a standby mode whereby the second processing module is ready to assume primary control of at least most vehicle functions, wherein the first and second processing modules are in wireless communication with one another, and wherein a state of the second processing module is maintained substantially in synchronicity with a state of the first processing module to a enable a stateful failover from the first processing module to the second processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

3. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises an arbitration module to arbitrate hand-off conflicts between duplicated first and second processing modules and wherein the arbitration module selects one of the first and second processing modules to currently possess and/or own a token, the token indicating which processing module is an active processing module and/or which processing module is a standby processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

4. (Previously Presented) The vehicle of claim 3, wherein the vehicle further comprises a health check module to determine a corresponding state of health of each of the duplicated first and second processing modules to perform at least one of critical and non-critical tasks, functions, and operations and wherein the health check module performs a check and/or test, in response to an internally generated interrupt and/or request to determine a selected processing module's ability to perform critical and/or non-critical vehicle tasks, functions, and/or operations, assign a score to the selected processing module based on the check and/or test results, and compare the score to one or more thresholds and/or to a score of a different processing module to determine a state of health to determine a state of health of the selected processing module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

5. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a displayed object movement module to move displayed objects from a source

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input/output system to a target input/output system, the source and target input/output systems corresponding to different vehicle occupants and wherein the displayed object movement module selects the target input/output system from among plural input/output systems on board the vehicle based on input from a user of the source input/output system, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

6. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a media filter module to apply a selected rule to filter third party sourced signals received by a vehicle processing module for presentation to a vehicle occupant via a corresponding input/output system and wherein the selected rule is one or more of a whitelist, blacklist, user preference, sensed occupant context, and/or governing federal, state, provincial, and/or local law and/or regulation applicable to a current sensed spatial location of the vehicle, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

7. (Canceled)

8. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a diagnostic module to receive a warning and/or error signal from a vehicle component and select a destination for the signal, the possible destinations including a vehicle input/output system to present the warning and/or error to a vehicle occupant, an emergency service provider, an emergency responder, and a remotely located diagnostic service to diagnose a cause of the warning and/or error signal and wherein the diagnostic module provides the warning and/or error signal to the vehicle occupant and interactively communicates a likely cause of the warning and/or error signal to the occupant and receives a command from the occupant to contact one or more of an emergency service provider, an emergency responder, and a remotely located diagnostic service, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

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9. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a remote control module to receive a request from a remote source to command a vehicle function, authenticate the requestor, and, when successfully authenticated and when privileged to request the performance of the vehicle function, execute or cause execution of the request and wherein the remote control module is associated with one or more of the vehicle owner, a law enforcement authority, a lender associated with a loan having the vehicle as collateral, and a vehicle manufacturer and wherein the requested vehicle function is executed or caused to be executed notwithstanding a contrary command from the vehicle operator, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

10. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a media controller module to receive a media stream from a remote node, identify which of a plurality of vehicle input/output systems are disabled due to operator command and/or as a result of a rule, and, when enabled, provide the media stream to an input/output system associated with an associated vehicle occupant and wherein the media controller module, in a dependent mode, provides common content synchronously to each of the input/output systems and, in an independent mode, provides different content to different ones of the input/output systems, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

11. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises an installation supervisor module to determine, for a newly installed software and/or hardware and/or other component, whether the newly installed component satisfies defined functional and/or source or reuse requirements and/or restrictions for the component and/or license restrictions, and, when satisfied, create data structures in the component and/or a memory in the vehicle to bind the component to the current vehicle and thereby prevent the component from communicating with a processing module in a different vehicle and wherein the newly installed software and/or hardware and/or other component is one or more of an on-board sensor, a processing module or component

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thereof, a software application, a circuit board, an expansion module or component thereof, a critical or non-critical device, and a cellular upgrade module, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

12. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise one or more vehicle processing devices and one or more occupant computational devices, the one or more occupant computational devices comprising one or more of a mobile phone, personal digital assistant, tablet computer, and laptop computer.

13. (Previously Presented) The vehicle of claim 1, wherein the plural computational modules comprise multiple software applications corresponding to different versions, releases, and/or vendors of a common type of software application.

14. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a network security module to isolate a component encountering a security breach and/or isolate a primary processing module from one or more other components in a local vehicle network and wherein the network security module filters and/or prohibits communications between the isolated one of the component and/or processing module with other network components, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

15. (Canceled)

16. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a network controller module to cache automatically streaming media in response to a vehicle state change, function, and/or operation and wherein the network controller module caches automatically streaming media in response to the vehicle state changing from a parked state to an unparked state, wherein the computational module selector

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continuously checks if excess processing power is available from at least among the plural computation modules, an expansion module and an external computational device, whereby the selected task, operation and/or function is off-loaded, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

17. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a unified communications presence reporting module to determine whether a vehicle occupant is present and/or by what communication channel to contact the occupant based on a requirement of a law applicable to a current location of the vehicle and wherein the unified communications presence reporting module determines that the vehicle occupant is the operator of the vehicle and that the vehicle operator is not present by a selected communication channel when the vehicle is in motion, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

18. (Previously Presented) The vehicle of claim 1, wherein the vehicle further comprises a social networking module to enable processing modules of different vehicles to wirelessly connect to exchange vehicle information, wherein each of the afore-mentioned modules are stored in a non-transient, tangible computer readable memory.

19. – 20. (Canceled)

21. – 23. (Canceled)

24. (Previously Presented) The vehicle of claim 1, wherein at least one of the plural computation modules is a software application of an on board or portable device located physically within the vehicle.

25. (Previously Presented) The vehicle of claim 24, wherein the selected task, operation, and/or function is running a software application, wherein the computational

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module selector selects a computational module from among the plural computation modules based on operating system capabilities that satisfy the software application operating system performance requirements.

26. (Previously Presented) The vehicle of claim 25, wherein the vehicle further comprises a display, wherein the software application is displayed on the display.

27. (Previously Presented) The vehicle of claim 26, wherein the display is configured to allow the user to interact with the software application.

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REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed June 4, 2015, claims 1-6, 8-14, 16-18, and 24-27 were pending in the application. Claim 1 is amended. Support for the claim amendments is found at least at [0146] and [0147] of the application as published. Claims 7, 15, 19, 20 and 21-23 were previously canceled. There are no new claims. No new matter has been added. Claim 1 is an independent claim.

Therefore, claims 1-6, 8-14, 16-18 and 24-27 are present for examination. Applicants respectfully request reconsideration of this application as amended.

Objection to the Specification

The specification is objected to for failure to provide antecedent basis for various recitations of the claims, in particular regarding operating system capabilities. Without admission as to the validity of these objections and solely to facilitate prosecution, Applicant has amended independent claim 1 to delete the contested features.

As such, Applicant requests the objection to the specification be withdrawn.

Rejections Under 35 U.S.C. §112

Claims 1-6, 8-14, 16-18, and 24-27 are rejected under 35 U.S.C. §112. Specifically, the Examiner asserts that reference to "operating system capabilities" in Claim 1 is ambiguous. Without admission as to the validity of this rejection and solely to facilitate prosecution, independent claim 1 has been amended to delete the contested features.

As such, Applicant requests the §112 rejection of Claims 1-6, 8-14, 16-18, and 24-27 be withdrawn.

Rejections Under 35 U.S.C. §103

Claims 1-5, 8-14, and 24-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. Publ. No. 2003/0158638 to Yakes ("Yakes"). Claims 6 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yakes in view of U.S. Pat. Publ. No. 2012/0110356 to Yousefi ("Yousefi"). Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over Yakes in view of U.S. Pat. Publ. No. 2007/0156317 to Breed ("Breed").

In order for a rejection under 35 U.S.C. § 102 to be proper, each and every claim element must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Applicants respectfully request reconsideration because the Office Action has failed to show a *prima facie* case of anticipation under § 102. Indeed, "for anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly." See MPEP §706.2, Original Eighth Edition, August 2001, Latest Revision July 2010. Adiga fails to teach each and every aspect of the claims.

To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Eighth Edition, August 2001, Latest Revision August 2012.

However, all of the elements of the rejected claims cannot be found in the cited references, whether those references are considered alone or in combination.

For example, at least the following features of amended claim 1 are not disclosed or suggested by the cited references, i.e. a vehicle comprising: 1) a computational module selector to identify and select a computational module from among plural computation modules in communication with the computational module selector to perform a selected task, operation, and/or function, the selected task, operation, and/or function having performance requirements, wherein each of the plural computation modules has processing capabilities and operating system capabilities; wherein at least a pair of the plural computation modules has non-identical processing capabilities wherein one of the pair has a cellular capability and the other of the pair does not have a cellular

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capability; and 2) a network selector module to select one of plural communication networks local to the vehicle for transmitting a selected signal and wherein the network selector module selects one of plural communication networks local to the vehicle for transmitting a selected signal based on one or more of network/node status, signal/noise ratio, type of signal, available and/or unavailable bandwidth, network performance parameter(s), and quality of service, wherein the network selector module configures the selected signal in accordance with the selected network's transmission protocol; wherein the computational module selector selects a computational module from among the plural computation modules that has processing capabilities that satisfy the performance requirements of the selected task, operation, and/or function.

At best, primary reference Yakes discloses, at [0005], an "electric traction vehicle that can be updated and upgraded as new technology and components become available." The Yakes vehicle, and its associated systems, is designed for commonality and redundancy, with standardized software and hardware. That is, the Yakes "interface modules 1420 each include a microprocessor 1815 that is sufficiently powerful to allow each interface module to serve as the central control unit. The interface modules are identically programmed." *See* [0244].

Furthermore, the Yakes "interface modules are both physically and functionally interchangeable because the interface modules are capable of being plugged in at any slot on the network, and are capable of performing any functions that are required at that slot on the network. *See* [0244]. Such an "arrangement is highly advantageous. Because all of the interface modules 1420 are identically programmed and store the same information, the interface modules are physically and functionally interchangeable within a given class of vehicles. Thus, if an interface module 1420 on one variant module is rendered inoperative, but the variant module is otherwise operational, the inoperative interface module can be replaced with an interface module scavenged from another inoperative vehicle." *See* [0246].

This is opposite, and a teaching-away, from amended Claim 1, which, *inter alia*, requires "wherein at least a pair of the plural computation modules has non-identical processing capabilities wherein one of the pair has a cellular capability and the other of the pair does not have a cellular capability."

Primary reference Yakes and secondary reference Yousefi provide additional teach aways from some features. For example, Yakes requires two on more communication networks, e.g. "each of the communication networks 1661-1663 may be formed of two or more communication networks to provide redundancy within each control system." *See* [0236]. In contrast, amended Claim 1 requires a "network selector module to select one of plural communication networks."

Accordingly, for at least the reasons above, Applicants submit that the rejections of Claims 1-6 and 8-14, 16-18 and 24-27 under 35 U.S.C. § 103 should be reconsidered and withdrawn.

Conclusion

Based on the foregoing, Applicants believe all pending claims are in condition for allowance. Applicants do not acquiesce to any objection, rejection, or argument not specifically addressed herein. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: */Richard E. Zelenka/*

Richard E. Zelenka
Registration No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: July 28, 2015

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Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
6583-247	13/679,476	November 16, 2012
First Named Inventor:	**Title:**	
Christopher Ricci	Vehicle Middleware	

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:
    - Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
    - The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
        - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
        - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
            - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
            - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	Date
/Richard E. Zelenka/	July 28, 2015
Name (Print/Typed) Richard E. Zelenka	Practitioner Registration No. 63179

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

☐ * Total of _____ forms are submitted.

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

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	23041837
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	28-JUL-2015
Filing Date:	16-NOV-2012
Time Stamp:	12:00:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment_Response_28July 2015.pdf	138601 a0607cdd8fb12069e5b299a4af017efa02abd5d3	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	12

Warnings:					
Information:					
2	After Final Consideration Program Request	SB_434_After_Final_Pilot_Program_Request.pdf	226024 71917aeb5548a0d238c14bd52cdccc0e3ecd72f4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	364625		

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

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

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/679,476	Filing Date 11/16/2012	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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

APPLICATION AS AMENDED – PART II

AMENDMENT **07/28/2015**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

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

LIE
/DONNA 1. SMALLS LOGAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	
Atty. File No.: 6583-247	)	**INTERVIEW SUMMARY**
Entitled: "Vehicle Middleware"	)	Electronically Submitted

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

Dear Commissioner:

On August 7, 2015, Examiner Williams and the undersigned held a brief telephone conversation to discuss the above-identified application. During the conversation, *inter alia*, Applicant's Amendment and Response to final Office Action, filed on July 28, 2015 under the After Final Consideration Pilot program 2.0, was discussed. The Examiner provided that the amendments to independent Claim 1 require further searching and/or do not overcome the prior art of record. The undersigned provided that a Request for Continued Examination may be filed to continue prosecution.

The undersigned thanks Examiner Williams for his time and guidance.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Richard E. Zelenka/

Richard E. Zelenka
Reg. No. 63,179
1560 Broadway, Suite 1200
Denver, Colorado 80202
303-863-9700

Date: August 7, 2015

Electronic Acknowledgement Receipt

EFS ID:	23150652
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Richard Eric Zelenka/Ginger Bovenkamp
Filer Authorized By:	Richard Eric Zelenka
Attorney Docket Number:	6583-247
Receipt Date:	07-AUG-2015
Filing Date:	16-NOV-2012
Time Stamp:	15:45:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	Applicant_Interview_Summary_7August2015.pdf	77338 fd19df6fe185ee9669818a670709b1a1a4074cf3	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	77338

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

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	6583-247	2650

111285 7590 08/17/2015

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER
WILLIAMS, JEFFERY L

ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
08/17/2015	ELECTRONIC

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

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

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

flexpatents@sheridanross.com
edocket@sheridanross.com

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *7 August 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Yakes*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The examiner suggested that Yakes would teach both software and hardware "computational modules", wherein at least one hardware module is structurally different and would comprise cellular capability (e.g. see Yakes, fig. 35). No agreement was reached as to allowability.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 13/679,476	**Applicant(s)** RICCI ET AL.	
	Examiner JEFFERY WILLIAMS	**Art Unit** 2495	**AIA (First Inventor to File) Status** No

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

THE REPLY FILED 28 July 2015 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: Please see attached interview summary.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☒ Other: see attached PTO-2323.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed: .
    Claim(s) objected to: .
    Claim(s) rejected: 1-6,8-14,16-18,24-27.
    Claim(s) withdrawn from consideration: .

/JEFFERY WILLIAMS/
Primary Examiner, Art Unit 2495

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/679,476	RICCI ET AL.	
	Examiner	Art Unit	
	JEFFERY WILLIAMS	2495	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JEFFERY WILLIAMS*. (3)_____.

(2) *RICHARD ZELENKA*. (4)_____.

Date of Interview: *7 August 2015*.

Type: ☒ Telephonic ☐ Video Conference
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(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

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☒ Attachment

/JEFFERY WILLIAMS/ Primary Examiner, Art Unit 2495	

AFCP 2.0 Decision	Application No.	Applicant(s)
	13/679,476	RICCI ET AL.
	Examiner	Art Unit
	JEFFERY WILLIAMS	2495

This is in response to the After Final Consideration Pilot request filed 28 July 2015.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

   ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.

   ☐ A non-broadening amendment to at least one independent claim was not submitted.

   ☐ A proper AFCP 2.0 request was submitted in response to the most recent final rejection.

   ☐ Other:

2. **Proper Request**

   A. After final amendment submitted with the request will not be treated under AFCP 2.0.
   The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

   ☐ The after final amendment will be treated under pre-pilot procedure.

   B. Updated search and/or completed additional consideration.
   The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

   ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.

   ☒ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.

   ☐ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.

   ☐ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.

   ☐ 5. Other:

   Examiner Note: Please attach an interview summary when necessary as described above.

DO NOT ENTER 08/07/2015

/J.W./

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2495
Christopher Ricci	)	Confirmation No.: 2650
Serial No.: 13/679,476	)	Examiner: Jeffery Williams
Filed: November 16, 2012	)	**AMENDMENT AND RESPONSE AFTER FINAL**
Atty. File No.: 6583-247	)	
Entitled: "Vehicle Middleware"	)	Electronically Submitted

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

Dear Commissioner:

In response to the final Office Action with a mailing date of June 4, 2015 for the above-referenced application, please enter the following Amendment and Response. Applicant further requests consideration under the After Final Consideration Pilot program 2.0 of the accompanying response under 37 CFR 1.116. A Form PTO/SB/434 is included with this Amendment and Response. While Applicants believe no fees are due with the filing of this Amendment and Response, the undersigned hereby authorizes the Commissioner to charge any fees deemed necessary to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on **page 2** of this paper.

Remarks/Arguments begin on **page 9** of this paper.

Ford Ex. 1161 Page 512 of 520

PTO/AIA/22 (03-13)
Approved for use through 7/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

Docket Number (Optional): 8283-247

Application Number: 13/679,476

Filed: November 16, 2012

For: Vehicle Middleware

Art Unit: 2495

Examiner: WILLIAMS, JEFFERY L

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	Micro Entity Fee	
☑ One month (37 CFR 1.17(a)(1))	$200	$100	$50	$ 200
☐ Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☐ Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$
☐ Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐ Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☐ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 19-1970.

☑ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant.

☑ attorney or agent of record. Registration number 54544.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Tadd F. Wilson/ — Signature

October 5, 2015 — Date

Tadd F. Wilson — Typed or printed name

303-863-9700 — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

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

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

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

Electronic Patent Application Fee Transmittal

Application Number:	13679476
Filing Date:	16-Nov-2012
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Filer:	Tadd Fjelp Wilson/Amy Duarte
Attorney Docket Number:	8283-247

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	200	200
Miscellaneous:				
			Total in USD ($)	**200**

Electronic Acknowledgement Receipt

EFS ID:	23695703
Application Number:	13679476
International Application Number:	
Confirmation Number:	2650
Title of Invention:	VEHICLE MIDDLEWARE
First Named Inventor/Applicant Name:	Christopher P. Ricci
Customer Number:	111285
Filer:	Tadd Fjelp Wilson/Amy Duarte
Filer Authorized By:	Tadd Fjelp Wilson
Attorney Docket Number:	8283-247
Receipt Date:	05-OCT-2015
Filing Date:	16-NOV-2012
Time Stamp:	17:45:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$200
RAM confirmation Number	4940
Deposit Account	191970
Authorized User	WILSON, TADD

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	EOT-1mo.pdf	163061 4bcd5327af8a20e1bc9b562621c22366e4763631	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30687 3bf8208bc3601011cc45f396fa340e976cad4906	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	193748		

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

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/679,476	11/16/2012	Christopher P. Ricci	8283-247	2650

111285 7590 01/13/2016

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER
WILLIAMS, JEFFERY L

ART UNIT	PAPER NUMBER
2495	

NOTIFICATION DATE	DELIVERY MODE
01/13/2016	ELECTRONIC

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

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

flexpatents@sheridanross.com
edocket@sheridanross.com

Notice of Abandonment	Application No.	Applicant(s)
	13/679,476	RICCI ET AL.
	Examiner	Art Unit
	JEFFERY WILLIAMS	2495

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

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on *04 June 2015*.
   (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
   (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 to the final rejection.
   (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) if this is utility or plant application, a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. Note that RCEs are not permitted in design applications.)
   (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
   (d) ☒ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
   (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
   (b) ☐ The submitted fee of $_____ is insufficient. A balance of $_____ is due.
   The issue fee required by 37 CFR 1.18 is $_____. The publication fee, if required by 37 CFR 1.18(d), is $_____.
   (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
   (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
   (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record or other party authorized under 37 CFR 1.33(b). See 37 CFR 1.138(b).

5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34) upon the filing of a continuing application.

6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☐ The reason(s) below:

/JEFFERY WILLIAMS/
Primary Examiner, Art Unit 2495

Petitions to revive under 37 CFR 1.137, or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.