

US20130069761A1 *	2011-09-21	2013-03-21	Delphi Technologies, Inc.	System and method to operate an extended range keyless entry system to recognize a keyless entry transmitter
US8977408B1	2011-09-23	2015-03-10	Cellco Partnership	Vehicle settings profile system
JP5996872B2 *	2012-01-11	2016-09-21	株式会社東海理化電機製作所	Lending system
EP2808204B1	2012-01-25	2017-12-13	Toyota Jidosha Kabushiki Kaisha	Vehicle remote operation information provision device, vehicle-mounted remote operation information acquisition device, and vehicle remote operation system comprising these devices
US20130321178A1	2012-05-29	2013-12-05	Akhtar Jameel	Shared vehicle rental system including transmission of reservation information and targeted advertising
US8943187B1	2012-08-30	2015-01-27	Microstrategy Incorporated	Managing electronic keys
US8880239B2	2012-11-07	2014-11-04	Ford Global Technologies, Llc	Credential check and authorization solution for personal vehicle rental
US9818151B2 *	2012-12-04	2017-11-14	I.D. Systems, Inc.	Remote vehicle rental systems and methods
US9002536B2	2013-03-14	2015-04-07	Ford Global Technologies, Llc	Key fob security copy to a mobile phone
US9276737B2 *	2013-03-14	2016-03-01	General Motors Llc	Securing a command path between a vehicle and personal wireless device
EP2891589B1 *	2014-01-06	2024-09-25	Harman International Industries, Incorporated	Automatic driver identification
US10115256B2 *	2014-04-07	2018-10-30	Videx, Inc.	Remote administration of an electronic key to facilitate use by authorized persons
DE102014224080A1 *	2014-11-26	2016-06-02	Robert Bosch Gmbh	Method for controlling access to a vehicle
DE102014224481B4 *	2014-12-01	2023-08-24	Bayerische Motoren Werke Aktiengesellschaft	Remote control of vehicle functionalities using a mobile device
US10412088B2 *	2015-11-09	2019-09-10	Silvercar, Inc.	Vehicle access systems and methods
US10081334B1 *	2017-05-17	2018-09-25	Alpine Electronics, Inc.	Method and system for unlocking vehicle with use of morse code
US10217304B2 *	2017-06-12	2019-02-26	Ivtes Ltd.	Intelligent vehicular electronic key system
KR102427982B1 *	2017-06-27	2022-08-02	현대자동차주식회사	Vehicle system and control method thereof
US10589719B1 *	2019-05-30	2020-03-17	Hyundai Autoever	Method for managing digital key of mobile device for vehicle-sharing and key server using the same
CN112776753B *	2019-11-07	2024-08-09	现代自动车株式会社	System and method for networked vehicle control
US12024154B2 *	2021-01-14	2024-07-02	Toyota Motor Engineering & Manufacturing North America, Inc.	Remotely control in-cabin features

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US11355009B1	2014-05-29	2022-06-07	Rideshare Displays, Inc.	Vehicle identification system
US11386781B1	2014-05-29	2022-07-12	Rideshare Displays, Inc.	Vehicle identification system and method
DE102024101936A1	2024-01-24	2025-07-24	Dr. Ing. H.C. F. Porsche Aktiengesellschaft	vehicle
US12470426B2	2022-04-04	2025-11-11	Ford Global Technologies, Llc	Vehicle variant-aware services
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US9365188B1	2011-04-22	2016-06-14	Angel A. Penilla	Methods and systems for using cloud services to assign e-keys to access vehicles
US10217160B2 *	2012-04-22	2019-02-26	Emerging Automotive, Llc	Methods and systems for processing charge availability and route paths for obtaining charge for electric vehicles
US8947202B2 *	2011-10-20	2015-02-03	Apple Inc.	Accessing a vehicle using portable devices
US8943187B1 *	2012-08-30	2015-01-27	Microstrategy Incorporated	Managing electronic keys
US9608970B1	2014-01-16	2017-03-28	Microstrategy Incorporated	Sharing keys

WO2015142002A1 *	2014-03-15	2015-09-24	Samsung Electronics Co., Ltd.	Method and device for sharing functions of smart key
DE102014107242A1 *	2014-05-22	2015-11-26	Huf Hülbeck & Fürst GmbH & Co. Kg	System and method for access control
US9773184B1 *	2014-06-27	2017-09-26	Blinker, Inc.	Method and apparatus for receiving a broadcast radio service offer from an image
US9589201B1	2014-06-27	2017-03-07	Blinker, Inc.	Method and apparatus for recovering a vehicle value from an image
US9594971B1	2014-06-27	2017-03-14	Blinker, Inc.	Method and apparatus for receiving listings of similar vehicles from an image
US9779318B1 *	2014-06-27	2017-10-03	Blinker, Inc.	Method and apparatus for verifying vehicle ownership from an image
US9754171B1 *	2014-06-27	2017-09-05	Blinker, Inc.	Method and apparatus for receiving vehicle information from an image and posting the vehicle information to a website
US10540564B2	2014-06-27	2020-01-21	Blinker, Inc.	Method and apparatus for identifying vehicle information from an image
US9818154B1	2014-06-27	2017-11-14	Blinker, Inc.	System and method for electronic processing of vehicle transactions based on image detection of vehicle license plate
US10572758B1	2014-06-27	2020-02-25	Blinker, Inc.	Method and apparatus for receiving a financing offer from an image
US10579892B1	2014-06-27	2020-03-03	Blinker, Inc.	Method and apparatus for recovering license plate information from an image
US9589202B1	2014-06-27	2017-03-07	Blinker, Inc.	Method and apparatus for receiving an insurance quote from an image
US10515285B2	2014-06-27	2019-12-24	Blinker, Inc.	Method and apparatus for blocking information from an image
US9892337B1 *	2014-06-27	2018-02-13	Blinker, Inc.	Method and apparatus for receiving a refinancing offer from an image
US9563814B1	2014-06-27	2017-02-07	Blinker, Inc.	Method and apparatus for recovering a vehicle identification number from an image
US9558419B1	2014-06-27	2017-01-31	Blinker, Inc.	Method and apparatus for receiving a location of a vehicle service center from an image
US9760776B1 *	2014-06-27	2017-09-12	Blinker, Inc.	Method and apparatus for obtaining a vehicle history report from an image
US10733471B1	2014-06-27	2020-08-04	Blinker, Inc.	Method and apparatus for receiving recall information from an image
US10867327B1 *	2014-06-27	2020-12-15	Blinker, Inc.	System and method for electronic processing of vehicle transactions based on image detection of vehicle license plate
US9600949B2	2014-07-30	2017-03-21	Master Lock Company Llc	Wireless key management for authentication
DE102014219407A1 *	2014-09-25	2016-03-31	Volkswagen Aktiengesellschaft	Diagnostic procedures and survey methods for vehicles
US10136246B2	2015-07-21	2018-11-20	Vitanet Japan, Inc.	Selective pairing of wireless devices using shared keys
DE102015213934B4 *	2015-07-23	2020-03-12	Volkswagen Aktiengesellschaft	Deactivating the activation of a function by radio for a vehicle
US20170032303A1 *	2015-07-30	2017-02-02	Espresa, Inc.	Platform for boarding a vendor at a workplace
US10412088B2	2015-11-09	2019-09-10	Silvercar, Inc.	Vehicle access systems and methods
US20170136988A1 *	2015-11-12	2017-05-18	Ford Global Technologies, Llc	Valet parking security system for a motor vehicle
US10284653B2 *	2015-11-13	2019-05-07	Ford Global Technolgies, Llc	Method and apparatus for utilizing NFC to establish a secure connection
DE102015015627B3 *	2015-12-03	2017-03-16	Audi Ag	Method for transmitting a function command between a motor vehicle and an off-vehicle device and interface device and system
WO2017107982A1 *	2015-12-24	2017-06-29	Beijing Didi Infinity Technology And Development Co., Ltd.	Systems and methods for vehicle management
US9736289B2	2015-12-28	2017-08-15	Thunder Power New Energy Vehicle Development Company Limited	Platform for wireless interaction with vehicle
JP2017154689A *	2016-03-04	2017-09-07	オムロンオートモーティブエレクトロニクス株式会社	Vehicle control system

JP2017172563A *	2016-03-25	2017-09-28	株式会社オートネットワーク技術研究所	On-vehicle control system and portable machine
DE102016206571A1 *	2016-04-19	2017-10-19	Volkswagen Aktiengesellschaft	Electronic vehicle key and communication system
US10501054B2 *	2016-06-30	2019-12-10	Ford Global Technologies, Llc	On-demand driver systems and methods
US9688247B1 *	2016-08-03	2017-06-27	Ford Global Technologies, Llc	Method and apparatus for digital temporary vehicle key utilization
US10468919B2 *	2016-08-24	2019-11-05	Keyssa Systems, Inc.	Charging ports with integrated contactless communication units
US10019621B2 *	2016-09-14	2018-07-10	General Motors Llc	Identifying a vehicle using a mobile device
US10523632B2	2016-09-19	2019-12-31	Verisign, Inc.	GTLD domain name registries RDAP architecture
US10798093B2 *	2016-09-19	2020-10-06	Verisign, Inc.	GTLD domain name registries RDAP architecture
US11651637B2 *	2016-09-21	2023-05-16	Equipmentsshare.Com Inc	Method, system and apparatus for equipment monitoring and access control
JP6373323B2 *	2016-09-30	2018-08-15	本田技研工業株式会社	MOBILE BODY CONTROL DEVICE AND MOBILE BODY
US11151825B1	2020-10-14	2021-10-19	1Ahead Technologies	Artificial intelligence entry management device, system and method of using same
US11403901B2	2020-10-14	2022-08-02	1Ahead Technologies	Entry management system
US11625966B2	2020-10-14	2023-04-11	1Ahead Technologies	Access management system
US11398120B2	2020-10-14	2022-07-26	1Ahead Technologies	Security surveillance and entry management system
US11393269B2	2020-10-14	2022-07-19	1Ahead Technologies	Security surveillance and entry management system
US11303856B1	2020-10-14	2022-04-12	1Ahead Technologies	Security entry and delivery system and method of using same
US11468723B1	2020-10-14	2022-10-11	1Ahead Technologies	Access management system
US11436882B1	2020-10-14	2022-09-06	1Ahead Technologies	Security surveillance and entry management system
US11854328B2	2020-10-14	2023-12-26	1Ahead Technologies	Access management system
US11756357B2	2020-10-14	2023-09-12	1Ahead Technologies	Access management system
WO2018081583A1 *	2016-10-27	2018-05-03	Infinitekey, Inc.	System and method for authenticating and authorizing devices
US10137898B2 *	2016-11-03	2018-11-27	Ford Global Technologies, Llc	Vehicle operator notification system
US10189443B2 *	2016-11-10	2019-01-29	GM Global Technology Operations LLC	Virtual key for vehicle servicing
US10068388B2	2016-11-10	2018-09-04	Ford Global Technologies Llc	Automated system for suggesting wiper replacement
US10040425B2 *	2016-11-10	2018-08-07	Ford Global Technologies, Llc	System for detecting windshield wiper noise and related methods
US20180137437A1 *	2016-11-15	2018-05-17	Wai Ling Chan	Payment systems for multiple shared drivers
US10202103B2	2016-12-29	2019-02-12	Intel Corporation	Multi-modal context based vehicle theft prevention
KR20180086118A *	2017-01-20	2018-07-30	삼성전자주식회사	Apparatus and method for providing and managing security information in communication system
US10805287B2	2017-01-20	2020-10-13	Samsung Electronics Co., Ltd	Apparatus and method for providing and managing security information in communication system
IT201700007911A1 *	2017-01-25	2018-07-25	Prinoth Spa	TRACKED VEHICLE AND FLEET OF TRACKED VEHICLES
DE102017202024B4 *	2017-02-09	2019-02-28	Audi Ag	A method for coupling a portable user device with a mobile device installed in a motor vehicle and server device
KR102689212B1 *	2017-02-13	2024-07-29	삼성전자 주식회사	Method and apparatus for setting function customized for individual users using smart car key
WO2018156305A2 *	2017-02-24	2018-08-30	Gentex Corporation	Two factor biometric authentication for auto
US9767629B1 *	2017-03-07	2017-09-19	Nxp B.V.	System and method for controlling access to vehicle
US10083556B1 *	2017-03-16	2018-09-25	Robert Bosch Gmbh	Intelligent access system and method for a vehicle
US10223849B2 *	2017-03-16	2019-03-05	Robert Bosch Gmbh	Intelligent wireless access system and method for a vehicle
US10444750B2 *	2017-03-20	2019-10-15	Ford Global Technologies, Llc	Rideshare vehicle connectivity to passenger devices

US10896562B2 *	2017-04-03	2021-01-19	1Ahead Technologies	Secured delivery system and method of using same
US20180326947A1 *	2017-05-15	2018-11-15	GM Global Technology Operations LLC	Operating a key fob in a car sharing system
WO2018222412A1 *	2017-05-31	2018-12-06	Walmart Apollo, Llc	Systems and methods to enable robotic node participation in peer-to-peer commercial transactions
CN107230164A *	2017-06-09	2017-10-03	清华大学	A kind of management method and system of self-service electricity-selling terminal
KR102363280B1 *	2017-06-23	2022-02-16	삼성전자주식회사	Apparatus and method for providing and managing security information in communication system
US10075576B1 *	2017-07-20	2018-09-11	Caterpillar Inc.	Starting a machine through a mobile device
US10111272B1	2017-08-01	2018-10-23	At&T Intellectual Property I, L.P.	Temporary bluetooth pairing
WO2019034226A1 *	2017-08-14	2019-02-21	Continental Automotive Gmbh	A cloud-based system and method for managing vehicle sharing services
TWI663084B *	2017-08-22	2019-06-21	力巨人有限公司	Business method of combining vehicle electronic anti-theft system with insurance business
CN107776536A *	2017-09-01	2018-03-09	北汽福田汽车股份有限公司	The burglary-resisting system of vehicle, vehicle-mounted interactive terminal, vehicle and Cloud Server
GB2566506A *	2017-09-15	2019-03-20	De Innovation Lab Ltd	Vehicle controlling system and method of operation thereof
JP6717793B2 *	2017-10-10	2020-07-08	株式会社東海理化電機製作所	Car sharing system and car sharing device
US10947945B2 *	2017-10-20	2021-03-16	Lee J. Santoro	Methods and systems for control of electric components
JP7221589B2	2017-10-24	2023-02-14	トヨタ自動車株式会社	Key information management device, key information management method, key information management program
JP6635103B2 *	2017-10-24	2020-01-22	トヨタ自動車株式会社	Information processing apparatus, information processing method, and program
FR3072930A1 *	2017-10-27	2019-05-03	Psa Automobiles Sa	METHOD AND DEVICE FOR ASSISTING THE CONFIGURATION OF A VEHICLE
US10334405B2 *	2017-10-31	2019-06-25	Toyota Jidosha Kabushiki Kaisha	Identifying a geographic location for a stationary micro-vehicular cloud
WO2019087349A1 *	2017-11-02	2019-05-09	株式会社 L e i s	Financial transaction control system, application therefor, financial transaction method using same, and financial transaction control method
JP6885304B2	2017-11-13	2021-06-09	トヨタ自動車株式会社	Key information sharing system, distribution device, program
JP6958273B2 *	2017-11-16	2021-11-02	トヨタ自動車株式会社	Driverless transportation system
US10507796B2 *	2017-11-21	2019-12-17	Ford Global Technologies, Llc	Method and apparatus for wireless valet key configuration and relay
JP6936121B2 *	2017-11-21	2021-09-15	トヨタ自動車株式会社	Rent rate setting device, rental rate setting method and rental rate setting system
KR101988263B1 *	2017-12-15	2019-06-12	엘지전자 주식회사	Vehicle control device mounted on vehicle and method for controlling the vehicle
CN108108598A *	2017-12-15	2018-06-01	蔚来汽车有限公司	Vehicle authorization management method and system
WO2019114267A1 *	2017-12-17	2019-06-20	Beijing Didi Infinity Technology And Development Co., Ltd.	Item return devices and items using the same
WO2019140529A1	2018-01-19	2019-07-25	Konnex Enterprises Inc.	Systems and methods for controlling access to a secured space
US11551158B1 *	2018-02-06	2023-01-10	Ryan Don Hinkins	Personalized digital travel advisor system and method of use
DE102018202173A1 *	2018-02-13	2019-08-14	Volkswagen Aktiengesellschaft	Method and device for authenticating a user of a vehicle
KR102501245B1 *	2018-02-14	2023-02-17	삼성전자주식회사	Method and electronic device for providing key
CN108390757A *	2018-03-27	2018-08-10	深圳市图灵奇点智能科技有限公司	Processing method of communication data, device, electronic equipment, program and medium
US10917784B2 *	2018-03-27	2021-02-09	Denso International America, Inc.	Systems and methods of cloud bonding for vehicles
KR102490395B1 *	2018-04-02	2023-01-19	삼성전자 주식회사	Electronic device for sharing a key of external electronic device and method for the same

US11599767B2 *	2018-04-04	2023-03-07	Toyota Motor Engineering & Manufacturing North America, Inc.	Automotive virtual personal assistant
JP2019191753A *	2018-04-20	2019-10-31	株式会社東海理化電機製作所	Sharing system
JP6640906B2 *	2018-04-24	2020-02-05	株式会社東海理化電機製作所	Key information generation system and key information generation method
US11413982B2	2018-05-15	2022-08-16	Power Hero Corp.	Mobile electric vehicle charging station system
US11538301B2 *	2018-05-25	2022-12-27	Carrier Corporation	Privileged access and anti-theft protection for premises using lock box
EP3759637B1 *	2018-06-12	2022-11-16	Google LLC	Sharing rights to control aspects of an electronic message
DE102018210274B4 *	2018-06-25	2024-12-19	Bayerische Motoren Werke Aktiengesellschaft	Authorization procedure and authorization system for operating a vehicle
CN108944796A *	2018-07-19	2018-12-07	途客易达(天津)网络科技有限公司	Auth method and system
KR102553145B1 *	2018-07-24	2023-07-07	삼성전자주식회사	A secure element for processing and authenticating a digital key and operation method thereof
RU2703659C1 *	2018-08-20	2019-10-21	Ивтес Лтд.	Vehicle intelligent electronic key system
EP3842977A4 *	2018-08-21	2022-04-06	Matsunaga, Chikara	System and method for assisting usage of usage object
US10604956B1 *	2018-09-10	2020-03-31	The Goodyear Tire & Rubber Company	Modular tire service station
US11970134B2 *	2018-09-27	2024-04-30	Honda Motor Co., Ltd.	Vehicle control system and application execution device
CN110969728B *	2018-09-30	2021-04-23	北京骑胜科技有限公司	A vehicle lock control method and device, and a computer-readable storage medium
DE102018124361B4 *	2018-10-02	2020-07-09	Ivtes Ltd.	Intelligent electronic key system for vehicles
JP7038032B2 *	2018-10-03	2022-03-17	本田技研工業株式会社	Vehicle control unit
US10384648B1 *	2018-10-05	2019-08-20	Capital One Services, Llc	Multifactor authentication for vehicle operation
CN109532757A *	2018-11-05	2019-03-29	湖南龙创汽车技术有限公司	A kind of electric car remotely controls halt system
US11034330B2 *	2018-11-09	2021-06-15	Ford Global Technologies, Llc	System and method for distributing digital vehicle keys to passive NFC devices via NFC
US11511703B2 *	2018-11-13	2022-11-29	Denso International America, Inc.	Driver personalization for vehicle-sharing fleet
CN111332251B *	2018-11-30	2022-11-04	百度在线网络技术(北京)有限公司	Method and device for controlling a vehicle
US10469987B1	2018-12-10	2019-11-05	Honda Motor Co., Ltd.	System and method for providing device subjective vehicle passive functions
US11351941B1 *	2018-12-21	2022-06-07	United Services Automobile Association (Usaa)	Method and system for managing customized vehicle settings across multiple vehicles
KR20200089562A *	2019-01-17	2020-07-27	삼성전자주식회사	Method and apparatus for managing a shared digital key
CN109733233B *	2019-01-24	2020-12-04	深圳智链物联科技有限公司	Charging pile power supply method, device and system, charging pile and storage medium
CN109760632B *	2019-01-31	2020-06-02	青岛科技大学	Vehicle tracking system based on blockchain GPS positioning and identification
WO2020174544A1 *	2019-02-25	2020-09-03	本田技研工業株式会社	Vehicle, vehicle onboard device, and management method
KR102708700B1 *	2019-02-28	2024-09-20	스미도모주기가이교고 가부시키가이샤	Work machines, information processing devices
CN109993326A *	2019-03-29	2019-07-09	北京猎户星空科技有限公司	A kind of robot charging maintenance method, device and storage medium
KR102845130B1 *	2019-04-05	2025-08-13	현대자동차주식회사	Vehicle, Server, and method for controlling the vehicle
US11330429B2 *	2019-04-20	2022-05-10	Ksmartech Co., Ltd	Vehicle digital key sharing service method and system
KR102717743B1 *	2019-04-23	2024-10-14	현대자동차주식회사	Method And Apparatus for providing fleet system using Identity Device
JP2020187624A *	2019-05-16	2020-11-19	本田技研工業株式会社	Vehicle control devices, vehicle control methods, and programs
CN114026584A *	2019-05-20	2022-02-08	阿哈默德阿布·艾尔瑞驰	Method for vehicle identification and communication between Transport Network Company (TNC) service users

US20200380582A1	2019-05-29	2020-12-03	Walmart Apollo, Llc	System and method for presenting tire-related information to customers
US10589719B1 *	2019-05-30	2020-03-17	Hyundai Autoever	Method for managing digital key of mobile device for vehicle-sharing and key server using the same
US10857977B1	2019-08-01	2020-12-08	Voxx International Corporation	Vehicle control system and mobile device used as vehicle key fob
US11562374B2 *	2019-09-05	2023-01-24	Veri Rideshare L.L.C.	Rideshare verification
US11569983B2	2019-09-10	2023-01-31	Ford Global Technologies, Llc	Vehicle digital key cloud storage
US11681788B2 *	2019-09-10	2023-06-20	Ford Global Technologies, Llc	Autonomous vehicle authentication key delivery
JP7279804B2 *	2019-09-26	2023-05-23	日本電気株式会社	DOOR LOCK CONTROL DEVICE, VEHICLE DEVICE, DOOR LOCK CONTROL METHOD AND PROGRAM
US11285919B2 *	2019-09-30	2022-03-29	GM Cruise Holdings, LLC	Secure layered autonomous vehicle access
US11443260B1	2019-10-07	2022-09-13	Dbd Design Inc.	System for managing an integrated drive-through restaurant and carwash facility providing estimated wait times via a graphical user interface
KR102419333B1 *	2019-10-08	2022-07-11	신봉근	Health care system and operating method thereof
CN110782590B *	2019-11-04	2022-02-18	连云港杰瑞电子有限公司	Wireless charging pavement billing system based on block chain
CN110901420B *	2019-11-29	2021-01-15	恒大智慧充电科技有限公司	Charging system, charging method, computer device, storage medium, electric vehicle and charging cloud platform
CN110979266B *	2019-12-11	2021-07-30	夸娥科技(上海)有限公司	Electric vehicle charging and replacing system and method based on battery autonomous loading and unloading technology
CN113098830B *	2019-12-23	2022-05-17	华为技术有限公司	Communication methods and related products
US20210207967A1 *	2020-01-05	2021-07-08	Voxx International Corporation	Sharing vehicle access by using mobile device messaging
JP7363566B2 *	2020-02-21	2023-10-18	株式会社デンソー	In-vehicle device, vehicle system, and terminal connection management method
DE102020104709B3 *	2020-02-23	2021-05-27	Bayerische Motoren Werke Aktiengesellschaft	Method, central unit and system for providing a communication function in a means of transport
JP7322761B2 *	2020-03-13	2023-08-08	トヨタ自動車株式会社	System and in-vehicle equipment
CN111402463A *	2020-03-17	2020-07-10	北京百度网讯科技有限公司	Vehicle authorization method and device based on vehicle key information
US11537701B2	2020-04-01	2022-12-27	Toyota Motor North America, Inc.	Transport related n-factor authentication
CN111539717A *	2020-04-20	2020-08-14	车主邦(北京)科技有限公司	Processing method of vehicle payment electronic tag
US11605032B2 *	2020-04-20	2023-03-14	Geotab Inc.	System for shared vehicle maintenance and recovery
CN113561934B *	2020-04-29	2022-07-15	广州汽车集团股份有限公司	Vehicle anti-theft matching method, system, diagnostic instrument and storage medium
DE102020206583A1	2020-05-27	2021-12-02	Volkswagen Aktiengesellschaft	Sharing a digital vehicle key
KR102651286B1 *	2020-06-29	2024-03-26	주식회사 올링크	Method and System for Unlocking Vehicle Door Using Mobile Terminal
EP4172961A4	2020-06-29	2024-07-17	Allink Co., Ltd.	METHOD FOR UNLOCKING A VEHICLE DOOR USING A MOBILE TERMINAL
CN111762125A *	2020-06-30	2020-10-13	庆铃汽车(集团)有限公司	Internet of vehicles locking method and device
US11520926B2	2020-07-09	2022-12-06	Toyota Motor North America, Inc.	Variable transport data retention and deletion
US11610448B2	2020-07-09	2023-03-21	Toyota Motor North America, Inc.	Dynamically adapting driving mode security controls
US11568693B2 *	2020-07-24	2023-01-31	Konnex Enterprises Inc.	Systems, devices, and methods for controlling access to a secure space
JP2022035778A *	2020-08-21	2022-03-04	ヤマハ発動機株式会社	Ship propulsion device, communication terminal, and key code sever
US20220068041A1 *	2020-08-28	2022-03-03	Ford Global Technologies, Llc	Secure personal information exchange over c-v2x
US11414051B2 *	2020-09-04	2022-08-16	Ford Global Technologies, Llc	Keyed-alike phone-based keys

US11588797B2 *	2020-09-15	2023-02-21	Ford Global Technologies, Llc	Vehicle distributed computing for additional on-demand computational processing
CN112124247B *	2020-09-18	2022-04-22	上海钧正网络科技有限公司	Vehicle lock control method and device and computer readable storage medium
US11505161B2	2020-10-13	2022-11-22	Ford Global Technologies, Llc	Authenticating privilege elevation on a transportation service
US11500392B2 *	2020-10-21	2022-11-15	Toyota Motor Engineering & Manufacturing North America, Inc.	Selective digital key
US12221068B2	2020-10-23	2025-02-11	Ford Global Technologies, Llc	Biometric authenticated vehicle start with paired sensor to key intrusion detection
CN112308247A *	2020-10-29	2021-02-02	广州汽车集团股份有限公司	Vehicle maintenance method and device, electronic equipment and storage medium
US20220138747A1 *	2020-10-30	2022-05-05	Yomangjin company	Round trip resource sharing method with time slot locking
CN112277881B *	2020-12-25	2021-04-06	上海银基信息安全技术股份有限公司	Identity authentication method and device, vehicle and user equipment
CN114697925B *	2020-12-30	2024-12-10	比亚迪股份有限公司	A virtual key sharing system and method
CN112918386B *	2021-02-07	2022-12-13	中国第一汽车股份有限公司	Control method and device for automobile glove box lock
KR20220170648A *	2021-06-23	2022-12-30	현대자동차주식회사	System and method for controlling vehicle
EP4141826A1 *	2021-08-30	2023-03-01	Ningbo Geely Automobile Research & Development Co. Ltd.	Method and cloud service for allowing remote access to specific vehicle functions
JP7632188B2 *	2021-08-31	2025-02-19	トヨタ自動車株式会社	Information processing device, vehicle equipped with the same, information processing method, and program
US12287910B2	2021-09-09	2025-04-29	Toyota Motor North America, Inc.	Transport limitation for data reads
US12054157B2	2021-09-09	2024-08-06	Toyota Motor North America, Inc.	Hardware timer data expiration
US11820330B2 *	2021-09-28	2023-11-21	Capital One Services, Llc	Provisioning a vehicle experience according to an authentication of a driver for the vehicle experience
CN118120270A *	2021-10-12	2024-05-31	源捷公司	Activation of mobile devices for vehicles
DE102021211584A1 *	2021-10-14	2023-04-20	Robert Bosch Gesellschaft mit beschränkter Haftung	Method and device for authenticating a motor vehicle at a hydrogen fuel pump
EP4177118B1 *	2021-11-08	2025-08-13	Bayerische Motoren Werke Aktiengesellschaft	Apparatus, user equipment, system and method
KR20230068005A *	2021-11-10	2023-05-17	삼성전자주식회사	Electronic device and method for controlling vehicle based on driver authentication
US12081983B2 *	2022-01-14	2024-09-03	Herc Rentals Inc.	System, method, and program for controlling access to a machine or equipment
JP2023110294A *	2022-01-28	2023-08-09	ヤマハ発動機株式会社	Ship rental system and method
US12139104B2	2022-04-08	2024-11-12	Apple Inc.	Automatic car-key pairing based on wireless pairing
US12174927B2 *	2022-04-20	2024-12-24	Ford Global Technologies, Llc	Blockchain method and system to prevent camera spoofing before operating vehicle
US12069149B2	2022-04-20	2024-08-20	Red Hat, Inc.	Computing resource usage control using seed and token generation
JP2023167755A *	2022-05-13	2023-11-24	ソニーグループ株式会社	Information processing device, information processing method, vehicle control device, and information processing terminal
JP7753999B2 *	2022-06-22	2025-10-15	トヨタ自動車株式会社	Information processing device, processing method, and program
WO2023247058A1 *	2022-06-24	2023-12-28	Bayerische Motoren Werke Aktiengesellschaft	Computer program, apparatus, user device, vehicle, server, and methods for controlling a vehicle
CN115167452A *	2022-08-03	2022-10-11	乐聚(深圳)机器人技术有限公司	Robot moving method, robot, server, and storage medium
DE102022209954A1 *	2022-09-21	2024-03-21	Brose Fahrzeugteile Se & Co. Kommanditgesellschaft, Bamberg	Method for implementing a control program in an electronic control device of a vehicle, control system and computer program product
US20240119514A1 *	2022-10-07	2024-04-11	Ford Global Technologies, Llc	Peer-to-peer vehicle sharing system and method
US12434663B2	2022-12-01	2025-10-07	Ford Global Technologies, Llc	Vehicle digital key management on a blockchain

CN116142129B *	2022-12-19	2024-04-26	重庆长安汽车股份有限公司	Vehicle non-inductive unlocking system and method, vehicle and storage medium
WO2024159217A1 *	2023-01-27	2024-08-02	Passivebolt, Inc.	Decentralized identity-based access control systems and methods
US20240321024A1 *	2023-03-23	2024-09-26	International Engine Intellectual Property Company, Llc	Remote vehicle system actuation
CN116346978B *	2023-03-24	2024-04-09	小米汽车科技有限公司	Terminal device and data processing method of terminal device
JP2024160632A *	2023-05-01	2024-11-14	トヨタ自動車株式会社	Control device
WO2025023925A1 *	2023-07-21	2025-01-30	Google Llc	Digital vehicle key providing for limited use of a vehicle
KR20250025903A *	2023-08-16	2025-02-25	현대자동차주식회사	Vehicle controlling method and a vehicle having a controller performing the same
DE102023125223A1	2023-09-18	2025-03-20	Bayerische Motoren Werke Aktiengesellschaft	Arrangement for providing a digital key for a vehicle on a user device, method, computer program and storage medium
DE102023128015A1 *	2023-10-13	2025-04-17	Bayerische Motoren Werke Aktiengesellschaft	METHOD FOR SHARING DIGITAL VEHICLE KEYS
DE102024202842A1 *	2024-03-25	2025-09-25	Robert Bosch Gesellschaft mit beschränkter Haftung	Procedure for access rights management for a vehicle
DE102024114668A1 *	2024-05-24	2025-11-27	Bayerische Motoren Werke Aktiengesellschaft	Procedure for implementing an alcohol test for a vehicle user and vehicle arrangement

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
US12337715B2	2025-06-24	Methods and systems for sharing e-keys to access vehicles
US11132650B2	2021-09-28	Communication APIs for remote monitoring and control of vehicle systems
US10282708B2	2019-05-07	Service advisor accounts for remote service monitoring of a vehicle
US9189900B1	2015-11-17	Methods and systems for assigning e-keys to users to access and drive vehicles
US11396244B2	2022-07-26	Methods for transferring user profiles between vehicles using cloud services
US9139091B1	2015-09-22	Methods and systems for setting and/or assigning advisor accounts to entities for specific vehicle aspects and cloud management of advisor accounts
US10554759B2	2020-02-04	Connected vehicle settings and cloud system management
US11203355B2	2021-12-21	Vehicle mode for restricted operation and cloud data monitoring
US10286919B2	2019-05-14	Valet mode for restricted operation of a vehicle and cloud access of a history of use made during valet mode use
US9171268B1	2015-10-27	Methods and systems for setting and transferring user profiles to vehicles and temporary sharing of user profiles to shared-use vehicles
US9215274B2	2015-12-15	Methods and systems for generating recommendations to make settings at vehicles via cloud systems
US9104537B1	2015-08-11	Methods and systems for generating setting recommendation to user accounts for registered vehicles via cloud systems and remotely applying settings
US12337716B2	2025-06-24	Systems for transferring user profiles between vehicles using cloud services

Priority And Related Applications

Parent Applications (1)

Application	Priority date	Filing date	Relation	Title
US15/854,241	2011-04-22	2017-12-26	Continuation	Vehicles and cloud systems for sharing e-Keys to access and use vehicles

Child Applications (2)

Application	Priority date	Filing date	Relation	Title
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