IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

INTELLECTUAL VENTURES I LLC and INTELLECTUAL VENTURES II LLC,	)	
Plaintiffs,	)	C.A. No. 2:21-cv-389
v.	)	
TOYOTA MOTOR CORP.; TOYOTA MOTOR NORTH AMERICA, INC.; TOYOTA MOTOR ENGINEERING & MANUFACTURING NORTH AMERICA, INC.; and TOYOTA MOTOR SALES, U.S.A., INC.,	)	**JURY TRIAL DEMANDED**
Defendants.	)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Intellectual Ventures I LLC and Intellectual Ventures II LLC (collectively, "Intellectual Ventures" or "Plaintiffs"), in their Complaint of patent infringement against Defendants Toyota Motor Corporation, Toyota Motor North America, Inc., Toyota Motor Engineering & Manufacturing North America, Inc., and Toyota Motor Sales, U.S.A., Inc. (collectively, "Toyota" or "Defendants"), hereby allege as follows:

NATURE OF THE ACTION

1. This is a civil action for the infringement of United States Patent No. 6,832,283 ("the '283 Patent"), United States Patent No. 7,484,008 ("the '008 Patent"), United States Patent No. 9,291,475 ("the '475 Patent"), United States Patent No. 7,382,771 ("the '771 Patent"), United States Patent No. 9,232,158 ("the '158 Patent"), United States Patent No. 9,681,466 ("the '466 Patent"), United

States Patent No. 10,292,138 ("the '138 Patent"), United States Patent No. 8,953,641 ("the '641 Patent"), United States Patent No. 8,811,356 ("the '356 Patent"), United States Patent No. 7,684,318 ("the '318 Patent"), and United States Patent No. 9,602,608 ("the '608 Patent") (collectively, the "Patents-in-Suit") under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq*.

THE PARTIES

Intellectual Ventures

2. Plaintiff Intellectual Ventures I LLC ("Intellectual Ventures I") is a Delaware limited liability company having its principal place of business located at 3150 139th Avenue SE, Bellevue, Washington 98005.

3. Plaintiff Intellectual Ventures II LLC ("Intellectual Ventures II") is a Delaware limited liability company having its principal place of business located at 3150 139th Avenue SE, Bellevue, Washington 98005.

4. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '008 and '318 Patents. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '283, '475, '771, '158, '466, '138, '641, '356, and '608 Patents.

Toyota

5. Upon information and belief, Defendant Toyota Motor Corporation ("TMC") is a corporation organized and existing under the laws of Japan with a principal place of business at 1 Toyota-cho, Toyota City, Aichi Prefecture 471-8571, Japan. On information and belief, TMC does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and the Eastern District of Texas.

6. Upon information and belief, Defendant Toyota Motor North America, Inc. ("TMNA") is a corporation organized and existing under the laws of the State of California with its principal place

of business at 6565 Headquarters Drive W1-3C, Plano, Texas 75024. On information and belief, TMNA is the wholly owned operating subsidiary of TMC and is responsible for all operations of TMC in the United States, including research and development, manufacturing, sales, offers for sale, marketing, importation, and distribution of automotive vehicles from Toyota-managed brands (*e.g.*, Toyota, Lexus, and Scion). According to its website, TMNA is "headquartered in Plano, Texas, [and] brings together Toyota's marketing, sales, engineering and manufacturing arms in North America on one shared, state-of-the-art campus." (https://www.toyota.com/usa/operations/map.html#!/tcal).

7. Upon information and belief, Defendant Toyota Motor Engineering & Manufacturing North America, Inc. ("TEMA") is a corporation organized and existing under the laws of the State of Kentucky with its principal place of business at 6565 Headquarters Drive W1-3C, Plano, Texas 75024. On information and belief, TEMA is a wholly owned subsidiary of TMC and is responsible for research and development and manufacturing of automotive vehicles from Toyota-managed brands (*e.g.*, Toyota, Lexus, and Scion) in the United States. According to its website, TEMA "is responsible for engineering design and development, R&D and manufacturing activities in the U.S.… and is also responsible for manufacturing plants across North America" including in the State of Texas. (https://www.toyota.com/usa/operations#!/Engineering-Manufacturing).

8. Upon information and belief, Defendant Toyota Motor Sales, U.S.A., Inc. ("TMS") is a corporation organized and existing under the laws of the State of California with its principal place of business at 6565 Headquarters Drive W1-3C, Plano, Texas 75024. On information and belief, TMS is a wholly owned subsidiary of TMC and is responsible for sales, marketing, and distribution of automotive vehicles from Toyota-managed brands (*e.g.*, Toyota, Lexus, and Scion) in the United States.

9. On information and belief, Toyota designs, manufactures, distributes, imports, offers for sale, and/or sells in the State of Texas and the Eastern District of Texas automotive vehicles and

components thereof that infringe the Patents-in-Suit, contributes to inducement by others, and/or induces others to commit acts of patent infringement in the State of Texas and the Eastern District of Texas. Toyota has regular and established places of business, at which it has committed acts of infringement and placed the accused products into the stream of commerce, throughout the State of Texas and the Eastern District of Texas, including at, *e.g.*, Shapen Toyota ("Toyota dealer"), located at 2015 East End Boulevard South, Marshall, Texas 75672.

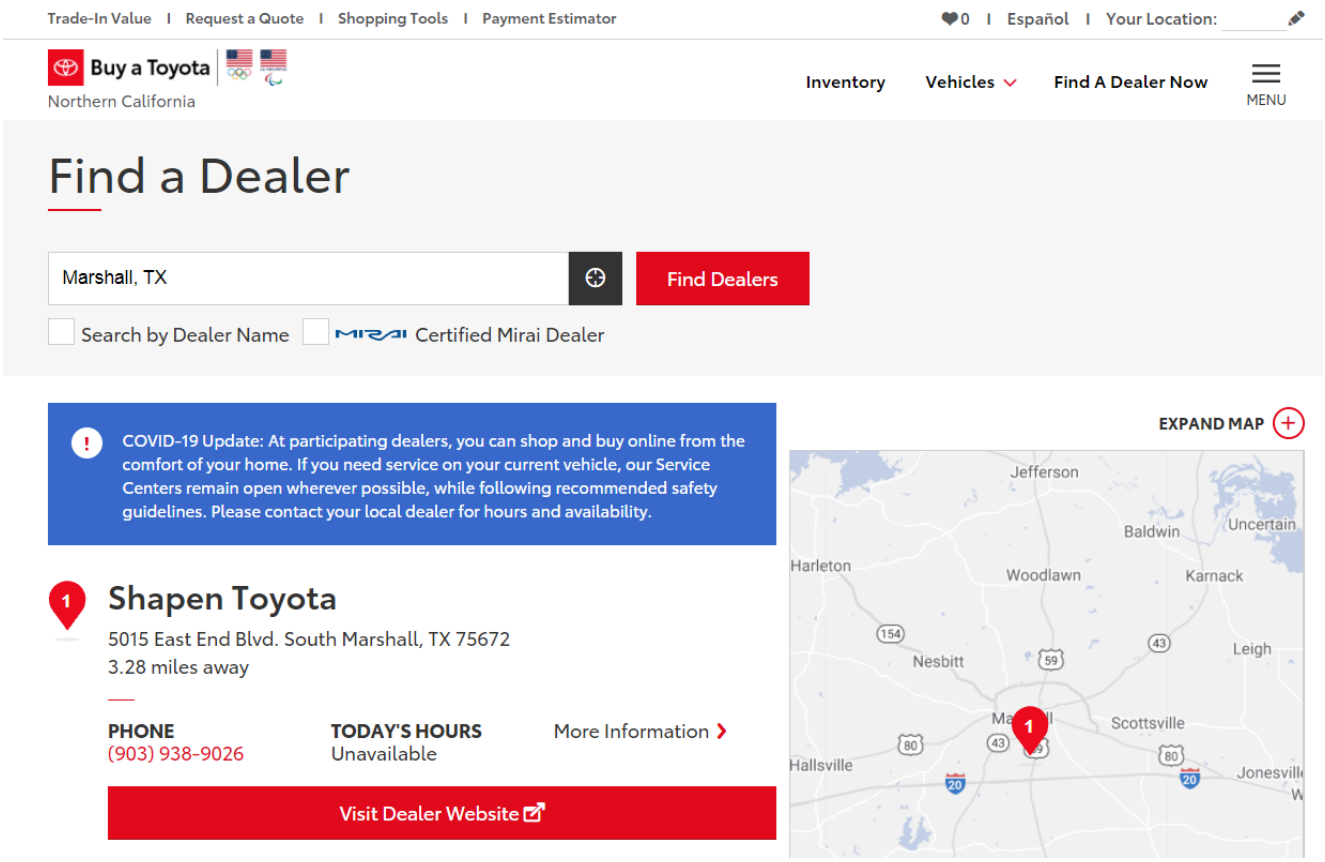
10. Upon information and belief, the authorized Toyota dealer in this District is a regular, continuous, and established physical place of business of Toyota, being established, ratified, and/or controlled by Toyota as an authorized dealer, which is the exclusive place of business at which Toyota offers for sale, sells, and provides authorized warranty, maintenance, and recall services for the Toyota automotive vehicles and components that infringe the Patents-in-Suit.

11. Upon information and belief, Toyota granted the authorized Toyota dealer in this District the exclusive right to offer for sale, sell, and service the infringing Toyota vehicles in this District, at this particular geographical location, and has further conditioned this authorized dealer's continued offering for sale, sale, and service of the infringing Toyota vehicles in this District and this authorized dealer's continued presence in this District, at this particular geographical location, so that the infringing Toyota automobiles and components are offered for sale, sold, and/or distributed in this District.

12. Upon information and belief, Toyota ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by listing it in Toyota's sales directories and on Toyota's website, including, *e.g.*, as shown below[1]:

[1]https://www.buyatoyota.com/norcal/dealers/?siteid=SEM_NCA10_NotTagged&TMSSiteAttribute=google_cpc&utm_source=google&utm_medium=cpc&utm_content=Service&utm_campaign=HL%3ESearch%3EBR%3EP%26S%3EModel%3EServices_-_Est_782&utm_keyword=toyota+make+appointment&gclid=EAIaIQobChMIzoi6jvq48wIVjeDICh0AKwNiEAAYASABEgLmlvD_BwE&query=Marshall%2C+TX&type=state&mirai=false

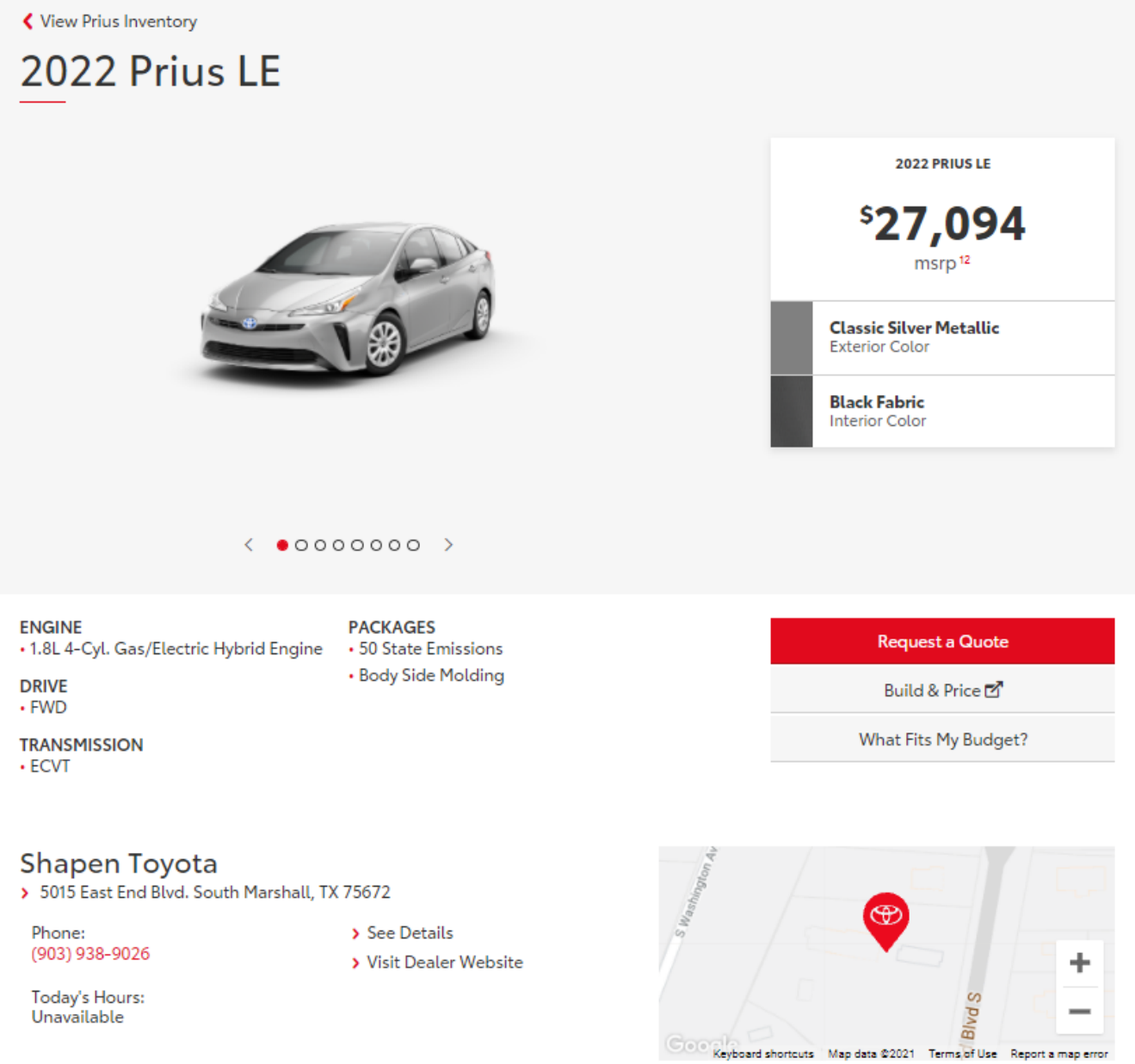
Figure 1



13. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by offering for sale on Toyota's website the infringing automobiles and components at the physical, geographical location of this authorized Toyota dealer, including, *e.g.*, as shown below[2]:

[2] https://www.buyatoyota.com/gst/inventory-detail?series=prius&year=2022&model=1223&exteriorcolor=01F7&interiorcolor=FD20&accessory=FE,G_SM&msrp=27094.0

Figure 2



14. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by requiring this authorized dealer to feature and use Toyota names, branding, trademarks, and/or trade dress, in this authorized dealer's name, (*e.g.*, Shapen Toyota), as well as in the marketing and advertising materials that this authorized dealer uses and makes to offer for sale and sell the infringing automobiles and

components in this District – including on this authorized dealer's website hosted, maintained, and shown to consumers in this District.

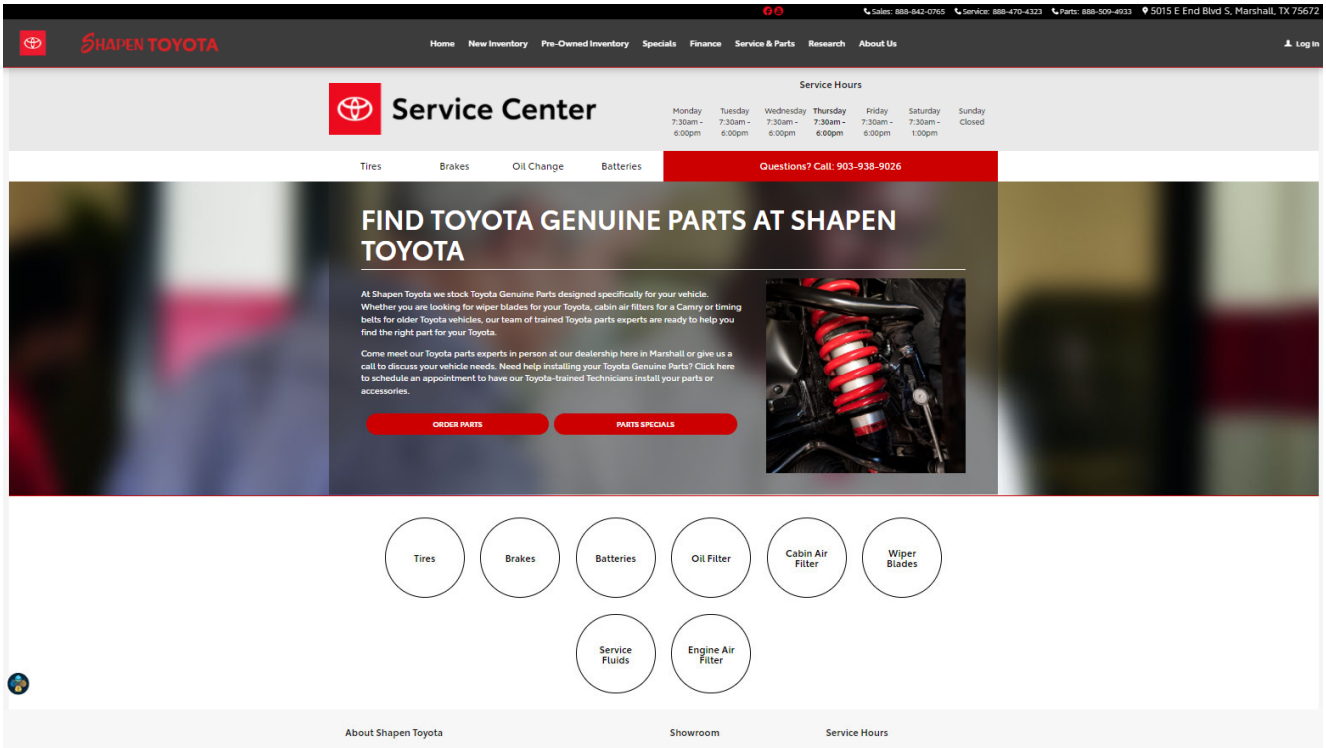
15. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by controlling in whole or in part the name, geographical location, design, layout, marketing, and branding of this place to test drive and purchase the infringing Toyota automobiles and components, including, *e.g.*, as shown below:

Figure 3

16. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by requiring this business to store, display, and/or distribute marketing materials, informational brochures, product specifications, service information, warranty information, lease information, financing information, and various other literature, as well as Toyota authorized service, parts, and accessories, for the infringing

automobiles and components, including, *e.g.*, as shown below[3]:

Figure 5



17. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by establishing, authorizing, and requiring this place of business to offer to consumers in this District, at the time of sale and/or distribution of the infringing automobiles and components, Toyota financial services and products, Toyota warranties, Toyota service from Toyota certified and/or trained technicians, Toyota parts, and Toyota accessories.

18. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by recruiting, hiring, training, offering compensation and benefits to, controlling, and/or labeling as authorized or certified

[3] https://www.shapentoyota.com/find-toyota-genuine-parts.htm

Toyota employees and agents some or all of the employees or agents employed in this District by this authorized dealer, including for example, Toyota certified brand advisors, Toyota certified technicians, and Toyota certified service advisors.

19. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota by providing this dealer sales promotions, providing this dealer financing for dealership improvements directed by Toyota, and sharing customer data with this dealer to provide customized Toyota services.

20. Upon information and belief, Toyota further ratifies and holds this authorized Toyota dealer out as a regular and established place of business of Toyota in this District by establishing, authorizing, and requiring consumers in this District to visit and use this authorized dealer in order to obtain authorized Toyota service, obtain scheduled maintenance under any Toyota service plan, make repairs pursuant to any Toyota warranty, or obtain any recall work for all new Toyota automobiles and components, including the infringing automobiles and components.

21. Upon information and belief, Toyota has established and ratified and holds this authorized Toyota dealer out as a regular and established place of business of Toyota by directing and controlling this authorized dealer's actions, sales, and services in the foregoing manner, and has consented to this authorized dealer acting on Toyota's behalf and being Toyota's place of business whereby the infringing automobiles and components are distributed, offered for sale, sold, and serviced in order to place these infringing articles into the stream of commerce in this District, and this authorized dealer has consented to act on Toyota's behalf pursuant to the foregoing terms of control and direction in order to be able to provide these Toyota automobiles, components, and services to consumers in this District.

JURISDICTION AND VENUE

22. This is an action for patent infringement arising under the patent laws of the United States. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

23. This Court has personal jurisdiction over Toyota because Toyota conducts business in and has committed acts of patent infringement, contributed to infringement by others, and/or induced others to commit acts of patent infringement in this District, the State of Texas, and elsewhere in the United States and has established minimum contacts with this forum state such that the exercise of jurisdiction over Toyota would not offend the traditional notions of fair play and substantial justice. Upon information and belief, Toyota transacts substantial business with entities and individuals in the State of Texas and the Eastern District of Texas, by among other things, importing, offering to sell, distributing, and selling products that infringe the Patents-in-Suit, including the infringing automotive vehicles and components thereof that Toyota purposefully directs into the State of Texas and this District as alleged herein, as well as by providing service and support to its customers in this District. Toyota places the accused automotive vehicles and components thereof into the stream of commerce via authorized and established distribution channels with the knowledge and expectation that they will be sold in the State of Texas, including this District, and do not otherwise permit the sale of the accused automotive vehicles and components thereof in the State of Texas, or in this District, outside of these established, authorized, and ratified distribution channels and dealer networks.

24. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b) because Toyota has committed acts of infringement in this District and maintains numerous regular and established places of business in this District.

25. Toyota is subject to this Court's general and specific jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to Toyota's substantial business in the State of Texas

and this District, including through its past infringing activities, because Toyota regularly does and solicits business herein, and/or because Toyota has engaged in persistent conduct and/or has derived substantial revenues from goods and services provided to customers in the State of Texas and this District.

FACTUAL BACKGROUND

26. Intellectual Ventures Management, LLC ("Intellectual Ventures Management") was founded in 2000. Since then, Intellectual Ventures Management has been involved in the business of inventing. Intellectual Ventures Management creates inventions and files patent applications for those inventions; collaborates with others to develop and patent inventions; and acquires and licenses patents from individual inventors, universities, corporations, and other institutions. A significant aspect of Intellectual Ventures Management's business is managing the plaintiffs in this case, Intellectual Ventures I and Intellectual Ventures II.

27. To create its own inventions, Intellectual Ventures Management has a staff of scientists and engineers who develop ideas in a broad range of fields, including agriculture, computer hardware, life sciences, medical devices, semiconductors, and software. Intellectual Ventures Management has invested millions of dollars developing such ideas and has filed hundreds of patent applications on its inventions. Intellectual Ventures Management has also invested in laboratory facilities to assist with the development and testing of new ideas.

28. One of the founders of Intellectual Ventures Management is Nathan Myhrvold, who worked at Microsoft from 1986 until 2000 in a variety of executive positions, culminating in his appointment as the company's first Chief Technology Officer ("CTO") in 1996. While at Microsoft, Dr. Myhrvold founded Microsoft Research in 1991 and was one of the world's foremost software experts. Between 1986 and 2000, Microsoft became the world's largest technology company.

29. Under Dr. Myhrvold's leadership, Intellectual Ventures acquired more than 70,000 patents covering many important inventions of the Internet era. Many of these inventions coincided with Dr. Myhrvold's successful tenure at Microsoft.

30. One of the most significant accomplishments of the Internet era is the emergence of wireless technologies for vehicles. Wireless connectivity systems in vehicles enable communication channels within vehicles as well as with other external networks. Intellectual Ventures' Patents-In-Suit provide improvements to wireless communications used in vehicles.

31. Toyota provides several types of wireless communication system solutions and services to its customers. Toyota's product offerings include but are not limited to: Entune™ navigation system; infotainment systems using the MOST standard; Entune™ 3.0 Wi-Fi connect with hotspot technology; Entune™ real-time traffic information system; and Enform™ systems. These product offerings are included in various automotive vehicles managed by Toyota (*e.g.*, Toyota, Lexus, and Scion) including but not limited to Prius, Prius +, and Lexus. Toyota markets and sells these wireless communication system solutions and services in several Toyota models throughout the world, including in the United States and Texas.

THE PATENTS-IN-SUIT

U.S. Patent No. 6,832,283

32. On December 14, 2004, the PTO issued the '283 Patent, titled "METHOD FOR ADDRESSING NETWORK COMPONENTS." The '283 Patent is valid and enforceable. A copy of the '283 Patent is attached as Exhibit 1.

33. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '283 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '283 Patent.

34. The ’283 Patent generally relates to systems and methods for addressing components of a network, especially in the case of data bus systems in transport means, in which each component is assigned a first address for the mutual communication within the network and the first addresses are stored in a central register. The network addressing systems and methods covered by the ’283 Patent include addressing components of a first network, especially in the case of data bus systems in transport vehicles, in which each component is assigned a first address for the mutual communication within the network and the first addresses are stored in a central register, in which at least one particular component of the first network communicates with another network, this component, when dialing into the second network, is assigned a second address by the latter and, within the first network, addressing takes place on the basis of function-specific address components, identical function blocks of the components being addressed via identical function-specific address components.

U.S. Patent No. 7,484,008

35. On January 27, 2009, the PTO issued the ’008 Patent, titled “APPARATUS FOR VEHICLE INTERNETWORKS.” The ’008 Patent is valid and enforceable. A copy of the ’008 Patent is attached as Exhibit 2.

36. Intellectual Ventures I is the owner of all rights, title, and interest in and to the ’008 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the ’008 Patent.

37. The ’008 Patent generally relates to intelligent vehicle networks that include connection to the physical world. In particular, the invention relates to providing distributed network and Internet access to processors, controls, and devices in vehicles. The vehicle networks covered by the ’008 Patent include internetworks that provide for communications among diverse electronic devices within a vehicle, and for communications among these devices and networks external to the vehicle.

The vehicle internetwork comprises specific devices, software, and protocols, and provides for security for essential vehicle functions and data communications, ease of integration of devices and services to the vehicle internetwork, and ease of addition of services linking the vehicle to external networks such as the Internet.

U.S. Patent No. 9,291,475

38. On March 22, 2016, the PTO issued the '475 Patent, titled "DEVICE, SYSTEM AND METHOD FOR CONTROLLING SPEED OF A VEHICLE USING A POSITIONAL INFORMATION DEVICE." The '475 Patent is valid and enforceable. A copy of the '475 Patent is attached as Exhibit 3.

39. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '475 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '475 Patent.

40. The '475 Patent generally relates to navigational or positional information systems, and more particularly, to devices, systems, and methods for controlling the speed of a vehicle using a positional information device, *e.g.*, a global positioning system (GPS) device. For example, the systems include a locational information module for determining location information and speed; a storage module for storing at least one geographic map including at least one route and a speed limit for at least one route; a processing module configured to receive the location information, retrieve at least one geographic map based on the location information, determine the speed limit based on the location information, and compare the speed of the device to the determined speed limit; and a display module for alerting a user if the speed of the device exceeds the determined speed limit.

U.S. Patent No. 7,382,771

41. On June 3, 2008, the PTO issued the '771 Patent, titled "MOBILE WIRELESS

HOTSPOT SYSTEM." The '771 Patent is valid and enforceable. A copy of the '771 Patent is attached as Exhibit 4.

42. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '771 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '771 Patent.

43. The '771 Patent generally relates to wireless Internet access points, and in particular, for example, for providing an improved mobile wireless access point for use with high-speed wireless devices. For example, a system allows client devices configured for short-range, high-speed wireless Internet access to use said system to access the Internet while in a mobile environment, such as a passenger vehicle.

U.S. Patent No. 9,232,158

44. On January 5, 2016, the PTO issued the '158 Patent, titled "LARGE DYNAMIC RANGE CAMERAS." The '158 Patent is valid and enforceable. A copy of the '158 Patent is attached as Exhibit 5.

45. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '158 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '158 Patent.

46. The '158 Patent generally relates to optical devices and more particularly to expanding the dynamic exposure range in digital cameras.

U.S. Patent No. 9,681,466

47. On June 13, 2017, the PTO issued the '466 Patent, titled "SCHEDULING TRANSMISSIONS ON CHANNELS IN A WIRELESS NETWORK." The '466 Patent is valid and enforceable. A copy of the '466 Patent is attached as Exhibit 6.

48. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '466 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '466 Patent.

49. The '466 Patent generally relates to mechanisms to support Internet Protocol data flows within a wireless communication system, applicable to, but not limited to, gateway queuing algorithms in packet data transmissions, for example, for use in the universal mobile telecommunication system.

U.S. Patent No. 10,292,138

50. On January 5, 2016, the PTO issued the '158 Patent, titled "LARGE DYNAMIC RANGE CAMERAS." The '138 Patent is valid and enforceable. A copy of the '138 Patent is attached as Exhibit 7.

51. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '138 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '138 Patent.

52. The '138 Patent relates to telecommunications in general, and, more particularly, to a technique for enabling the stations in a local area network to intelligently use their shared-communications channel. For example, at least one of the inventions set forth in the '318 Patent enables latency-tolerant and latency-intolerant applications to intelligently share a shared-communications channel in a manner that seeks to satisfy the needs of all of the applications. An illustrative embodiment enables each application to be associated with a different class of service, wherein each class of service is associated with one or more quality-of-service parameters (*e.g.*, minimum throughput, maximum latency, etc.).

U.S. Patent No. 8,953,641

53. On February 10, 2015, the PTO issued the '641 Patent, titled "METHODS AND

APPARATUS FOR MULTI-CARRIER COMMUNICATIONS WITH VARIABLE CHANNEL BANDWIDTH". The '641 Patent is valid and enforceable. A copy of the '641 Patent is attached as Exhibit 8.

54. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '641 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '641 Patent.

55. The '641 Patent relates to methods and apparatus for multi-carrier communication with variable channel bandwidth.

U.S. Patent No. 8,811,356

56. On August 19, 2014, the PTO issued the '356 Patent, titled "COMMUNICATIONS IN A WIRELESS NETWORK". The '356 Patent is valid and enforceable. A copy of the '356 Patent is attached as Exhibit 9.

57. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '356 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '356 Patent.

58. The '356 Patent relates to equipment and methods used in communication systems in a wireless network. The equipment and methods covered by the '356 Patent generally relate to receiving resource allocation information associated with an uplink physical control channel.

U.S. Patent No. 7,684,318

59. On March 23, 2010, the PTO issued the '318 Patent, titled "SHARED-COMMUNICATIONS CHANNEL UTILIZATION FOR APPLICATIONS HAVING DIFFERENT CLASS OF SERVICE REQUIREMENTS". The '318 Patent is valid and enforceable. A copy of the '318 Patent is attached as Exhibit 10.

60. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '318 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '318 Patent.

61. The '318 Patent relates to telecommunications in general, and, more particularly, to a technique for enabling the stations in a local area network to intelligently use their shared-communications channel. For example, at least one of the inventions set forth in the '318 Patent enables latency-tolerant and latency-intolerant applications to intelligently share a shared-communications channel in a manner that seeks to satisfy the needs of all of the applications. An illustrative embodiment enables each application to be associated with a different class of service, wherein each class of service is associated with one or more quality-of-service parameters (*e.g.*, minimum throughput, maximum latency, etc.).

U.S. Patent No. 9,602,608

62. On March 21, 2017, the PTO issued the '608 Patent, titled "SYSTEM AND METHOD FOR NOTIFYING A USER OF PEOPLE, PLACES OR THINGS HAVING ATTRIBUTES MATCHING A USER'S STATED PREFERENCE". The '608 Patent is valid and enforceable. A copy of the '608 Patent is attached as Exhibit 11.

63. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '608 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '608 Patent.

64. The '608 Patent relates to communications systems and methods for providing localized resource information to mobile customers based on their explicit preferences that match profiles of media content about people, places and things. The communication systems, apparatus, and methods covered by the '608 Patent include location-based and preference-based systems and methods for

matching media content about persons, places and things with the expressed preferences of mobile users to notify users about and provide users with access to media content about persons, places and things that match the user's expressed preferences. The systems covered by the '608 Patent provide information such as stories or articles that match the user's interests and relate to their location

COUNT I
(Toyota's Infringement of U.S. Patent No. 6,832,283)

65. Paragraphs 1-64 are incorporated by reference as if fully set forth herein.

66. Toyota directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '283 Patent, by making, using, performing, testing, leasing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '283 Patent including, but not limited to, the Toyota Lexus RX SUV, Lexus GS line, Toyota Land Cruiser, Toyota Prius, and Toyota Prius + that include the MOST Intelligent Network Interface Controllers as part of Toyota's Infotainment Systems (collectively, "Toyota Count I Automobiles").

67. As an exemplary claim, Claim 1 of the '283 Patent is reproduced below:

> *1. Method for addressing components of a first network in a data bus system in a transport vehicle, in which each component is assigned a first address for mutual communication within the network and the first addresses are stored in a central register, wherein at least one particular component of the first network communicates with a second network, said one component, when dialling into the second network, is assigned a second address by the second network, and wherein, within the first network, addressing takes place on the basis of function-specific address components, identical function blocks of the components being addressed via identical function-specific address components.*

68. Upon information and belief, Toyota and the Toyota Count I Automobiles perform each and every limitation of at least claim 1 of the '283 Patent. Upon information and belief, the Toyota Count I Automobiles include a Toyota Infotainment System, such as Entune, that use the MOST Automotive Multimedia Network ("MOST").[4]

69. Upon information and belief, the Toyota Count I Automobiles include a first network of components in data bus systems using, for example, MOST networks.[5]

70. Upon information and belief, the Toyota Count I Automobiles using, for example, MOST, address the components in the first network, in which each component is assigned a first address for mutual communication within the network, addressing takes place on the basis of function-specific address components, identical function blocks of the components being addressed via identical function-specific address components.

2.1.2.6 Addressing MOST Functions

In a MOST network, the devices are connected in a ring structure. To address these devices, different types of addresses can be used. The MOST Network Interface Controller provides six different types of addresses, which are introduced below.

2.1.2 Device Model

The following sections describe the logical model of a MOST device. A MOST device is a physical unit that can be connected to a MOST network via a MOST Network Interface Controller.

On the application level, a MOST device contains multiple components that are called function blocks (FBlocks), for example, tuner, amplifier, or CD player. It is possible that there are multiple FBlocks in a single MOST device, such as a tuner and an amplifier combined in one case and connected to the MOST network via a common MOST Network Interface Controller.

Exhibit 12, MOST Specification Rev. 3.0 E2 (07/2010) at pp. 39, 34

71. Upon information and belief, the Toyota Count I Automobiles include a central registry that stores the first addresses of the components.

[4] *See* http://www.microchip.com/pressreleasepage/toyota-continues-to-add-microchip-s-most50-networking-devices-to

[5] *See, e.g.*, http://www.microchip.com/pressreleasepage/toyota-continues-to-add-microchip-s-most50-networking-devices-to

MOST

3.1.3.3.2 Central Registry

The NetworkMaster generates the Central Registry during the initialization of the network and it continues to administrate it until Network Shutdown (section 3.1.2.3.2). The Central Registry is an image of the physical and logical system configuration. It contains the logical node address and the respective FBlocks of each device:

DeviceID	The DeviceID stands for a physical device or a group of devices in the network. The DeviceID (RxTxAdr) can represent a node position address (RxTxPos), a logical address (RxTxLog), or a group address.

RxTxLog	RxTxPos	FBlockID	InstID
0x0100	0	AudioDiskPlayer	1
		NetworkMaster	10
		ConnectionMaster	1
0x0101	1	AudioDiskPlayer	2
0x0102	2	AM/FMTuner	1
		AudioTapeRecorder	1
0x0103	3	AudioAmplifier	2
Etc.			
MaxNode	MaxNode	HumanMachineInterface	1

Table 3-10: Example of a Central Registry

Exhibit 12, MOST Specification Rev. 3.0 E2 (07/2010) at p. 140

72. Upon information and belief, the Toyota Count I Automobiles' Infotainment System, Entune™ or other systems or components therein communicate with other networks, such as other Toyota networks and/or cellular networks.

73. Upon information and belief, the Toyota Count I Automobiles' Infotainment System, Entune™, or other systems or components therein are assigned a second address by the other (second) network.

74. Accordingly, Toyota and/or the Toyota Count I Automobiles operating, for example, the Entune™, Telematics, and Infotainment systems within and external to the Toyota Automobiles for, among other things, diagnostics, directly infringe the methods covered by one or more claims of the '283 Patent.

75. Additionally, Toyota has been, and currently is, actively inducing infringement of the '283 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '283 Patent under 35 U.S.C. §

271(c) either literally and/or by the doctrine of equivalents.

76. Toyota knew of the '283 Patent, or should have known of the '283 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '283 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '283 Patent.

77. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '283 Patent with knowledge of the '283 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '283 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing and promoting the described hardware and/or software components and features in the Toyota Count I Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '283 Patent. As an illustrative example only, Toyota induces such acts of infringement by providing its customers instructions on how to use its products and services in a manner or configuration that infringe one or more claims of the '283 Patent.

78. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '283 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '283 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

79. Toyota has actively induced, and continues to actively induce infringement of one or more claims of the '283 Patent by intending that others use, offer for sale, or sell in the United States,

products and/or methods embodied therein as covered by one or more claims of the ’283 Patent, including but not limited to MOST implemented in, for example, the Infotainment Systems of the Toyota Count I Automobiles, such as Entune™. Toyota provides these products and practices the methods embodied within the products covered by one or more claims of the ’283 Patent to others including customers, resellers, and end-user customers who in turn use, provide for use, offer for sale, or sell in the United States, the products and/or services and methods that directly infringe one or more claims of the ’283 Patent.

80. As a result of Toyota’s acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT II
(Toyota’s Infringement of U.S. Patent No. 7,484,008)

81. Paragraphs 1-80 are incorporated by reference as if fully set forth herein.

82. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the ’008 Patent, by making, using, performing, testing, selling, leasing, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the ’008 Patent including, but not limited to, the Toyota and Lexus vehicle lines containing the MOST Intelligent Network Interface Controllers to power their infotainment systems including but not limited to the Toyota Lexus RX SUV, Lexus GS line, Toyota Land Cruiser, Toyota Prius, and Toyota Prius + (collectively, “Toyota Count II Automobiles”).

83. As an exemplary claim, Claim 75 of the ’008 Patent is reproduced below:

> *75. A method node configured to couple to a plurality of network elements, wherein the plurality of network elements includes a local area network and at least one peripheral electronic device coupled to the local area network, the gateway node comprising:*

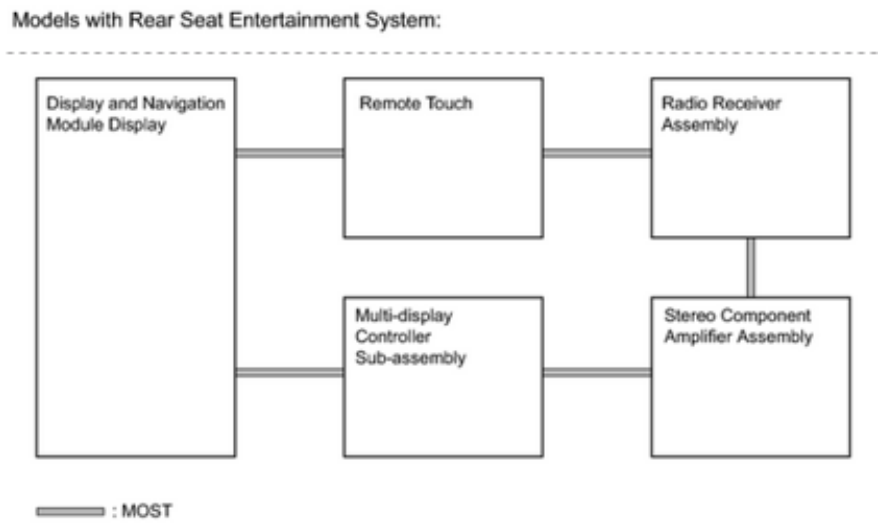
at least one interface port to receive data packets;

at least one real-time processor operable to configured to perform real-time operations on the data packets; and

at least one application processor configured to perform high level processing functions, wherein the at least one real-time interface processor is coupled between the at least one interface port and the at least one application processor.

84. Upon information and belief, Toyota and the Toyota Count II Automobiles perform each and every limitation of at least claim 75 of the '008 Patent. Upon information and belief, the Toyota Count II Automobiles include the Toyota Infotainment system, such as Entune, that use MOST.

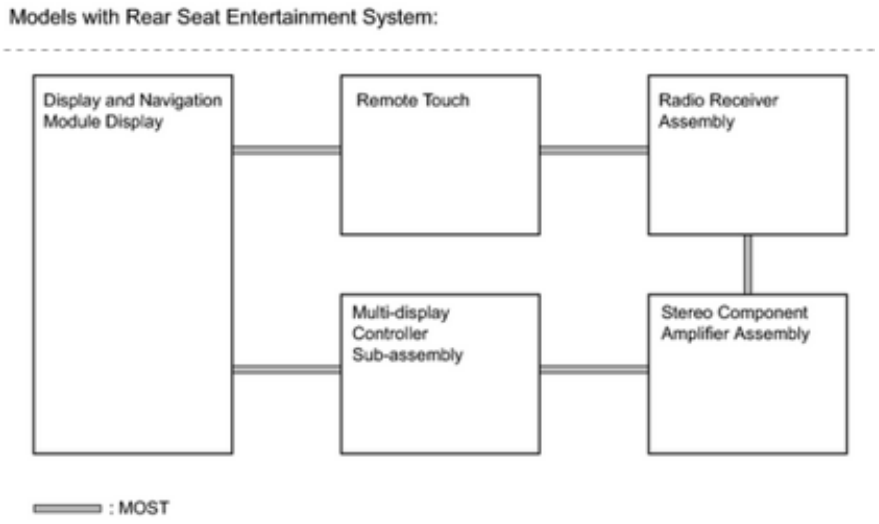
85. Upon information and belief, the infotainment architecture of the Toyota Count II Automobiles with navigation systems and rear seat entertainment systems include, *inter alia*, a plurality of network elements including at least one gateway node and at least one local area network coupled among at least one peripheral electronic device, as reproduced below.



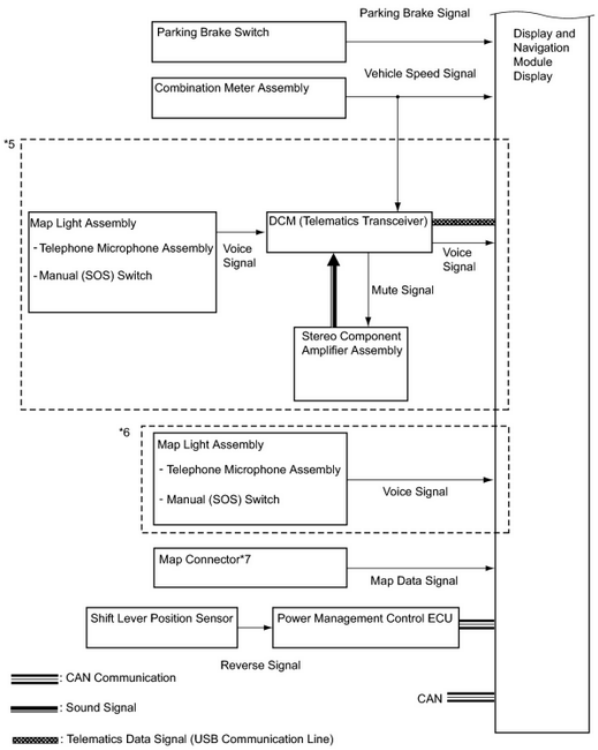
See https://techinfo.toyota.com/techInfoPortal/resources/jsp

86. Upon information and belief, the infotainment architecture of the Toyota Count II

Automobiles with navigation systems and rear seat entertainment systems include, *inter alia*, a gateway node. For example, the Display and Navigation Module Display Electronic Control Unit (ECU) of the infotainment systems of the Toyota Count II Automobiles with navigation systems and rear seat entertainment systems, *inter alia*, perform the role of gateway between local area networks, such as but not limited to, the CAN network and the MOST network. As a further example, the Display and Navigation Module Display Electronic Control Unit (ECU) of the infotainment systems of the Toyota Count II Automobiles is coupled to a peripheral electronic device, such as Power Management Control ECU, as reproduced below.



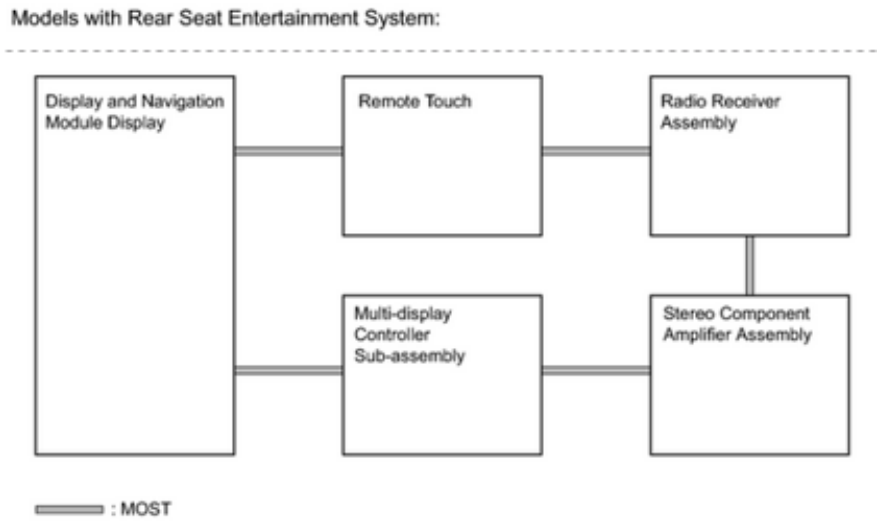
See Exhibit 23, Toyota Display and Navigation Module Display Electronic Control Unit at p. 1.



See Exhibit 23, Toyota Display and Navigation Module Display Electronic Control Unit at p. 1.

87. Upon information and belief, the Toyota Count II Automobiles include the gateway node comprising at least one interface port to receive data packets; at least one real-time processor operable to configured to perform real-time operations on the data packets; and at least one application processor configured to perform high level processing functions, wherein the at least one real-time interface processor is coupled between the at least one interface port and the at least one application processor.

88. Upon information and belief, the Display and Navigation Module Display ECU of the infotainment systems of the Toyota Count II Automobiles with navigation systems and rear seat entertainment systems, *inter alia*, is based on a standard MOST ECU architecture, that includes a MOST Intelligent Interface Controller (INIC) that manages the flow of information to and from the MOST bus, and an External Host Controller that is responsible for high level application processing, as reproduced below.



See Exhibit 23, Toyota Display and Navigation Module Display Electronic Control Unit at p. 1.

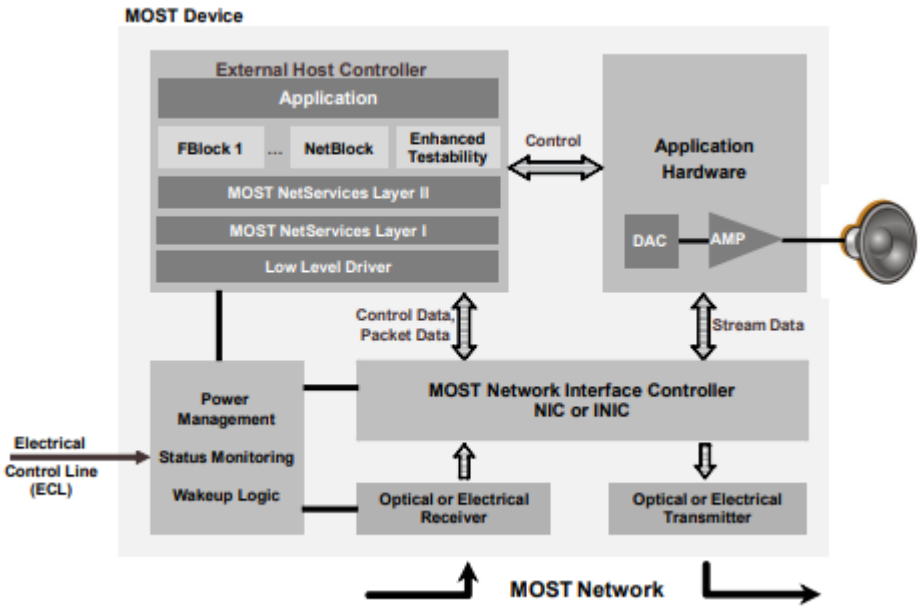


Exhibit 13, Most the Automotive Multimedia Network at p. 191.

89. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count II Automobiles equipped with Infotainment Systems, such as Entune™ that directly infringe one or more claims of the '008 Patent.

90. Additionally, Toyota has been, and currently is, actively inducing infringement of the

'008 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '008 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

91. Toyota knew of the '008 Patent, or should have known of the '008 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '008 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '008 Patent.

92. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '008 Patent with knowledge of the '008 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '008 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing and promoting the described hardware and/or software components and features in the Toyota Count II Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '008 Patent. As an illustrative example only, Toyota induces such acts of infringement by providing its customers instructions on how to use its products and services in a manner or configuration that infringe one or more claims of the '008 Patent.

93. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '008 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '008 Patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

94. Toyota has actively induced, and continues to actively induce infringement of one or

more claims of the '008 Patent by intending that others use, offer for sale, or sell in the United States, products and/or method embodied therein as covered by one or more claims of the '008 Patent, including but not limited to MOST networks implemented in, for example, the infotainment systems of the Toyota Count II Automobiles, such as Entune™. Toyota provides these products and practices the methods embodied within the products covered by one or more claims of the '008 Patent to others including customers, resellers, and end-user customers who in turn use, provide for use, offer for sale, or sell in the United States, the products and/or services and methods that directly infringe one or more claims of the '008 Patent.

95. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT III

(Toyota's Infringement of U.S. Patent No. 9,291,475)

96. Paragraphs 1-95 are incorporated by reference as if fully set forth herein.

97. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '475 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '475 Patent including, but not limited to, the Toyota Prius, Toyota Prius Prime, Toyota Corolla, Toyota Camry, Toyota Avalon, Toyota Sienna, Toyota 4Runner, Toyota Highlander, Toyota RAV4, Toyota Sequoia, Toyota Tacoma, and Toyota Tundra ("Toyota Count III Automobiles").[6]

98. As an exemplary claim, Claim 15 of the '475 Patent is reproduced below:

15. A device for notifying a recipient of a violation by a driver of a vehicle, the device

[6] *See, e.g.*, https://www.toyota.com/camry/camry-features/safety-and-convenience; https://www.toyota.com/corollahatchback/corollahatchback-features/safety; https://www.toyota.com/mirai/mirai-features/.

comprising:

an information module configured to determine, while the device is located within a vehicle, information about the vehicle;

a processing module configured to determine, while the device is located within the vehicle, that the vehicle committed a violation based on the information about the vehicle; and

a transmission module configured to send, to a remote computing system while the device is located within the vehicle, an indication of the violation;

wherein the remote computing device is configured to notify a recipient about the violation committed by the vehicle.

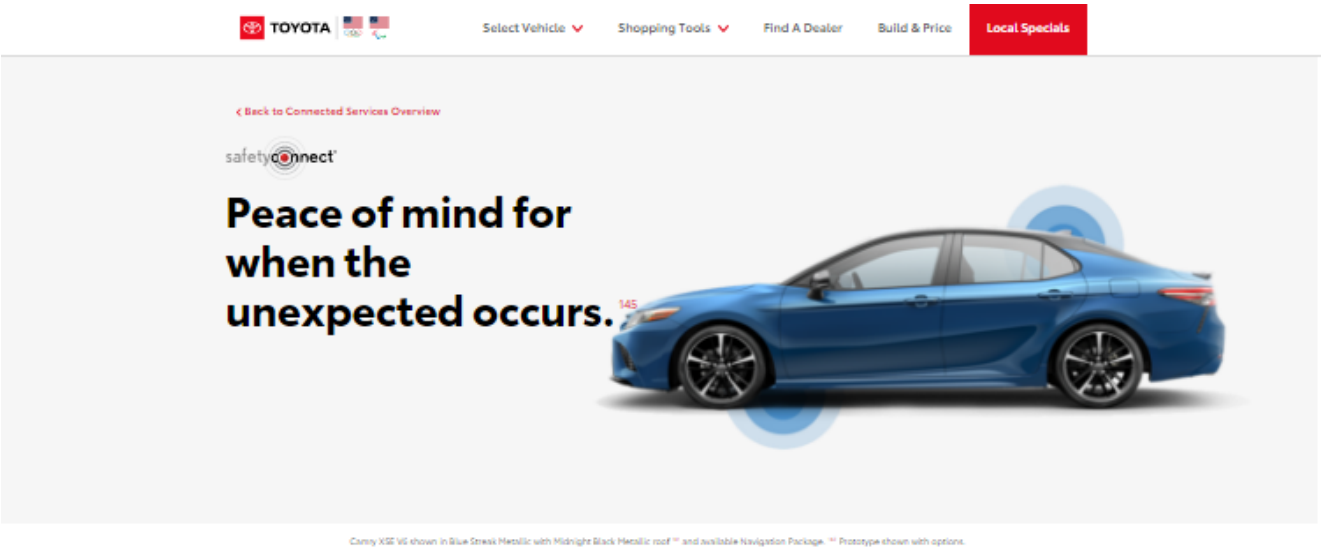
99. Upon information and belief, Toyota and the Toyota Count III Automobiles perform or can perform each and every limitation of at least claim 15 of the ’475 Patent.

100. Upon information and belief, the Toyota Count III Automobiles include and use a device, for example, the Toyota Safety Connect™, for notifying a recipient of a violation by a driver of a vehicle.

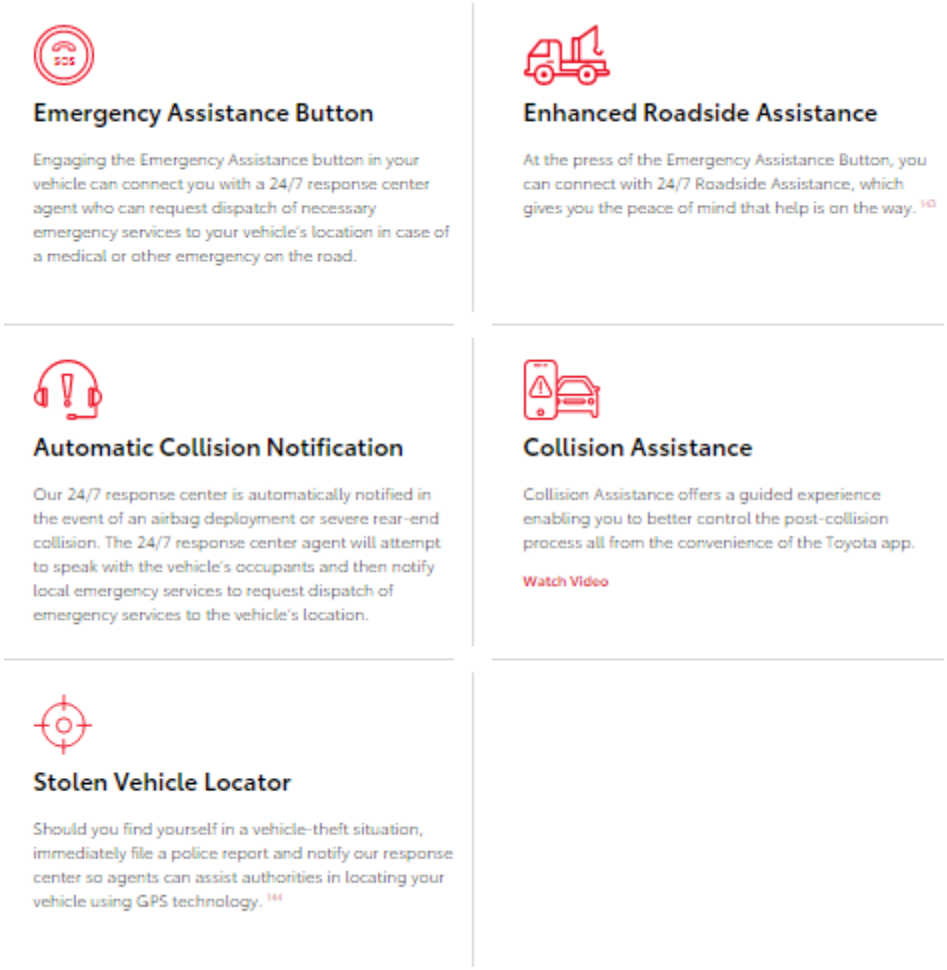
Safety Connect®

When the unexpected occurs, Safety Connect® [159] is ready to help. Drivers can be connected to our 24/7 response center at the touch of a button. In case of an accident or emergency, an agent can notify local emergency services to request dispatch to the vehicle's location. You also get 24/7 Roadside Assistance [144] and Stolen Vehicle Locator [145] to give you peace of mind that help is on the way so you can be on yours. One-year trial included. [143]

See, e.g., https://www.toyota.com/camry/camry-features/safety-and-convenience/.



https://www.toyota.com/connected-services/safetyconnect/.

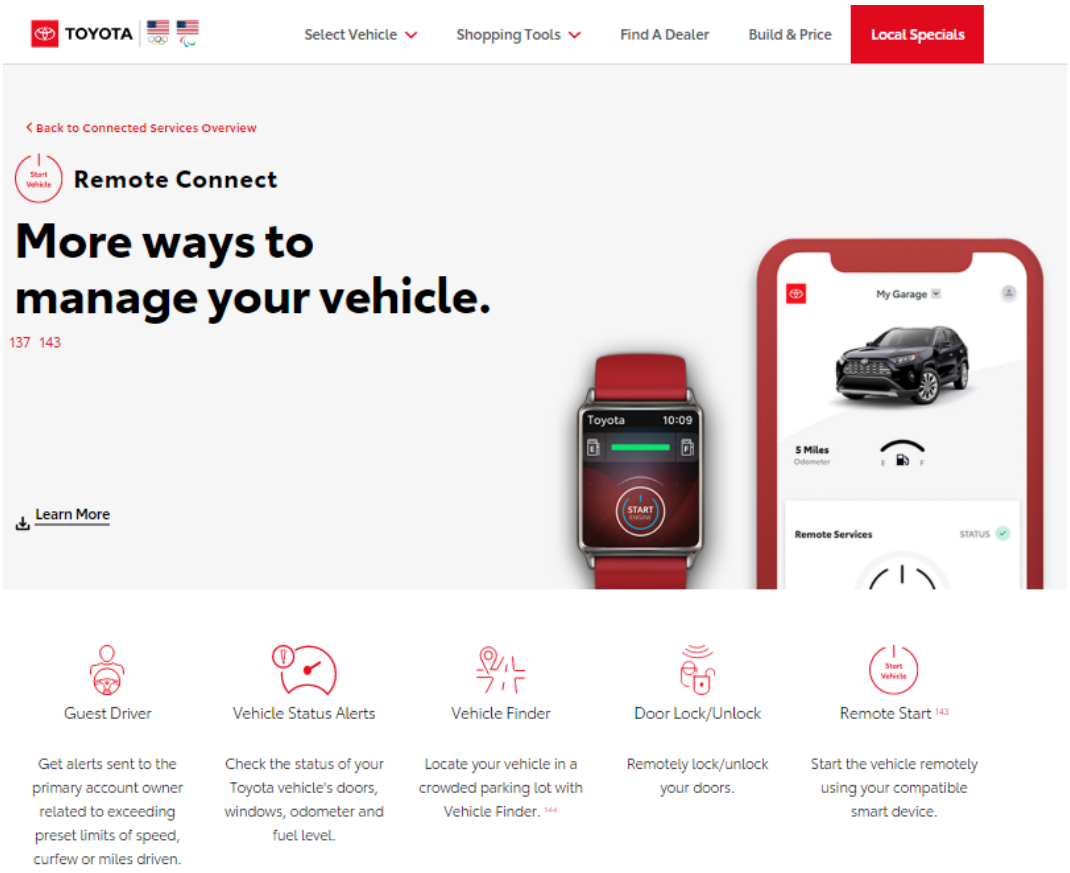


https://www.toyota.com/connected-services/safetyconnect/.

> Entune 3.0 also benefits from an improved mobile app that includes common features in this space, such as remote start and remote locking and unlocking of the car. Less common is the ability to set parameters for teen or guest drivers. Should the vehicle travel outside a set boundary area or exceed a specified speed limit, a notification is sent to the owner's phone.

https://www.caranddriver.com/news/a15344428/take-three-toyota-announces-entune-3-0/.

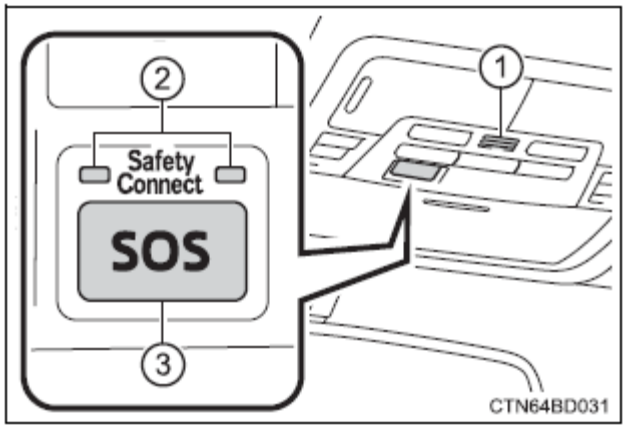
101. Upon information and belief, the Toyota Count III Automobiles include and use a device, for example, the Toyota Remote Connect™, for notifying a recipient of a violation by a driver of a vehicle.



See, e.g., https://www.toyota.com/connected-services/remoteconnect/.

102. Upon information and belief, the Toyota Count III Automobiles with the Toyota Safety Connect™ system and/or the Toyota Remote Connect™ system include an information module configured to determine, while the device is located within a vehicle, information about the vehicle. Upon information and belief, the Toyota Safety Connect™ system installed in the Toyota Count III Automobiles uses GPS and cellular signals to provide vehicle information.[7] Upon information and belief, the Toyota Remote Connect™ system installed in the Toyota Count III Automobiles uses GPS and cellular signals to provide vehicle information.[8]

[7] *See, e.g.*, http://jalopnik.com/5126350/toyota-safety-connect-lexus-enform-take-aim-at-gm-onstar-with-new-service.
[8] *See, e.g.*, https://www.toyota.com/connected-services/remoteconnect/.



See http://www.tohighlander.com/safety_connect-269.html.

See https://www.toyota.com/camry/camry-features/safety-and-convenience/.

103. Upon information and belief, the Toyota Count III Automobiles with the Toyota Safety Connect™ system and/or the Toyota Remote Connect™ system include a processing module configured to determine, while the device is located within the vehicle, that the vehicle committed a violation based on the information about the vehicle. Upon information and belief, the Toyota Safety Connect™ system in the Toyota Count III Automobiles determines the vehicle information such as speed and location.[9]

[9] *See, e.g.*, https://static.nhtsa.gov/odi/tsbs/2019/MC-10169324-9999.pdf.; https://techinfo.toyota.com/techInfoPortal/staticcontent/en/techinfo/html/prelogin/docs/cp/Toyota_LexusDCM.pdf; https://www.toyota.com/connected-services/safetyconnect/.

Upon information and belief, the Toyota Safety Connect™ system in the Toyota Count III Automobiles determines, for example, the occurrence of a collision (violation). Upon information and belief, the Toyota Remote Connect™ system in the Toyota Count III Automobiles determines the vehicle information such as speed and location.[10] Upon information and belief, the Toyota Remote Connect™ system in the Toyota Count III Automobiles determines, for example, that the driver is driving with a higher speed (violation).

> **Background**
> The Data Communication Module (DCM) in the subject vehicles is equipped with software to identify the location of the vehicle using the Global Positioning System (GPS) to support features of the Safety Connect system. Due to incorrect programming in the DCM software, after November 2nd, 2019, the GPS coordinates for this system will be calculated incorrectly. This will cause the system to use incorrect vehicle coordinates if one of the system's features is activated.

See https://static.nhtsa.gov/odi/tsbs/2019/MC-10169324-9999.pdf.

> Remote Connect
>
> Cloud connectivity also brings new customer features, including remote connectivity to the car through the new Entune mobile device app. Vehicle owners will be able to start and stop their car, lock and unlock the doors and even set parameters for guest drivers. Owners can receive warning alerts for excessive vehicle speed and geographic location outside the set radius.

See https://pressroom.toyota.com/toyota-shows-future-of-driver-vehicle-interaction-ces-2017/.

> Entune 3.0 also benefits from an improved mobile app that includes common features in this space, such as remote start and remote locking and unlocking of the car. Less common is the ability to set parameters for teen or guest drivers. Should the vehicle travel outside a set boundary area or exceed a specified speed limit, a notification is sent to the owner's phone.

See https://www.caranddriver.com/news/a15344428/take-three-toyota-announces-entune-3-0/.

104. Upon information and belief, the Toyota Count III Automobiles with the Toyota Safety

[10] *See, e.g.*, https://pressroom.toyota.com/toyota-shows-future-of-driver-vehicle-interaction-ces-2017/.

Connect™ system and/or Toyota Remote Connect™ system include a transmission module configured to send, to a remote computing system while the device is located within the vehicle, an indication of the violation, wherein the remote computing device is configured to notify a recipient about the violation committed by the vehicle. Upon information and belief, the Toyota Remote Connect™ system provides alerts, for example when the vehicle exceeds a certain speed, to or from remote systems or devices via LTE transmission.[11] Upon information and belief, when a collision (violation) occurs, information is sent to the remote computing system from the Toyota Safety Connect™ system. Upon information and belief, the Toyota Safety Connect™ system provides alerts, for example when the vehicle has encountered a collision.[12]

See https://www.toyota.com/camry/camry-features/safety-and-convenience/.

[11] *See, e.g.*, https://pressroom.toyota.com/toyota-shows-future-of-driver-vehicle-interaction-ces-2017/.
[12] *See, e.g.*, https://www.toyota.com/camry/camry-features/safety-and-convenience/.

Automatic Collision Notification

Our 24/7 response center is automatically notified in the event of an airbag deployment or severe rear-end collision. The 24/7 response center agent will attempt to speak with the vehicle's occupants and then notify local emergency services to request dispatch of emergency services to the vehicle's location.

See https://www.toyota.com/connected-services/safetyconnect/.

105. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count III Automobiles equipped with the Toyota Safety Connect™ system and/or Toyota Remote Connect™ system as covered by one or more claims of the '475 Patent.

106. Additionally, Toyota has been, and currently is, actively inducing infringement of the '475 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '475 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

107. Toyota knew of the '475 Patent, or should have known of the '475 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '475 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '475 Patent.

108. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '475 Patent with knowledge of the '475 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '475 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of

providing, promoting, and instructing its customers on how to use the claimed Toyota Safety Connect™ and/or Toyota Remote Connect™ feature in the Toyota Count III Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '475 Patent.

109. Toyota has also committed, and continues to commit, contributory infringement by, *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '475 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '475 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

110. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT IV

(Toyota's Infringement of U.S. Patent No. 7,382,771)

111. Paragraphs 1-110 are incorporated by reference as if fully set forth herein.

112. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '771 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '771 Patent including, but not limited to, the Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota 4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra, and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid that use the Toyota Entune™, Lexus Enform™

Wi-Fi Connect, and/or Wi-Fi Connect service (collectively, "Toyota Count IV Automobiles").

113. An exemplary claim, claim 1 of the '771 Patent is reproduced below:

1. A mobile wireless hot spot system, comprising:

a) a short-range, high-speed wireless access point operative to communicate with short-range client devices;

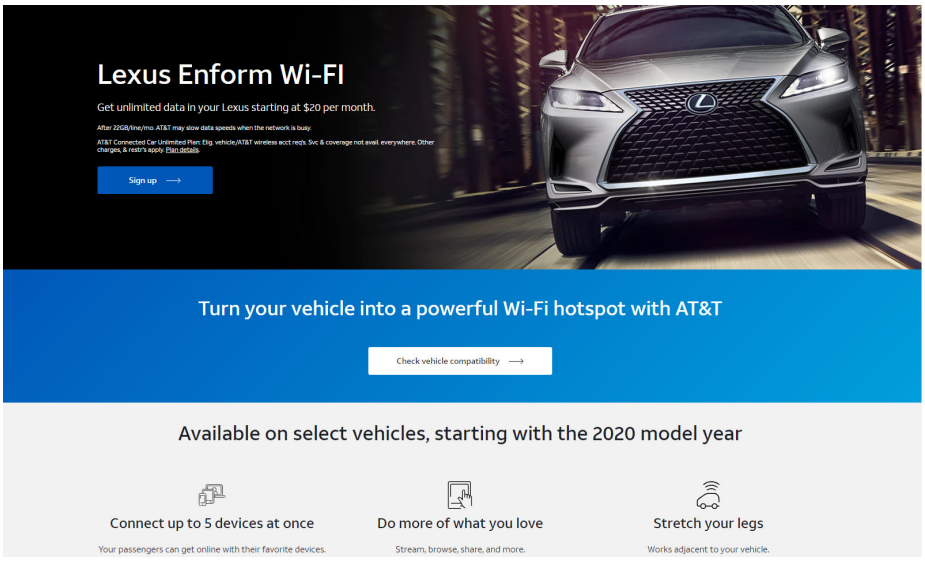
b) a long-range, wireless Internet access interface operative to communicate with the Internet; and

c) a Local Area Network (LAN) routing system managing the data path between said wireless access point and said Internet access interface,

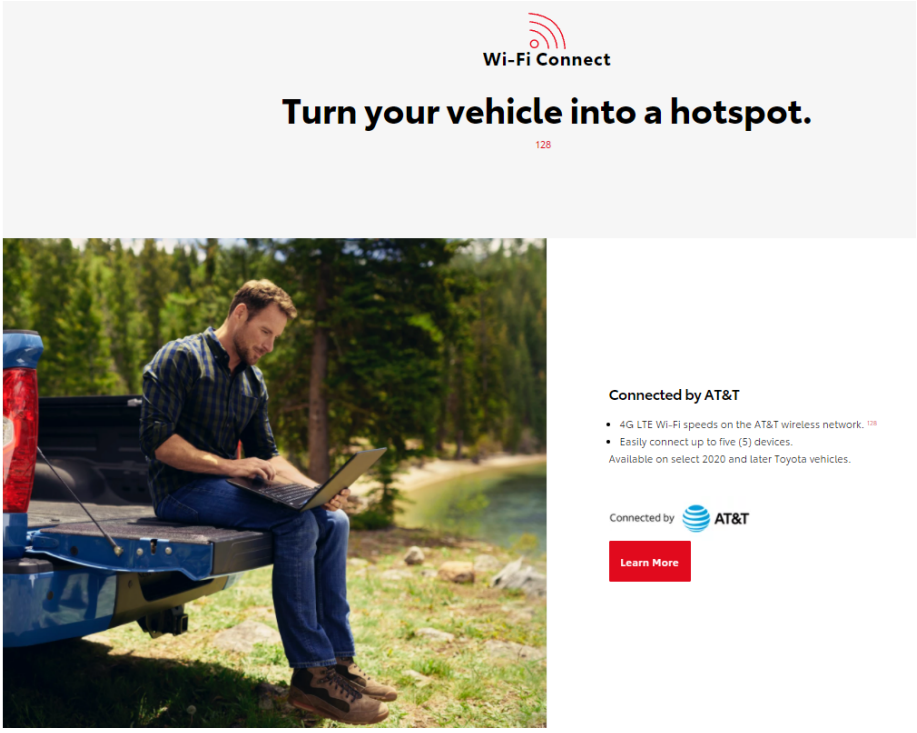
wherein said mobile wireless hotspot system is a stand-alone system that enables client devices configured for short-range, high-speed wireless Internet access to use said mobile wireless hotspot system to access the Internet without the need to access an external service controller server.

114. Upon information and belief, Toyota and the Toyota Count IV Automobiles are equipped with the Toyota Entune™, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service that perform or can perform each and every limitation of at least claim 1 of the '771 Patent.

115. Upon information and belief, the Toyota Count IV Automobiles are equipped with mobile wireless hot-spot systems as claimed in the '771 Patent. Upon information and belief, Internet connectivity for the Mobile Hot-Spot is provided by AT&T, Verizon Wireless and/or another Internet provider through a trial period and/or through a subscription.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

116. Upon information and belief, the Mobile Hot-Spot includes a short-range, high-speed wireless access point operative to communicate with short-range client devices, such as mobile phones or tablets. For example, the Mobile Hot-Spot allows users to connect to the Internet through Wi-Fi.

117. Upon information and belief, the Mobile Hot-Spot includes a long-range, wireless Internet access interface operative to communicate with the Internet through networks provided by AT&T, Verizon Wireless, and/or other Internet providers.

118. Upon information and belief, the Mobile Hot-Spot includes a Local Area Network (LAN) routing system which manages the data path between the wireless access point and the Internet access interface. Upon information and belief, the Mobile Hot-Spot is a stand-alone system that allows client devices to access the Internet, for example, through Wi-Fi, and connect to high-speed wireless Internet, including 4G. Upon information and belief the Mobile Hot-Spot stand-alone system that enables client devices configured for short-range, high-speed wireless Internet access to use said mobile wireless hotspot system to access the Internet without the need to access an external service controller server. As a result, user devices such as mobile phones and tablets are capable of utilizing the Mobile Hot-Spot without having to rely on the user device's own cellular capability to access the Internet.

119. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count IV Automobiles equipped with the Toyota Entune™ 3.0, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service that directly infringe one or more claims of the '771 Patent.

120. Additionally, Toyota has been, and currently is, actively inducing infringement of the '771 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '771 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

121. Toyota knew of the '771 Patent, or should have known of the '771 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '771 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '771 Patent.

122. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '771 Patent with knowledge of the '771 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '771 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action by intentionally providing hardware and/or software components in the Toyota Count IV Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '771 Patent and/or by directly or indirectly providing instructions on how to use its products, networks, and/or systems in a manner or configuration that infringe one or more claims of the '771 Patent.

123. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products, networks, and/or systems that when used cause the direct infringement of one or more claims of the '771 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '771 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

124. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT V

(Toyota's Infringement of U.S. Patent No. 9,232,158)

125. Paragraphs 1-124 are incorporated by reference as if fully set forth herein.

126. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '158 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '158 Patent including, but not limited to, the Toyota Camry, Toyota 4Runner, and Lexus

NX300 that are equipped with Bird's Eye View and/or Panoramic View Camera ("Toyota Count V Automobiles").

127. An exemplary claim, claim 9 of the '158 Patent is reproduced below:

9. A system comprising:

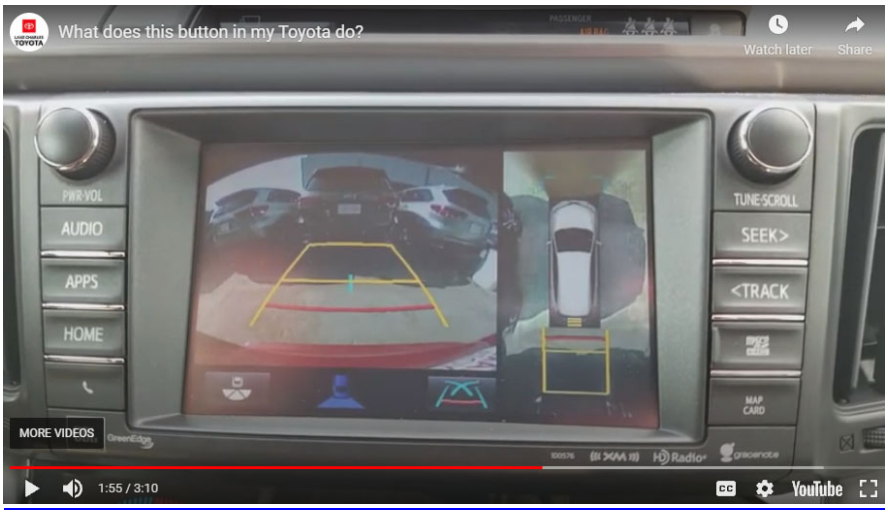
a plurality of channels, wherein each channel of the plurality of channels includes a sensor; and

a processing component coupled to the plurality of channels, wherein the processing component is configured to determine an integration time of each channel of the plurality of channels, wherein the processing component is configured to combine data from the plurality of channels received to provide an image.

128. For example, Toyota and the Toyota Count V Automobiles perform or can perform each and every limitation of at least claim 9 of the '158 Patent.

129. Upon information and belief, the Toyota Count V Automobiles are equipped with a processing component that determines the integration time of multiple channels and combines data to provide an image as claimed in the '158 Patent.

https://www.youtube.com/watch?v=Gn_ZUs09BZ4



https://www.youtube.com/watch?v=xKSAweOjREo

130. Upon information and belief, Bird's Eye View or Panoramic View includes a plurality of channels, wherein each channel of the plurality of channels includes a sensor. Upon information and belief, Bird's Eye View or Panoramic View uses front side and rear mounted cameras to display a panoramic overhead view of the area around the vehicle.

131. Upon information and belief, Bird's Eye View or Panoramic View includes a processing component coupled to the plurality of channels, wherein the processing component is configured to determine an integration time of each channel of the plurality of channels, wherein the processing component is configured to combine data from the plurality of channels received to provide an image. Bird's Eye View or Panoramic View includes hardware and software that combines the images from the cameras to create a combined image displaying a bird's eye view of the vehicle.

Toyota How-To: Bird's Eye View Camera with Perimeter Scan | Toyota

https://www.youtube.com/watch?v=K2PTeVgdYB0

132. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count V Automobiles equipped with Bird's Eye View and/or Panoramic View Camera that directly infringe one or more claims of the '158 Patent.

133. Additionally, Toyota has been, and currently is, actively inducing infringement of the '158 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '158 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

134. Toyota knew of the '158 Patent, or should have known of the '158 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '158 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '158 Patent.

135. Toyota committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '158 Patent with knowledge of the '158 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '158 Patent. As an

illustrative example only, Toyota induces such acts of infringement by its affirmative action of intentionally providing hardware and/or software components in a diverse range of Toyota and Lexus lines of vehicles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '158 Patent and/or by directly or indirectly providing instructions on how to use its products, networks, and/or systems in a manner or configuration that infringe one or more claims of the '158 Patent.

136. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products, networks, and/or systems that when used cause the direct infringement of one or more claims of the '158 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '158 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

137. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VI
(Toyota's Infringement of U.S. Patent No. 9,681,466)

138. Paragraphs 1-137 are incorporated by reference as if fully set forth herein.

139. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '466 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '466 Patent including, but not limited to, the Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota

4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra, and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid that use the Toyota Entune™, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service (collectively, "Toyota Count VI Automobiles").

140. As an exemplary claim, Claim 1 of the '466 Patent is reproduced below:

1. A user equipment (UE) comprising:

circuitry configured to receive, from a network device, a first transmission including a first parameter corresponding to each of a plurality of channels and a second transmission including an allocation message for an uplink resource from the network device;

a processor configured to allocate resources in response to the allocation message, wherein resources are allocated for data of each channel having a second parameter above zero prior to another channel's data for transmission having a third parameter less than or equal to zero; and

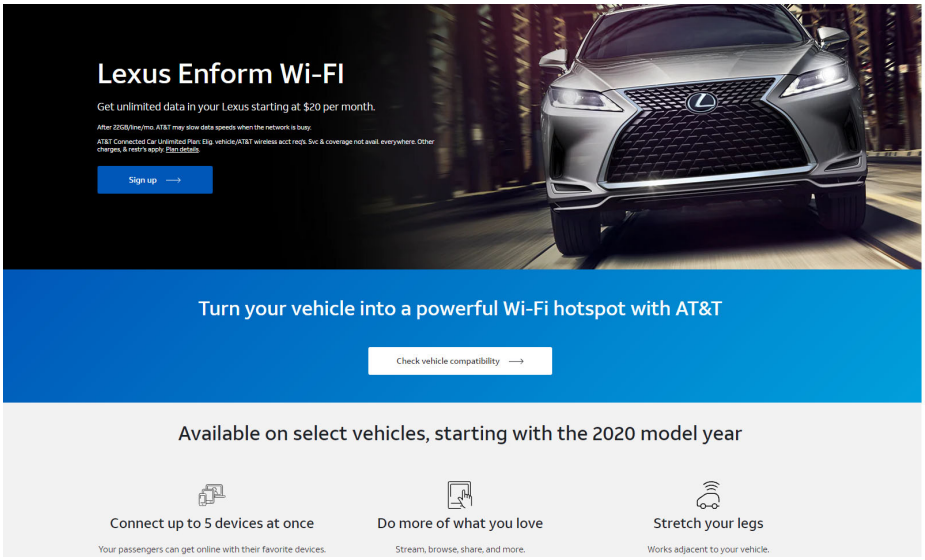
wherein the second parameter is derived from a first channel's first parameter and the third parameter is derived from a second channel's first parameter.

141. Upon information and belief, the Toyota Count VI Automobiles perform each and every limitation of at least claim 1 of the '466 Patent.

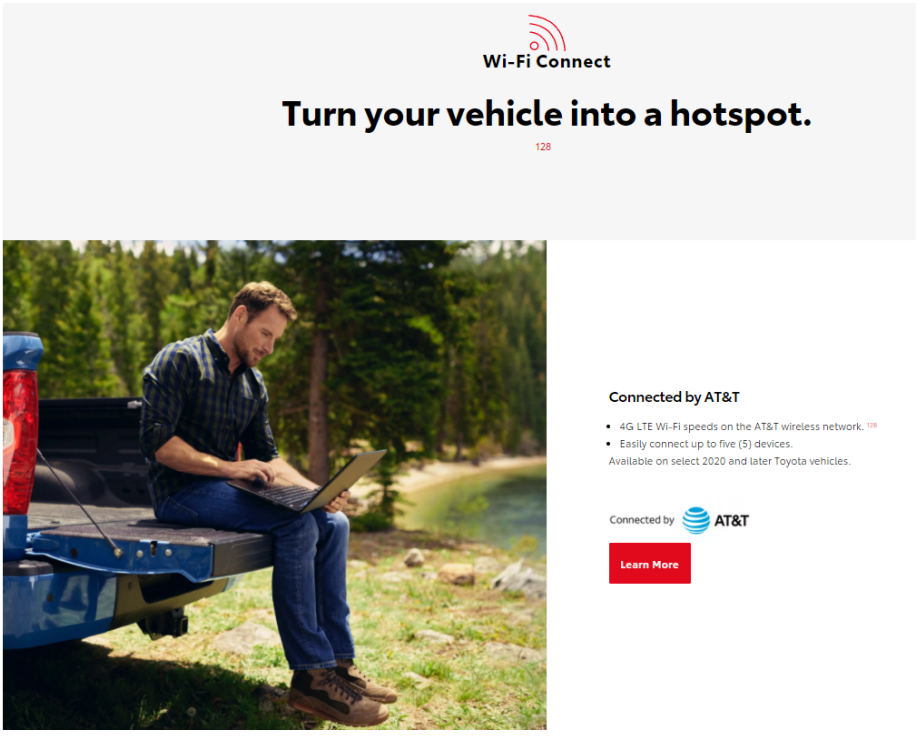
142. Upon information and belief, the Toyota Count VI Automobiles include a Continental Data Communications Module and/or other modules, which support's Toyota's Mobile Hotspot System. Upon information and belief, the Toyota Count VI Automobiles' Mobile Hotspot System can connect with 4G LTE to the Internet.

143. Upon information and belief, the Toyota Count VI Automobiles are equipped with mobile wireless hot-spot systems as claimed in the '466 Patent. Upon information and belief, Internet

connectivity for the Mobile Hot-Spot is provided by AT&T, Verizon Wireless and/or another Internet provider through, for example, a trial period and/or through a subscription.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

T-SB-0112-20 November 10, 2020

TOYOTA Technical Service Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10184542-9999.pdf

L-SB-0032-20 August 26, 2020

LEXUS Technical Service Information Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10179741-9999.pdf

144. Upon information and belief, the Toyota Count VI Automobiles' Mobile Hotspot, and/or 4G LTE modem are compliant with and use the 3GPP standards.

145. The Toyota Count VI Automobiles contain user equipment (UE).

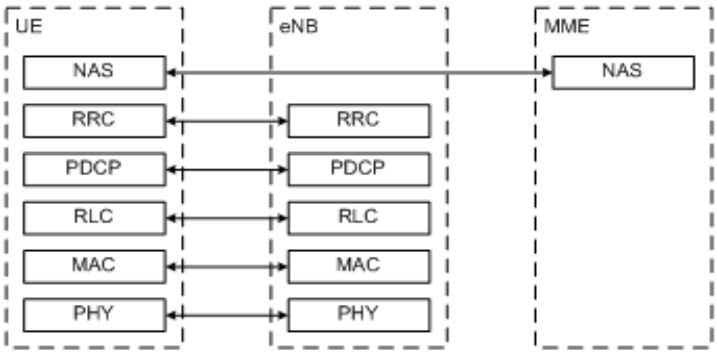


Figure 4.3.2-1: Control-plane protocol stack

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 19.

7.2 RRC protocol states & state transitions

- At PDCP/RLC/MAC level:
  - UE can transmit and/or receive data to/from network;
  - UE monitors control signalling channel for shared data channel to see if any transmission over the shared data channel has been allocated to the UE;

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at pp. 37, 38.

146. The Toyota Count VI Automobiles contain circuitry configured to receive, from a network device, a first transmission including a first parameter corresponding to each of a plurality of channels and a second transmission including an allocation message for an uplink resource from the network device.

4.4 Functions

The RRC protocol includes the following main functions:

- QoS control including assignment/ modification of semi-persistent scheduling (SPS) configuration information for DL and UL, assignment/ modification of parameters for UL rate control in the UE, i.e. allocation of a priority and a prioritised bit rate (PBR) for each RB;

See Exhibit 15, 3GPP TS 36.331 V8.21.0 at p. 19.

11.1 Basic Scheduler Operation

MAC in eNB includes dynamic resource schedulers that allocate physical layer resources for the DL-SCH and UL-SCH transport channels. Different schedulers operate for the DL-SCH and UL-SCH.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 67.

11.1.2 Uplink Scheduling

In the uplink, E-UTRAN can dynamically allocate resources (PRBs and MCS) to UEs at each TTI via the C-RNTI on PDCCH(s). A UE always monitors the PDCCH(s) in order to find possible allocation for uplink transmission when its downlink reception is enabled (activity governed by DRX when configured).

See id.

147. Upon information and belief, the Toyota Count VI Automobiles include a processor configured to allocate resources in response to the allocation message, wherein resources are allocated for data of each channel having a second parameter above zero prior to another channel's data for transmission having a third parameter less than or equal to zero.

4.2.1 MAC Entities

E-UTRA defines two MAC entities; one in the UE and one in the E-UTRAN. These MAC entities handle the following transport channels:

- Uplink Shared Channel(s) (UL-SCH);
- Random Access Channel(s) (RACH);

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 8.

5.4.1 UL Grant reception

In order to transmit on the UL-SCH the UE must have a valid uplink grant (except for non-adaptive HARQ retransmissions) which it may receive dynamically on the PDCCH or in a Random Access Response or which may be configured semi-persistently. To perform requested transmissions, the MAC layer receives HARQ information from

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 20.

5.4.3 Multiplexing and assembly

5.4.3.1 Logical channel prioritization

The UE shall perform the following Logical Channel Prioritization procedure when a new transmission is performed:

- The UE shall allocate resources to the logical channels in the following steps:
  - Step 1: All the logical channels with Bj > 0 are allocated resources in a decreasing priority order. If the PBR of a radio bearer is set to "infinity", the UE shall allocate resources for all the data that is available for transmission on the radio bearer before meeting the PBR of the lower priority radio bearer(s);
  - Step 2: the UE shall decrement Bj by the total size of MAC SDUs served to logical channel j in Step 1

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 24.

148. Upon information and belief, Toyota Count VI Automobiles contain a system wherein the second parameter is derived from a first channel's first parameter and the third parameter is derived from a second channel's first parameter.

5.4.3 Multiplexing and assembly

5.4.3.1 Logical channel prioritization

RRC controls the scheduling of uplink data by signalling for each logical channel: *priority* where an increasing *priority* value indicates a lower priority level, *prioritisedBitRate* which sets the Prioritized Bit Rate (PBR), *bucketSizeDuration* which sets the Bucket Size Duration (BSD).

The UE shall maintain a variable Bj for each logical channel j. Bj shall be initialized to zero when the related logical channel is established, and incremented by the product PBR × TTI duration for each TTI, where PBR is Prioritized Bit Rate of logical channel j. However, the value of Bj can never exceed the bucket size and if the value of Bj is larger than the bucket size of logical channel j, it shall be set to the bucket size. The bucket size of a logical channel is equal to PBR × BSD, where PBR and BSD are configured by upper layers.

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 24.

149. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count VI Automobiles equipped with a Mobile Hotspot System and/or 4G LTE modem that directly infringe one or more claims of the ’466 Patent.

150. Additionally, Toyota has been, and currently is, actively inducing infringement of the ’466 Patent under 35 U.S.C. § 271(b) and contributorily infringing the ’466 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

151. Toyota knew of the ’466 Patent, or should have known of the ’466 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the ’466 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’466 Patent.

152. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the ’466 Patent with knowledge of the ’466 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the ’466 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing, promoting, and instructing its customers on how to use the claimed Mobile Hotspot System

and/or 4G LTE modem and connectivity features in the Toyota Count VI Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '466 Patent.

153. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '466 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '466 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

154. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VII

(Toyota's Infringement of U.S. Patent No. 10,292,138)

155. Paragraphs 1-154 are incorporated by reference as if fully set forth herein.

156. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '138 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '138 Patent including, but not limited to, the Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota 4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra, and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid that use the Toyota Entune™, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service (collectively, "Toyota Count VII Automobiles").

157. An exemplary claim, claim 1 of the ’138 Patent is reproduced below:

1. A user equipment (UE) comprising:

a processor communicatively coupled to a transmitter and circuitry configured to receive; and

the processor is configured to:

cause the circuitry to receive parameters associated with a plurality of radio bearers,

determine a plurality of buffer occupancies, wherein each of the plurality of buffer occupancies is associated with one or more radio bearers of the plurality of radio bearers,

cause the transmitter to transmit a message including the plurality of buffer occupancies to a network,

cause the circuitry to receive a single allocation of uplink resources,

select data from the plurality of radio bearers for transmission using the single allocation of uplink resources, wherein the selection of the data occurs using a first iteration and a second iteration,

wherein in the first iteration, the selection of the data is selected from a subset of the plurality of radio bearers based on the received parameters,

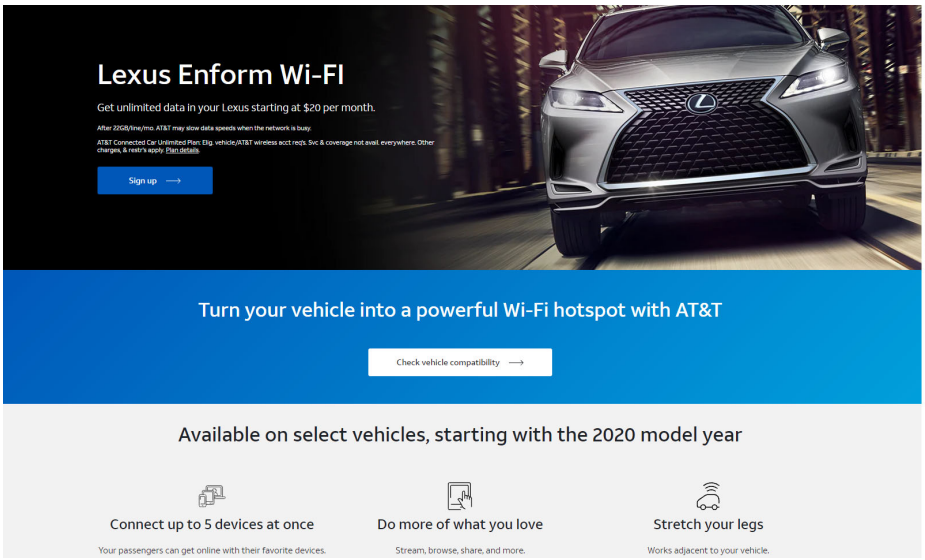
wherein in the second iteration, the selection of the data is based on buffered data for respective radio bearers, and

cause the transmitter to transmit a signal including the selected data.

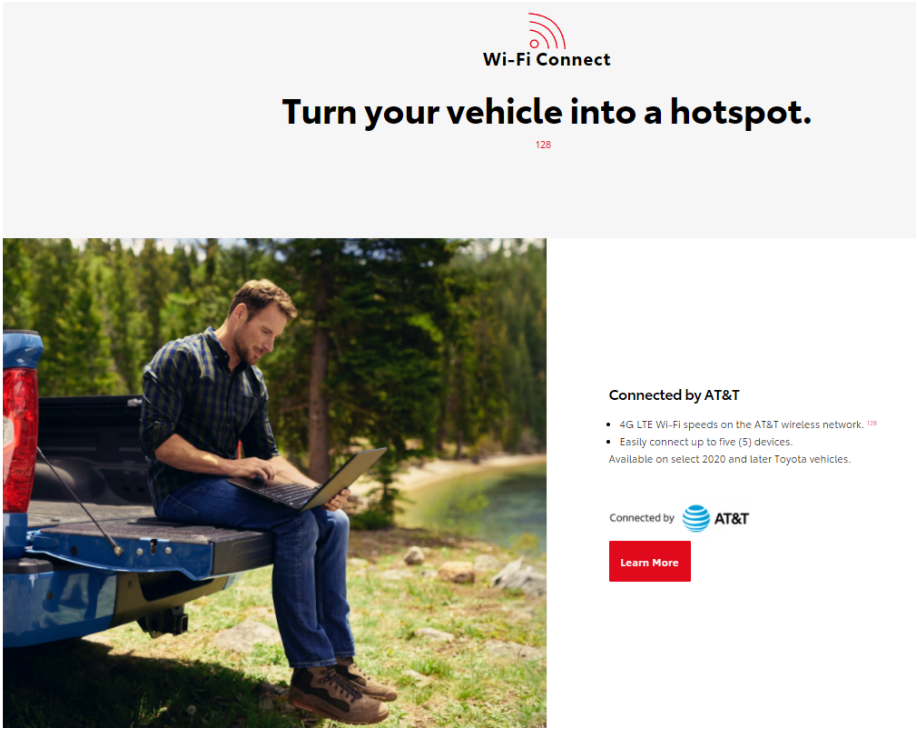
158. Upon information and belief, the Toyota Count VII Automobiles perform each and every limitation of at least claim 1 of the ’138 Patent.

159. Upon information and belief, the Toyota Count VII Automobiles include a Continental Data Communications Module and/or other modules, which support's Toyota's Mobile Hotspot System. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot System can connect with 4G LTE to the Internet.

160. Upon information and belief, the Toyota Count VII Automobiles are equipped with mobile wireless hot-spot systems as claimed in the '138 Patent. Upon information and belief, Internet connectivity for the Mobile Hot-Spot is provided by AT&T, Verizon Wireless and/or another Internet provider through, for example, a trial period and/or through a subscription.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

T-SB-0112-20 **November 10, 2020**

TOYOTA
Technical Service Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10184542-9999.pdf

L-SB-0032-20 **August 26, 2020**

LEXUS
Technical Service Information Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

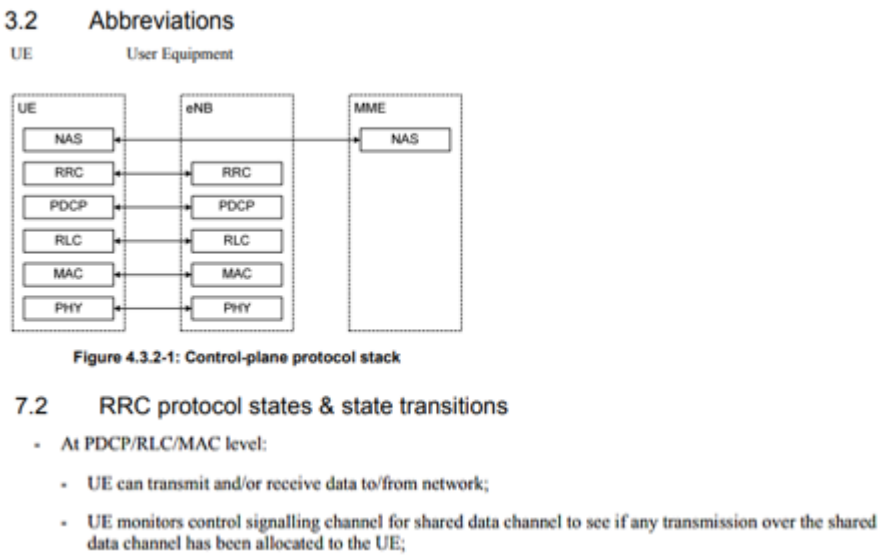
Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10179741-9999.pdf

161. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot, and/or 4G LTE modem are compliant with and use the 3GPP standards.

162. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor communicatively coupled to a transmitter and circuitry configured to receive. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor which is communicatively coupled to a transmitter and circuitry configured to receive.



3.2 Abbreviations

UE User Equipment

Figure 4.3.2-1: Control-plane protocol stack

7.2 RRC protocol states & state transitions

- At PDCP/RLC/MAC level:
  - UE can transmit and/or receive data to/from network;
  - UE monitors control signalling channel for shared data channel to see if any transmission over the shared data channel has been allocated to the UE;

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at pp. 12, 15, 19, 37, 38.

163. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor further configured to cause the circuitry to receive parameters associated with a plurality of radio bearers.

4.3.2 Control plane

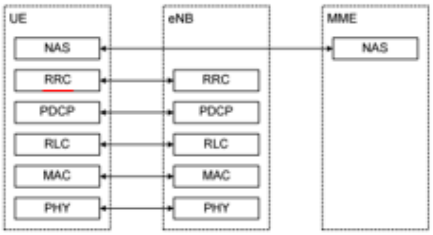


Figure 4.3.2-1: Control-plane protocol stack

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 19.

5.4.3 Multiplexing and assembly

5.4.3.1 Logical channel prioritization

The Logical Channel Prioritization procedure is applied when a new transmission is performed.

RRC controls the scheduling of uplink data by signalling for each logical channel: *priority* where an increasing *priority* value indicates a lower priority level, *prioritisedBitRate* which sets the Prioritized Bit Rate (PBR), *bucketSizeDuration* which sets the Bucket Size Duration (BSD).

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 24.

6.3.2 Radio resource control information elements

***LogicalChannelConfig* information element**

```
-- ASN1START

LogicalChannelConfig ::=            SEQUENCE {
    ul-SpecificParameters               SEQUENCE {
        priority                            INTEGER (1..16),
        prioritisedBitRate                  ENUMERATED {
                                                kBps0, kBps8, kBps16, kBps32, kBps64, kBps128,
                                                kBps256, infinity, spare8, spare7, spare6,
                                                spare5, spare4, spare3, spare2, spare1},
        bucketSizeDuration                  ENUMERATED {
                                                ms50, ms100, ms150, ms300, ms500, ms1000, spare2,
                                                spare1},
```

See Exhibit 15, 3GPP TS 36.331 V8.21.0 at pp. 116, 118.

164. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor configured to further determine a plurality of buffer occupancies, wherein each of the plurality of buffer occupancies is associated with one or more radio bearers of the plurality of radio bearers.

5.4.5 Buffer Status Reporting

The Buffer Status reporting procedure is used to provide the serving eNB with information about the amount of data available for transmission in the UL buffers of the UE. RRC controls BSR reporting by configuring the two timers *periodicBSR-Timer* and *retxBSR-Timer* and by, for each logical channel, optionally signalling *logicalChannelGroup* which allocates the logical channel to an LCG [8].

For the Buffer Status reporting procedure, the UE shall consider all radio bearers which are not suspended and may consider radio bearers which are suspended.

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at Sec. 5.4.5 at p. 25.

6 Layer 2

- The multiplexing of several logical channels (i.e. radio bearers) on the same transport channel (i.e. transport block) is performed by the MAC sublayer;

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at Fig. 6-2 at pp. 31, 32.

165. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot, and/or 4G LTE modem comprise a processor configured to further cause the transmitter to transmit a message including the plurality of buffer occupancies to a network.

4.3.2 Control plane

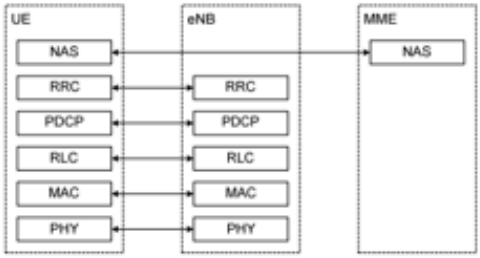


Figure 4.3.2-1: Control-plane protocol stack

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at pp. 18, 19.

5.4.5 Buffer Status Reporting

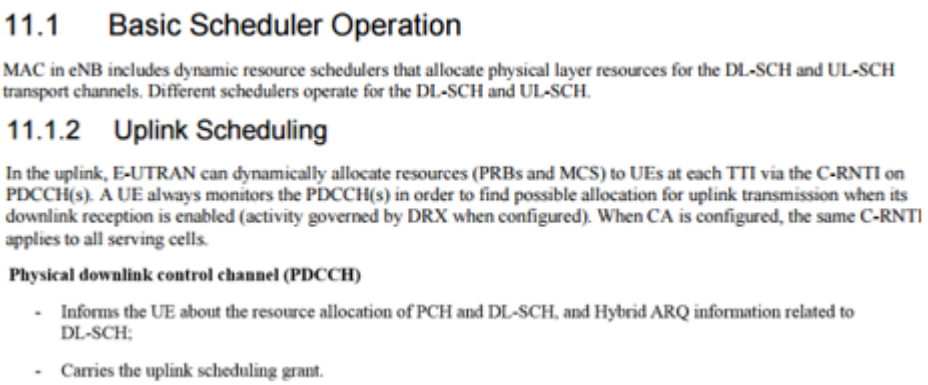
The Buffer Status reporting procedure is used to provide the serving eNB with information about the amount of data available for transmission in the UL buffers of the UE. RRC controls BSR reporting by configuring the two timers *periodicBSR-Timer* and *retxBSR-Timer* and by, for each logical channel, optionally signalling *logicalChannelGroup* which allocates the logical channel to an LCG [8].

For the Buffer Status reporting procedure, the UE shall consider all radio bearers which are not suspended and may consider radio bearers which are suspended.

A Buffer Status Report (BSR) shall be triggered if any of the following events occur:

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 25.

166. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor configured to further cause the circuitry to receive a single allocation of uplink resources.



11.1 Basic Scheduler Operation

MAC in eNB includes dynamic resource schedulers that allocate physical layer resources for the DL-SCH and UL-SCH transport channels. Different schedulers operate for the DL-SCH and UL-SCH.

11.1.2 Uplink Scheduling

In the uplink, E-UTRAN can dynamically allocate resources (PRBs and MCS) to UEs at each TTI via the C-RNTI on PDCCH(s). A UE always monitors the PDCCH(s) in order to find possible allocation for uplink transmission when its downlink reception is enabled (activity governed by DRX when configured). When CA is configured, the same C-RNTI applies to all serving cells.

Physical downlink control channel (PDCCH)

- Informs the UE about the resource allocation of PCH and DL-SCH, and Hybrid ARQ information related to DL-SCH;
- Carries the uplink scheduling grant.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at pp. 67, 24.

167. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor configured to further select data from the plurality of radio bearers for transmission using the single allocation of uplink resources. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor that selects the data for transmission and allocates resources for each logical channel (i.e. radio bearer) for transmission on the allocated uplink resources. Upon information and belief, in the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem, the selection of the data occurs using a first iteration and a second iteration. Upon information and belief, in the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem, in the first iteration, the selection of the data is selected from a subset of the plurality of radio bearers based on the received parameters. Upon information and belief, in the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem, in the second iteration, the selection of the data is based on buffered data for respective radio bearers.

4.2.1 MAC Entities

E-UTRA defines two MAC entities; one in the UE and one in the E-UTRAN. These MAC entities handle the following transport channels:

- Uplink Shared Channel (UL-SCH);
- Random Access Channel(s) (RACH).

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 8.

5.4.3.1 Logical channel prioritization

The Logical Channel Prioritization procedure is applied when a new transmission is performed.

RRC controls the scheduling of uplink data by signalling for each logical channel: *priority* where an increasing *priority* value indicates a lower priority level, *prioritisedBitRate* which sets the Prioritized Bit Rate (PBR), *bucketSizeDuration* which sets the Bucket Size Duration (BSD).

The UE shall maintain a variable Bj for each logical channel j. Bj shall be initialized to zero when the related logical channel is established, and incremented by the product PBR × TTI duration for each TTI, where PBR is Prioritized Bit Rate of logical channel j. However, the value of Bj can never exceed the bucket size and if the value of Bj is larger than the bucket size of logical channel j, it shall be set to the bucket size. The bucket size of a logical channel is equal to PBR × BSD, where PBR and BSD are configured by upper layers.

The UE shall perform the following Logical Channel Prioritization procedure when a new transmission is performed:

- The UE shall allocate resources to the logical channels in the following steps:
  - Step 1: All the logical channels with Bj > 0 are allocated resources in a decreasing priority order. If the PBR of a radio bearer is set to "infinity", the UE shall allocate resources for all the data that is available for transmission on the radio bearer before meeting the PBR of the lower priority radio bearer(s);
  - Step 2: the UE shall decrement Bj by the total size of MAC SDUs served to logical channel j in Step 1

NOTE: The value of Bj can be negative.

  - Step 3: if any resources remain, all the logical channels are served in a strict decreasing priority order (regardless of the value of Bj) until either the data for that logical channel or the UL grant is exhausted, whichever comes first. Logical channels configured with equal priority should be served equally.

See Exhibit 16, 3GPP TS 36.321 V8.12.0 at p. 24.

168. Upon information and belief, the Toyota Count VII Automobiles' Mobile Hotspot and/or 4G LTE modem comprise a processor configured to further cause the transmitter to transmit a signal including the selected data.

13.1 Bearer service architecture

- A data radio bearer transports the packets of an EPS bearer between a UE and an eNB. When a data radio bearer exists, there is a one-to-one mapping between this data radio bearer and the EPS bearer/E-RAB.

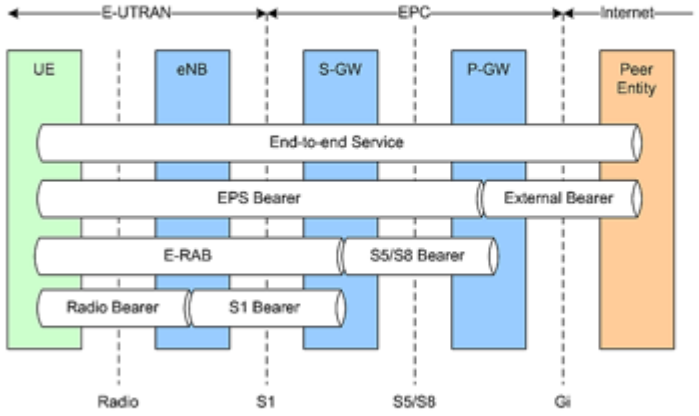


Figure 13.1-1: EPS Bearer Service Architecture

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 71.

169. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count VII Automobiles equipped with a Mobile Hotspot System and/or 4G LTE modem that directly infringe one or more claims of the '138 Patent.

170. Additionally, Toyota has been, and currently is, actively inducing infringement of the '138 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '138 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

171. Toyota knew of the '138 Patent, or should have known of the '138 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '138 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '138 Patent.

172. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '138 Patent with knowledge of the '138 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '138 Patent. As an illustrative example only, Toyota induces such acts of infringement by their affirmative action of providing, promoting, and instructing its customers on how to use Toyota's Mobile Hotspot systems and connectivity features in the Toyota Count VII Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '138 Patent.

173. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '138 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '138 Patent and is not a staple article or commodity of commerce suitable for a

substantial non-infringing use.

174. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VIII

(Toyota's Infringement of U.S. Patent No. 8,953,641)

175. Paragraphs 1-174 are incorporated by reference as if fully set forth herein.

176. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '641 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '641 Patent including, but not limited to, the Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota 4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra, and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid that use the Toyota Entune™, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service (collectively, "Toyota Count VIII Automobiles").

177. As an exemplary claim, Claim 11 of the '641 Patent, is reproduced below:

11. A mobile station, comprising:

circuitry configured to receive broadcast information to access an orthogonal frequency division multiple access (OFDMA) system, wherein the broadcast information is received only in a first band having a first bandwidth and the broadcast information is carried by a plurality of groups of subcarriers with each group having a plurality of contiguous subcarriers; and

circuitry configured to determine a second bandwidth of a second band that is

associated with the OFDMA system based upon the broadcast information received in the first band, wherein a second bandwidth of the second band is greater than the first bandwidth of the first band,

wherein the first band is contained within the second band,

wherein a data channel is carried by at least one subcarrier group of the second band,

wherein the plurality of contiguous subcarriers have fixed spacing,

wherein a number of usable subcarriers is adjustable to realize a variable band,

wherein the number of usable subcarriers is determined based on a plurality of operating channel bandwidths, and

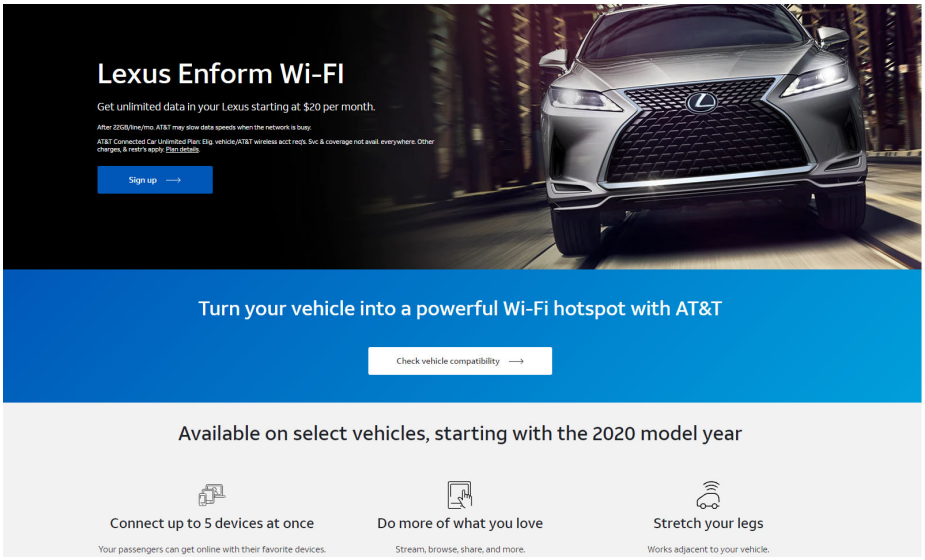
wherein the first band is defined as a frequency segment with a bandwidth that is not greater than a smallest operating channel bandwidth among the plurality of operating channel bandwidths, the first band having a same value for the plurality of operating channel bandwidths wherein the mobile station is configured to operate within the plurality of operating channel bandwidths.

178. Upon information and belief, the Toyota Count VIII Automobiles perform each and every limitation of at least claim 1 of the ’641 Patent.

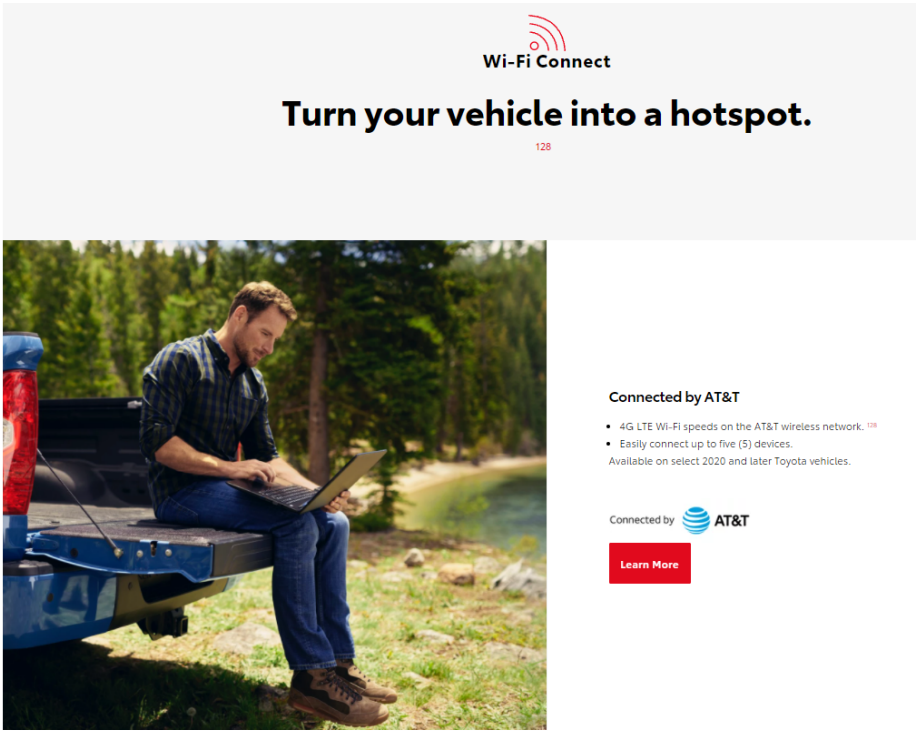
179. Upon information and belief, the Toyota Count VIII Automobiles include a Continental Data Communications Module and/or other modules, which support’s Toyota’s Mobile Hotspot System. Upon information and belief, the Toyota Count VIII Automobiles’ Mobile Hotspot System that can connect with 4G LTE to the Internet.

180. Upon information and belief, the Toyota Count VIII Automobiles are equipped with mobile wireless hot-spot systems as claimed in the ’641 Patent. Upon information and belief, Internet

connectivity for the Mobile Hot-Spot is provided by AT&T, Verizon Wireless and/or another Internet provider through, for example, a trial period and/or through a subscription.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

T-SB-0112-20 November 10, 2020

TOYOTA Technical Service Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10184542-9999.pdf

L-SB-0032-20 August 26, 2020

LEXUS Technical Service Information Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10179741-9999.pdf

181. Upon information and belief, the Toyota Count VIII Automobiles' Mobile Hotspot and/or 4G LTE modem are compliant with and use the 3GPP standards.

182. Upon information and belief, the Toyota Count VIII Automobiles include circuitry configured to receive broadcast information to access an orthogonal frequency division multiple access (OFDMA) system.[13]

[13] Exhibit 14, 3GPP TS 36.300 at pp. 18, 19, 15, 25.

4.3.2 Control plane

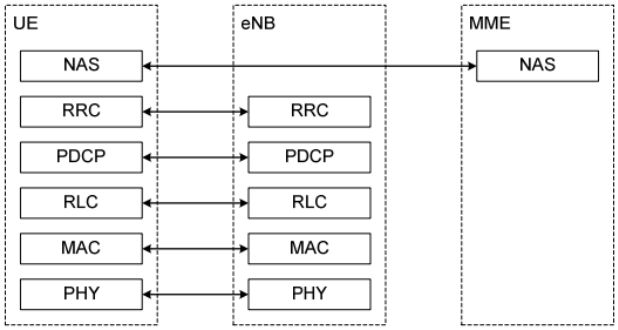


Figure 4.3.2-1: Control-plane protocol stack

4 Overall architecture

The E-UTRAN consists of eNBs, providing the E-UTRA user plane (PDCP/RLC/MAC/PHY) and control plane (RRC) protocol terminations towards the UE. The eNBs are interconnected with each other by means of the X2 interface. The eNBs are also connected by means of the S1 interface to the EPC (Evolved Packet Core), more specifically to the MME (Mobility Management Entity) by means of the S1-MME and to the Serving Gateway (S-GW) by means of the S1-U. The S1 interface supports a many-to-many relation between MMEs / Serving Gateways and eNBs.

4.3.2 Control plane

- RRC (terminated in eNB on the network side) performs the functions listed in subclause 7, e.g.:
  - Broadcast;

5.1 Downlink Transmission Scheme

5.1.1 Basic transmission scheme based on OFDM

The downlink transmission scheme is based on conventional OFDM using a cyclic prefix. The OFDM sub-carrier spacing is $\Delta f = 15$ kHz. 12 consecutive sub-carriers during one slot correspond to one downlink *resource block*. In the frequency domain, the number of resource blocks, N_{RB}, can range from $N_{RB\text{-}min} = 6$ to $N_{RB\text{-}max} = 110$.

See Exhibit 14, 3GPP TS 36.300 at pp. 18, 19, 15, 25.

183. Upon information and belief, broadcast information is received only in a first band having a first bandwidth.[14]

[14] *See* Exhibit 17, 3GPP TS 36.211 V8.9.0 at Sec. 6.6.4, pp. 56, 57, 8.

6.6 Physical broadcast channel

6.6.4 Mapping to resource elements

The block of complex-valued symbols $y^{(p)}(0),\ldots,y^{(p)}(M_{\text{symb}}-1)$ for each antenna port is transmitted during 4 consecutive radio frames starting in each radio frame fulfilling $n_f \bmod 4 = 0$ and shall be mapped in sequence starting with $y(0)$ to resource elements (k,l). The mapping to resource elements (k,l) not reserved for transmission of reference signals shall be in increasing order of first the index k, then the index l in slot 1 in subframe 0 and finally the radio frame number. The resource-element indices are given by

$$k = \frac{N_{\text{RB}}^{\text{DL}} N_{\text{sc}}^{\text{RB}}}{2} - 36 + k', \qquad k' = 0,1,\ldots,71$$
$$l = 0,1,\ldots,3$$

where resource elements reserved for reference signals shall be excluded. The mapping operation shall assume cell-specific reference signals for antenna ports 0-3 being present irrespective of the actual configuration. The UE shall assume that the resource elements assumed to be reserved for reference signals in the mapping operation above but not used for transmission of reference signal are not available for PDSCH transmission. The UE shall not make any other assumptions about these resource elements.

See Exhibit 17, 3GPP TS 36.211 V8.9.0 at Sec. 6.6.4 at pp. 56, 57.

184. Upon information and belief, broadcast information is received only in a first band having a first bandwidth and the broadcast information is carried by a plurality of groups of subcarriers with each group having a plurality of contiguous subcarriers.[15]

5.1.1 Basic transmission scheme based on OFDM

The downlink transmission scheme is based on conventional OFDM using a cyclic prefix. The OFDM sub-carrier spacing is $\Delta f = 15$ kHz. 12 consecutive sub-carriers during one slot correspond to one downlink *resource block*. In the frequency domain, the number of resource blocks, N_{RB}, can range from $N_{RB\text{-}min} = 6$ to $N_{RB\text{-}max} = 110$.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25.

185. Upon information and belief, the Toyota Count VIII Automobiles include circuitry configured to determine a second bandwidth of a second band that is associated with the OFDMA system based upon the broadcast information received in the first band.[16]

[15] *See* Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25; Exhibit 15, 3GPP TS 36.331 V8.21.0 at p. 21.
[16] *See* Exhibit 15, 3GPP TS 36.331 V8.21.0 at pp. 21, 85, 86.

Physical broadcast channel (PBCH)

- The coded BCH transport block is mapped to four subframes within a 40 ms interval;
- 40 ms timing is blindly detected, i.e. there is no explicit signalling indicating 40 ms timing;
- Each subframe is assumed to be self-decodable, i.e. the BCH can be decoded from a single reception, assuming sufficiently good channel conditions.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 24.

186. Upon information and belief, the second bandwidth of the second band is greater than the first bandwidth of the first band.

Table 5.6-1 Transmission bandwidth configuration N_{RB} in E-UTRA channel bandwidths

Channel bandwidth $BW_{Channel}$ [MHz]	1.4	3	5	10	15	20
Transmission bandwidth configuration N_{RB}	6	15	25	50	75	100

See Exhibit 18, 3GPP TS 36.104 V8.14.1 at p. 14.

187. Upon information and belief, the Toyota Count VIII Automobiles include a mobile station wherein the first band is contained within the second band and wherein a data channel is carried by at least one subcarrier group of the second band.

188. Upon information and belief, the Toyota Count VIII Automobiles include a mobile station wherein the plurality of contiguous subcarriers have fixed spacing.[17]

5.1.1 Basic transmission scheme based on OFDM

The downlink transmission scheme is based on conventional OFDM using a cyclic prefix. The OFDM sub-carrier spacing is $\Delta f = 15$ kHz. 12 consecutive sub-carriers during one slot correspond to one downlink *resource block*. In the frequency domain, the number of resource blocks, N_{RB}, can range from $N_{RB\text{-}min} = 6$ to $N_{RB\text{-}max} = 110$.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25.

189. Upon information and belief, the Toyota Count VIII Automobiles include a mobile station wherein a number of usable subcarriers is adjustable to realize a variable band, wherein the

[17] Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25.

number of usable subcarriers is determined based on a plurality of operating channel bandwidths.[18]

5.1.1 Basic transmission scheme based on OFDM

The downlink transmission scheme is based on conventional OFDM using a cyclic prefix. The OFDM sub-carrier spacing is $\Delta f = 15$ kHz. 12 consecutive sub-carriers during one slot correspond to one downlink *resource block*. In the frequency domain, the number of resource blocks, N_{RB}, can range from $N_{RB\text{-}min} = 6$ to $N_{RB\text{-}max} = 110$.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25.

190. Upon information and belief, the Toyota Count VIII Automobiles include a mobile station wherein the first band is defined as a frequency segment with a bandwidth that is not greater than a smallest operating channel bandwidth among the plurality of operating channel bandwidths, the first band having a same value for the plurality of operating channel bandwidths.[19]

LTE bandwidth	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
PBCH Resource Elements per radio Frame	240	240	240	240	240	240
Overhead(normal CP)	240/ 10080 = 2.4%	240/ 25200 = 1.0%	240/ 42000 = 0.6%	240/ 84000 = 0.3%	240/ 126000 = 0.2%	240/ 168000 = 0.1%
Overhead(extended CP)	240/ 8640 = 2.8%	240/ 21600 = 1.1%	240/ 36000 = 0.7%	240/ 72000= 0.3%	240/ 108000 = 0.2%	240/ 144000 = 0.2%

191. Upon information and belief, the Toyota Count VIII Automobiles include a mobile station configured to operate within the plurality of operating channel bandwidths.[20]

[18] Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 25; Exhibit 18, 3GPP TS 36.104 V8.14.1 at p. 14; Exhibit 15, 3GPP TS 36.331 V8.21.0 at pp. 85-86.
[19] Exhibit 18, 3GPP TS 36.104 V8.14.1 at p. 14; http://www.rfwireless-world.com/Terminology/LTE-PBCH-Physical-Broadcast-Channel.html
[20] Exhibit 15, 3GPP TS 36.331 V8.21.0 at pp. 85, 86; Exhibit 18, 3GPP TS 36.104 V8.14.1 at p. 14; Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 24.

Physical broadcast channel (PBCH)

- The coded BCH transport block is mapped to four subframes within a 40 ms interval;
- 40 ms timing is blindly detected, i.e. there is no explicit signalling indicating 40 ms timing;
- Each subframe is assumed to be self-decodable, i.e. the BCH can be decoded from a single reception, assuming sufficiently good channel conditions.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 24.

192. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count VIII Automobiles equipped with a Mobile Hotspot System and/or 4G LTE modem that directly infringe one or more claims of the '641 Patent.

193. Additionally, Toyota has been, and currently is, actively inducing infringement of the '641 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '641 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

194. Toyota knew of the '641 Patent, or should have known of the '641 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '641 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '641 Patent.

195. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '641 Patent with knowledge of the '641 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '641 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing, promoting, and instructing its customers on how to use Toyota's Mobile Hotspot systems and connectivity features in the Toyota Count VIII Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '641 Patent.

196. Toyota has also committed, and continues to commit, contributory infringement, by *inter*

alia, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '641 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '641 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

197. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT IX

(Toyota's Infringement of U.S. Patent No. 8,811,356)

198. Paragraphs 1-197 are incorporated by reference as if fully set forth herein.

199. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '356 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '356 Patent including, but not limited to, the Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota 4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra, and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid that use the Toyota Entune™, Lexus Enform™ Wi-Fi Connect, and/or Wi-Fi Connect service (collectively, "Toyota Count IX Automobiles").

200. An exemplary claim, claim 1 of the '356 Patent is reproduced below:

> *1. A user equipment (UE) comprising:*
>
> *a processor configured to receive resource allocation information associated with an uplink physical control channel, wherein the uplink physical control channel and a*

physical uplink shared channel have different resources;

the processor is further configured to send data over the physical uplink shared channel in assigned time intervals;

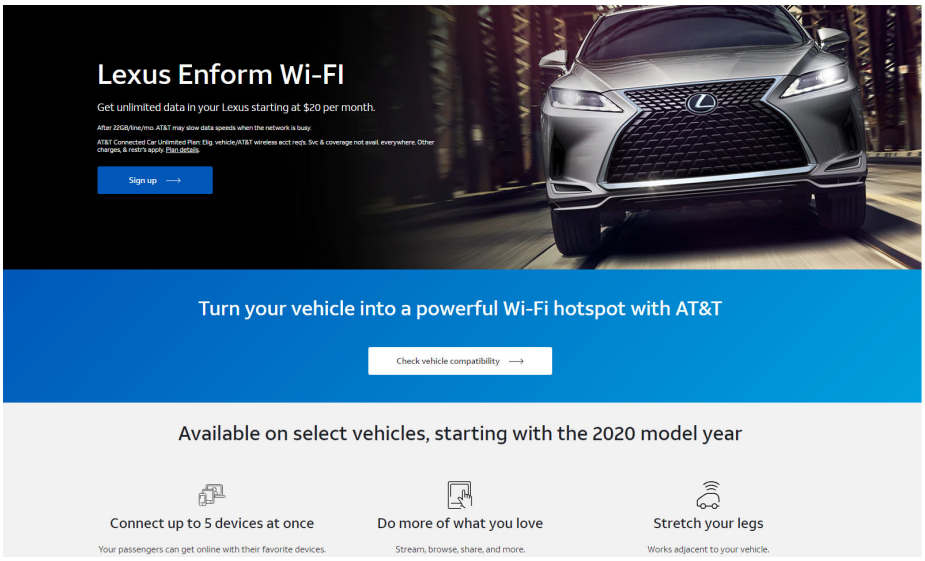
the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information; and

the processor is further configured to receive feedback information from a downlink control channel.

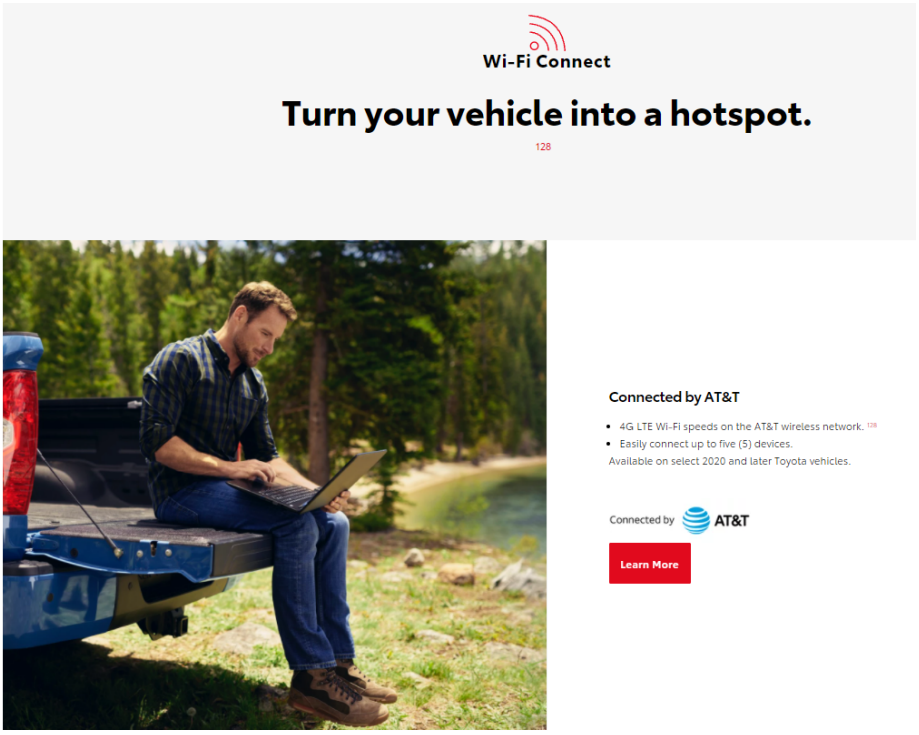
201. Upon information and belief, the Toyota Count IX Automobiles perform each and every limitation of at least claim 1 of the ’356 Patent.

202. Upon information and belief, the Toyota Count IX Automobiles include a Continental Data Communications Module and/or other modules, which support’s Toyota’s Mobile Hotspot System. Upon information and belief, the Toyota Count IX Automobiles’ Mobile Hotspot System that can connect with 4G LTE to the Internet.

203. Upon information and belief, the Toyota Count IX Automobiles are equipped with mobile wireless hot-spot systems as claimed in the ’356 Patent. Upon information and belief, Internet connectivity for the Mobile Hot-Spot is provided by AT&T, Verizon Wireless and/or another Internet provider through, for example, a trial period and/or through a subscription.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

T-SB-0112-20 November 10, 2020

TOYOTA
Technical Service Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

https://static.nhtsa.gov/odi/tsbs/2020/MC-10184542-9999.pdf

L-SB-0032-20 August 26, 2020

LEXUS
Technical Service Information Bulletin

SOS Inoperative – Continental DCM

Service Category Audio/Visual/Telematics

Section Navigation/Multi Info Display **Market** USA

Toyota Supports ASE Certification

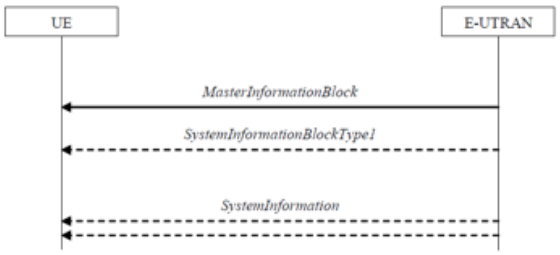
https://static.nhtsa.gov/odi/tsbs/2020/MC-10179741-9999.pdf

204. Upon information and belief, the Toyota Count IX Automobiles' Mobile Hotspot and/or 4G LTE modem are compliant with and use the 3GPP standards.

205. Upon information and belief, the Toyota Count IX Automobiles using, for example, a 4G LTE modem comprise a processor configured to receive resource allocation information associated with an uplink physical control channel, wherein the uplink physical control channel and a physical uplink shared channel have difference resources. Upon information and belief, the uplink physical control channel and a physical uplink shared channel in the 4G LTE modem used in the Toyota Count IX Automobiles are transmitted on different sets of sub-carriers.

5.2.2 System information acquisition

5.2.2.1 General



See Exhibit 15, 3GPP TS 36.331 V8.21.0 at p. 23.

5.4 Physical uplink control channel

The physical resources used for PUCCH depends on two parameters, $N_{RB}^{(2)}$ and $N_{cs}^{(1)}$, given by higher layers. The variable $N_{RB}^{(2)} \geq 0$ denotes the bandwidth in terms of resource blocks that are available for use by PUCCH formats 2/2a/2b transmission in each slot. The variable $N_{cs}^{(1)}$ denotes the number of cyclic shift used for PUCCH formats 1/1a/1b in a resource block used for a mix of formats 1/1a/1b and 2/2a/2b. The value of $N_{cs}^{(1)}$ is an integer multiple of Δ_{shift}^{PUCCH} within the range of {0, 1, …, 7}, where Δ_{shift}^{PUCCH} is provided by higher layers. No mixed resource block is

See Exhibit 17, 3GPP TS 36.211 V8.9.0 at p. 16.

6.3.1 System information blocks

SystemInformationBlockType2

The IE *SystemInformationBlockType2* contains radio resource configuration information that is common for all UEs.

6.3.2 Radio resource control information elements

RadioResourceConfigCommon

***RadioResourceConfigCommon* information element**

```
-- ASN1START

RadioResourceConfigCommonSIB ::=    SEQUENCE {
    rach-ConfigCommon                   RACH-ConfigCommon,
    bcch-Config                         BCCH-Config,
    pcch-Config                         PCCH-Config,
    prach-Config                        PRACH-ConfigSIB,
    pdsch-ConfigCommon                  PDSCH-ConfigCommon,
    pusch-ConfigCommon                  PUSCH-ConfigCommon,
    pucch-ConfigCommon                  PUCCH-ConfigCommon,
```

See Exhibit 15, 3GPP TS 36.331 V8.21.0 at pp. 105, 115, 128.

206. Upon information and belief, the Toyota Count IX Automobiles using a 4G LTE modem comprise a processor further configured to send data over the physical uplink shared channel in assigned time intervals.

11.1.2 Uplink Scheduling

In the uplink, E-UTRAN can dynamically allocate resources (PRBs and MCS) to UEs at each TTI via the C-RNTI on PDCCH(s). A UE always monitors the PDCCH(s) in order to find possible allocation for uplink transmission when its downlink reception is enabled (activity governed by DRX when configured).

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 67.

8 Physical uplink shared channel related procedures

For FDD and normal HARQ operation, the UE shall upon detection of a PDCCH with DCI format 0 and/or a PHICH transmission in subframe *n* intended for the UE, adjust the corresponding PUSCH transmission in subframe *n+4* according to the PDCCH and PHICH information.

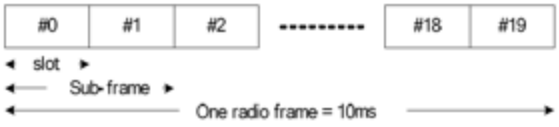
See Exhibit 19, 3GPP TS 36.213 V8.8.0 at p. 52.

5 Physical Layer for E-UTRA

Downlink and uplink transmissions are organized into radio frames with 10 ms duration. Two radio frame structures are supported:

- Type 1, applicable to FDD,
- Type 2, applicable to TDD.

Frame structure Type 1 is illustrated in Figure 5.1-1. Each 10 ms radio frame is divided into ten equally sized sub-frames. Each sub-frame consists of two equally sized slots. For FDD, 10 subframes are available for downlink transmission and 10 subframes are available for uplink transmissions in each 10 ms interval. Uplink and downlink transmissions are separated in the frequency domain.



See Exhibit 14, 3GPP TS 36.300 V8.12.0 at p. 23.

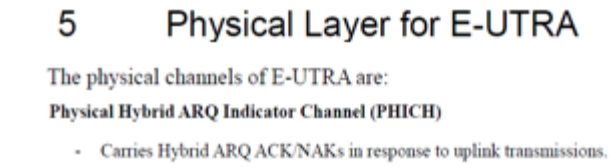
207. Upon information and belief, the Toyota Count IX Automobiles using, for example, a 4G LTE modem comprise a processor further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information.

5.4 Physical uplink control channel

The physical uplink control channel, PUCCH, carries uplink control information. The PUCCH is never transmitted simultaneously with the PUSCH from the same UE. For frame structure type 2, the PUCCH is not transmitted in the UpPTS field.

See Exhibit 17, 3GPP TS 36.211 V8.9.0 at p. 16.

208. Upon information and belief, the Toyota Count IX Automobiles using a 4G LTE modem comprise a processor further configured to receive feedback information from a downlink control channel.



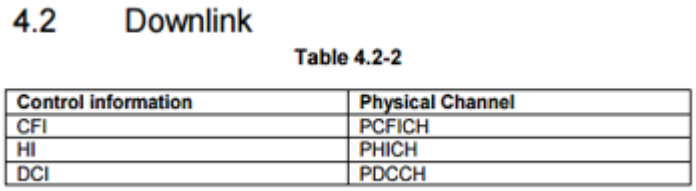
5 Physical Layer for E-UTRA

The physical channels of E-UTRA are:

Physical Hybrid ARQ Indicator Channel (PHICH)

- Carries Hybrid ARQ ACK/NAKs in response to uplink transmissions.

See Exhibit 14, 3GPP TS 36.300 V8.12.0 at pp. 23, 24.



4.2 Downlink

Table 4.2-2

Control information	Physical Channel
CFI	PCFICH
HI	PHICH
DCI	PDCCH

See Exhibit 20, 3GPP TS 36.212 V8.8.0 at p. 8.

209. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count IX Automobiles equipped with a Mobile Hotspot System and/or 4G LTE modem infringe one or more claims of the '356 Patent.

210. Additionally, Toyota has been, and currently is, actively inducing infringement of the '356 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '356 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

211. Toyota knew of the '356 Patent, or should have known of the '356 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '356 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '356 Patent.

212. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '356 Patent with knowledge of the '356 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '356 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of

providing, promoting, and instructing its customers on how to use Toyota's Mobile Hotspot System, ToyotaLink® and connectivity features in the Toyota Count IX Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '356 Patent.

213. Toyota has also committed, and continues to commit, contributory infringement, by *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '356 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '356 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

214. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT X

(Toyota's Infringement of U.S. Patent No. 7,684,318)

215. Paragraphs 1-214 are reincorporated by reference as if fully set forth herein.

216. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '318 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '318 Patent including, but are not limited to, products that allow the user to use Wi-Fi in the accused products, including, but not limited to, the following Lexus and Toyota Models: Toyota Camry, Toyota Camry Hybrid, Toyota Corolla, Toyota Corolla Hybrid, Toyota Corolla Hatchback, Toyota Prius, Toyota Prius Prime, Toyota Avalon, Toyota Avalon Hybrid, Toyota Sienna, Toyota C-HR, Toyota RAV4, Toyota RAV4 Hybrid, Toyota RAV4 Prime, Toyota Highlander, Toyota Highlander Hybrid, Toyota Venza, Toyota 4Runner, Toyota Sequoia, Toyota Tacoma, Toyota Tundra;

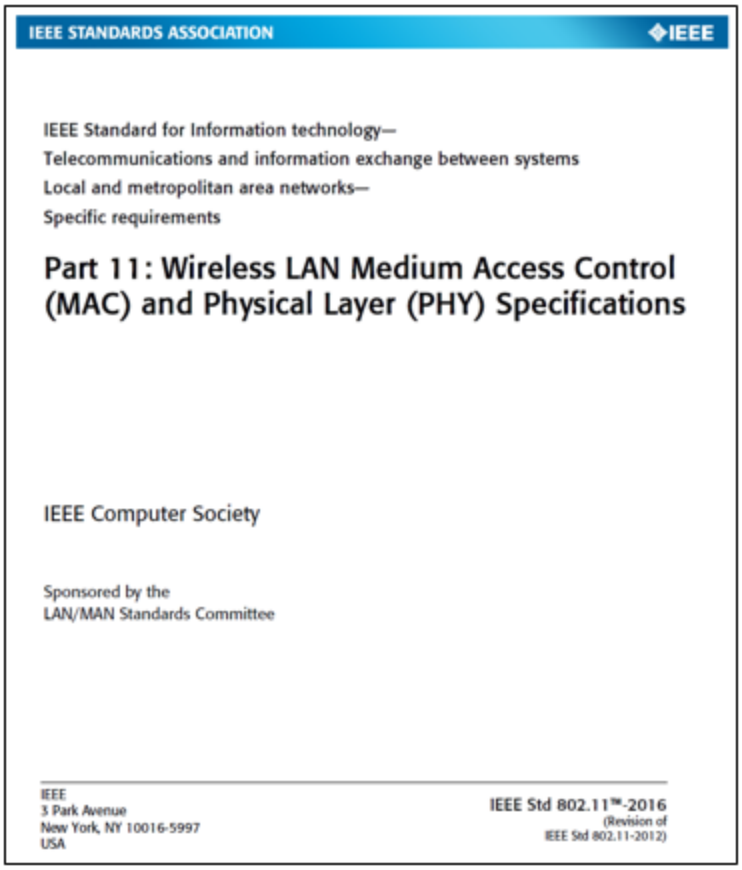
and Lexus models IS, GS, LS, ES, RC, RC F, LC, LC Hybrid, NX, NX Hybrid, RX, and RX Hybrid (collectively, "Toyota Count X Automobiles").

217. An exemplary claim, claim 1 of the '318 Patent is reproduced below:

> *1. A method, comprising:*
>
> *queuing data frames to be transmitted during a transmitting station's transmit opportunity, wherein the data frames are queued in a queue, wherein the transmit opportunity corresponds to a length of time during which the transmitting station will transmit data frames from the queue to a shared-communications channel, and wherein the transmit opportunity is commenced with a control frame; and*
>
> *setting a length of time for the transmit opportunity based on a priority of the queue.*

218. Upon information and belief, Toyota and the Toyota Count X Automobiles perform or can perform each and every limitation of at least claim 1 of the '318 Patent.

219. Upon information and belief, Toyota Count X Automobiles are equipped to provide wireless connectivity utilizing IEEE 802.11-2016.



IEEE STANDARDS ASSOCIATION IEEE

IEEE Standard for Information technology—
Telecommunications and information exchange between systems
Local and metropolitan area networks—
Specific requirements

Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

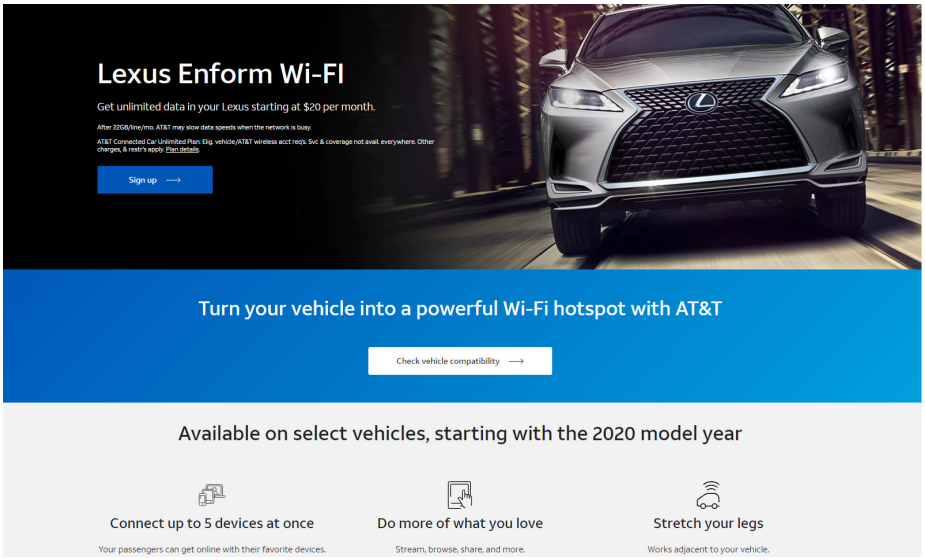
IEEE Computer Society

Sponsored by the
LAN/MAN Standards Committee

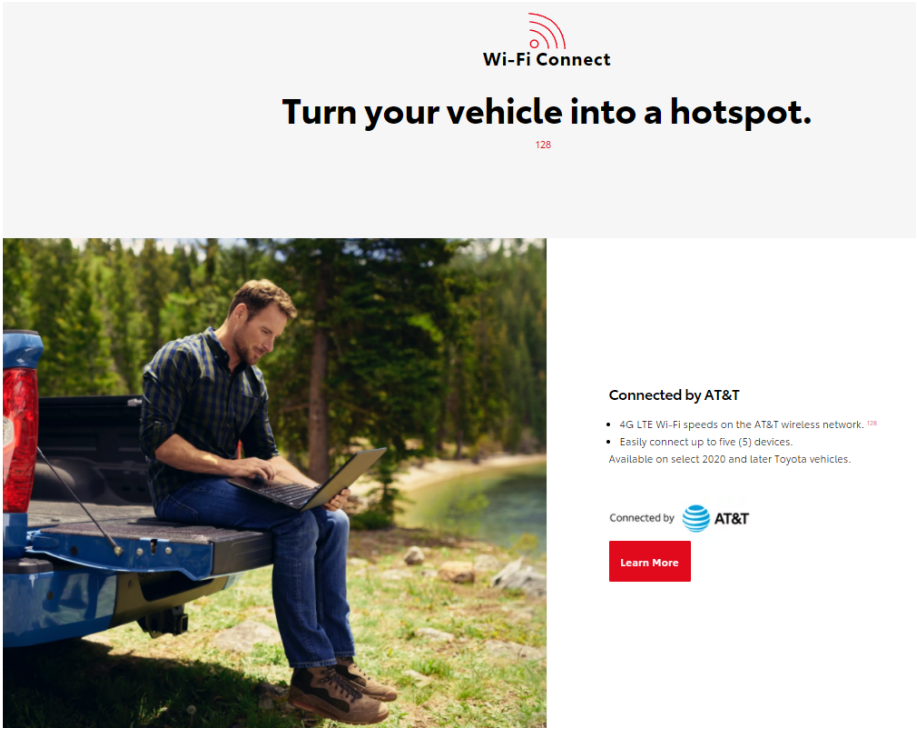
IEEE
3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std 802.11™-2016
(Revision of
IEEE Std 802.11-2012)

See Exhibit 21, IEEE 802.11-2016.



https://www.att.com/plans/connected-car/lexus/



https://www.toyota.com/connected-services/wificonnect/

220. Upon information and belief, the Toyota Count X Automobiles' Wi-Fi functionality supports Quality of Service (QoS) capability via the 802.11 standard ("802.11 Wi-Fi"). Upon information and belief, IEEE 802.11-2016 standard defines the Enhanced Distributed Channel Access (EDCA) mechanism for prioritized QoS. This provides access categories (ACs) for differentiating traffic types that have a separate queue for queuing frames to be transferred.

221. Upon information and belief, 802.11 Wi-Fi performs queuing data frames to be transmitted during a transmitting station's transmit opportunity, wherein the data frames are queued in a queue.

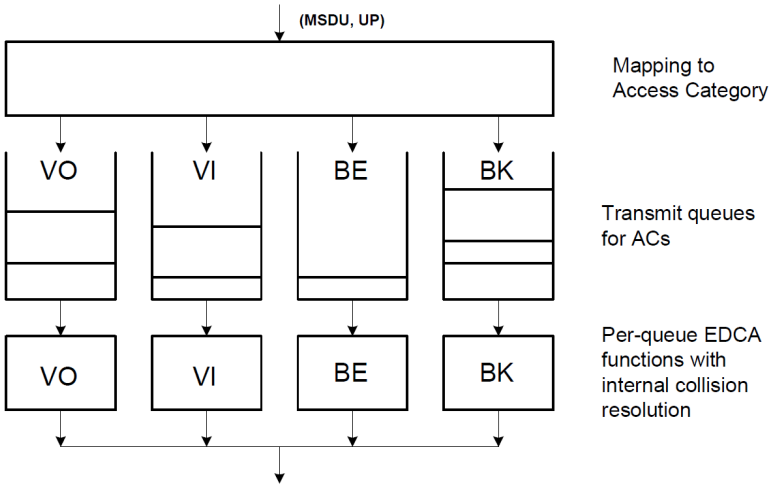


Figure 10-24—Reference implementation model when dot11AlternateEDCAActivated is false or not present

See Exhibit 21, IEEE Std 802.11-2016 at p. 1378.

222. Upon information and belief 802.11 Wi-Fi performs wherein the transmit opportunity corresponds to a length of time during which the transmitting station will transmit data frames from the queue to a shared-communications channel, and wherein the transmit opportunity is commenced with a control frame. Upon information and belief, in an EDCA transmission opportunity or TXOP (transmit opportunity), the transmitting station selects frames for transmission from a set of transmission queues. Upon information and belief, TXOP commences with a control frame.

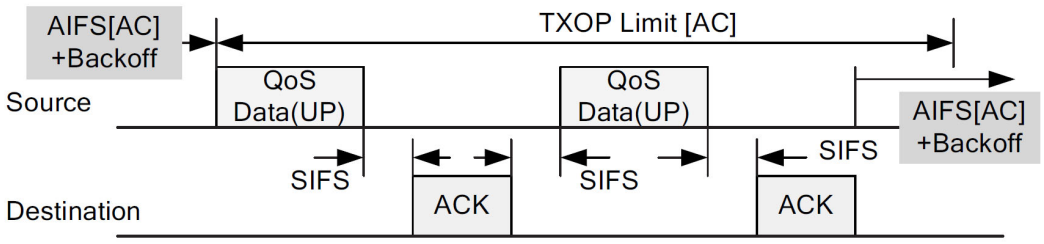


Figure 3.5 EDCA TXOP operation timing structure.

Exhibit 22, Shorey, Rajeev, et al., eds. Mobile, wireless, and sensor networks: technology, applications, and future directions. John Wiley & Sons, 2006, p. 54.

223. Upon information and belief, 802.11 Wi-Fi performs setting a length of time for the transmit opportunity based on a priority of the queue.

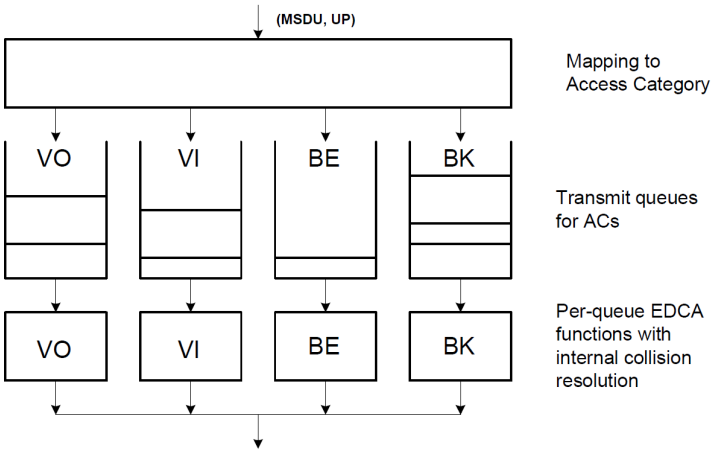


Figure 10-24—Reference implementation model when dot11AlternateEDCAActivated is false or not present

See Exhibit 21, IEEE Std 802.11-2016 at p. 1378.

Table 10-1—UP-to-AC mappings

Priority	UP (Same as IEEE 802.1D user priority)	IEEE 802.1D designation	AC	Transmit queue (dot11Alternate-EDCAActivated false or not present)	Transmit queue (dot11Alternate EDCAActivated true)	Designation (informative)
Lowest	1	BK	AC_BK	BK	BK	Background
	2	—	AC_BK	BK	BK	Background
	0	BE	AC_BE	BE	BE	Best Effort
	3	EE	AC_BE	BE	BE	Best Effort
	4	CL	AC_VI	VI	A_VI	Video (alternate)
	5	VI	AC_VI	VI	VI	Video (primary)
	6	VO	AC_VO	VO	VO	Voice (primary)
Highest	7	NC	AC_VO	VO	A_VO	Voice (alternate)

See Exhibit 21, IEEE Std 802.11-2016 at pp. 1298-1299.

224. Upon information and belief, Internet connectivity is provided in Toyota Count X Automobiles through, for example, a trial or subscription service through AT&T, Verizon Wireless, and/or other Internet providers.

225. Accordingly, Toyota is making, using, testing, selling, offering for sale and/or importing into the United States the Toyota Count X Automobiles that infringe one or more claims of the '318

Patent.

226. Additionally, Toyota has been, and currently is, actively inducing infringement of the '318 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '318 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

227. Toyota knew of the '318 Patent, or should have known of the '318 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '318 Patent since at least as early receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '318 Patent.

228. Toyota has committed, and continue to commit, affirmative acts that cause infringement of one or more claims of the '318 Patent with knowledge of the '318 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '318 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing, promoting, and instructing its customers on how to use wireless connectivity features in the Toyota Count X Automobiles that when used in their normal and customary way as intended and designed by Toyota, infringe one or more claims of the '318 Patent.

229. Toyota has also committed, and continues to commit, contributory infringement by, *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '318 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '318 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

230. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to

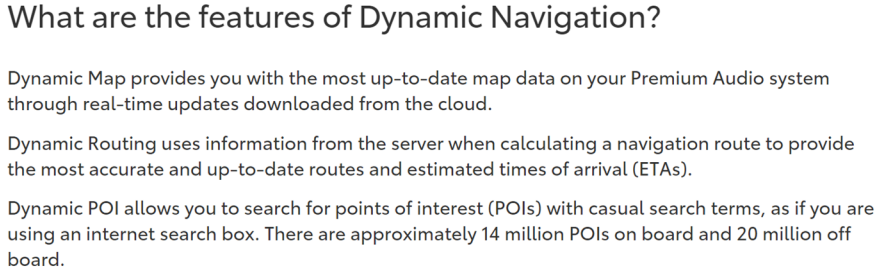
suffer damages in an amount to be proven at trial.

COUNT XI
(Toyota's Infringement of U.S. Patent No. 9,602,608)

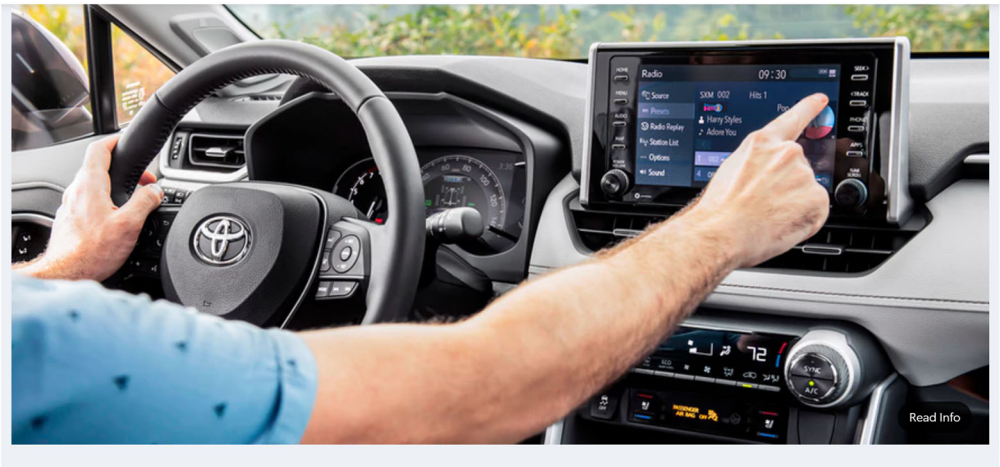
231. Paragraphs 1-230 are incorporated by reference as if fully set forth herein.

232. Toyota has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '608 Patent, by making, using, testing, selling, offering for sale and/or importing into the United States vehicles that embody products and/or services that infringe the '608 Patent, including, but not limited to Toyota Prius, Toyota Prius Prime, Toyota Corolla, Toyota Camry, Toyota Avalon, Toyota Sienna, Toyota 4Runner, Toyota Highlander, Toyota RAV4, Toyota Sequoia, Toyota Tacoma, and Toyota Tundra and other Toyota vehicles that are equipped with Toyota Navigation System Navigation or similar functionality (collectively, "Toyota Count XI Automobiles").

https://www.toyota.com/rav4/



http://toyota.custhelp.com/app/answers/detail/a_id/9816/~/what-are-the-features-of-dynamic-navigation%3F



https://www.toyota.com/rav4/rav4-features/audi o-multimedia/

233. An exemplary claim, Claim 1 of the '608 Patent, is reproduced below:

The invention claimed is:

1. A electronic computer implemented method for matching users with information, comprising:

receiving a first user preference, a location of a mobile device of the first user, and a geographic area limitation;

storing, for a plurality of objects, a set of attributes of each corresponding object, and a location of the corresponding object;

determining an object of the plurality of objects that matches the first user based on at least:

(a) the set of attributes for the object satisfies the first user preference, and

(b) the distance between the received location of the mobile device of the first user and the object is within the geographic area limitation;

sending to the first user, in response to a positive outcome of the determining, information about the matching object; and

wherein the matching object is a person, place and/or thing.

234. Upon information and belief, the Toyota Count XI Automobiles are equipped with a navigation system that performs or can perform each and every limitation of at least claim 1 of the '608 Patent, including but not limited to Toyota Dynamic Navigation ("Toyota Navigation System").

235. Upon information and belief, the Toyota Count XI Automobiles equipped with Toyota Navigation System comprises an electronic computer implemented method for matching users with information.

https://www.youtube.com/watch?v=-VPyfOYd_J0

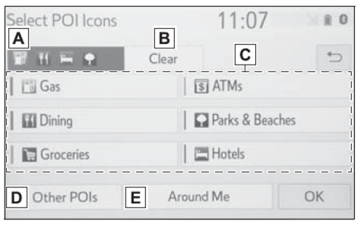
236. Upon information and belief, the Toyota Count XI Automobiles equipped with Toyota Navigation System are capable of receiving a first user preference, a location of a mobile device of the first user, and a geographic area limitation.

Selecting the POI icons

1 Select on the map screen. (→P.72)

2 Select "POI Icons".

3 Select the desired POI category and select "OK".



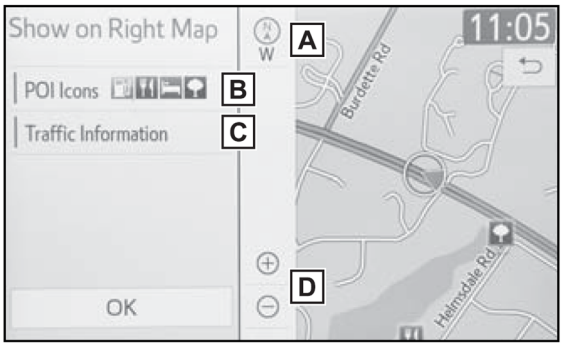
A Displays up to 5 selected POI icons on the map screen.

B Select to cancel the selected POI icons.

C Displays up to 6 POI icons as favorite POI categories. (→P.107) If a POI category is selected to be displayed on the map, its icon will be displayed above.

D Select to display other POI categories if the desired POIs cannot be found on the screen.

E Select to search for the nearest POIs. (→P.79)



POIs that are within 20 miles (32 km) of the current position will be listed from among the selected categories.

1 Select "Around Me".

2 Select the desired POI.

"Sort/Search Area": Select to sort (distance, name, category) POIs or search area.

- Select "Near Here" to search for POIs near the current position.
- Select "Along My Route" to search for POIs along the route.

3 Check that the selected POI is displayed on the map screen.

https://manualzz.com/doc/53682399/toyota-2021-rav4-hv-owner-s-manual at pp. 77, 78, 79.

237. Upon information and belief, the Toyota Count XI Automobiles equipped with Toyota Navigation System are capable of storing, for a plurality of objects, a set of attributes of each corresponding object, and a location of that corresponding object;

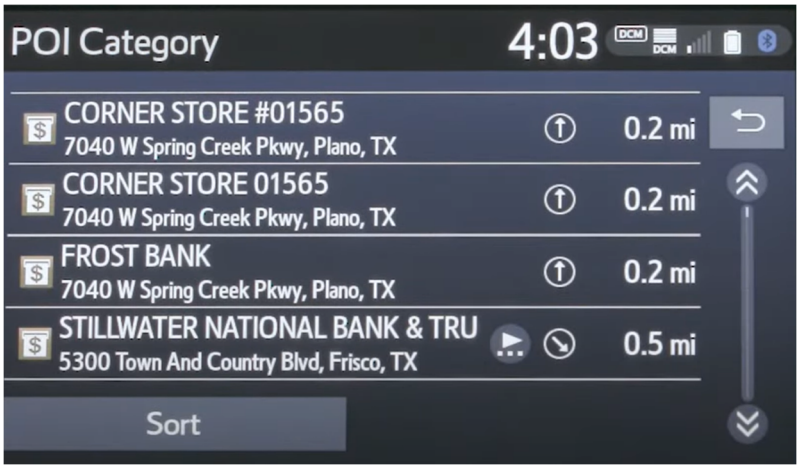
What are the features of Dynamic Navigation?

Dynamic Map provides you with the most up-to-date map data on your Premium Audio system through real-time updates downloaded from the cloud.

Dynamic Routing uses information from the server when calculating a navigation route to provide the most accurate and up-to-date routes and estimated times of arrival (ETAs).

Dynamic POI allows you to search for points of interest (POIs) with casual search terms, as if you are using an internet search box. There are approximately 14 million POIs on board and 20 million off board.

http://toyota.custhelp.com/app/answers/detail/a_id/9816/~/what-are-the-features-of-dynamic-navigation%3F

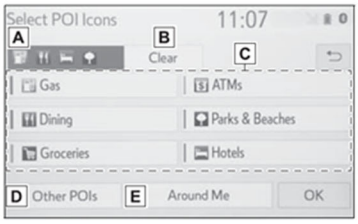


https://www.youtube.com/watch?v=-VPyfOYd_J0

238. Upon information and belief, the Toyota Count XI Automobiles equipped with Toyota Navigation System are capable of determining an object of the plurality of objects in the database that

matches the first user based on at least (a) the set of attributes for the object satisfies the first user preference, and (b) the distance between the received location of the mobile device of the first user and the object is within the geographic area limitation.

3 Select the desired POI category and select "OK".



A Displays up to 5 selected POI icons on the map screen.

B Select to cancel the selected POI icons.

C Displays up to 6 POI icons as favorite POI categories. (→P.107) If a POI category is selected to be displayed on the map, its icon will be displayed above.

D Select to display other POI categories if the desired POIs cannot be found on the screen.

E Select to search for the nearest POIs. (→P.79)

POIs that are within 20 miles (32 km) of the current position will be listed from among the selected categories.

1 Select "Around Me".

2 Select the desired POI.

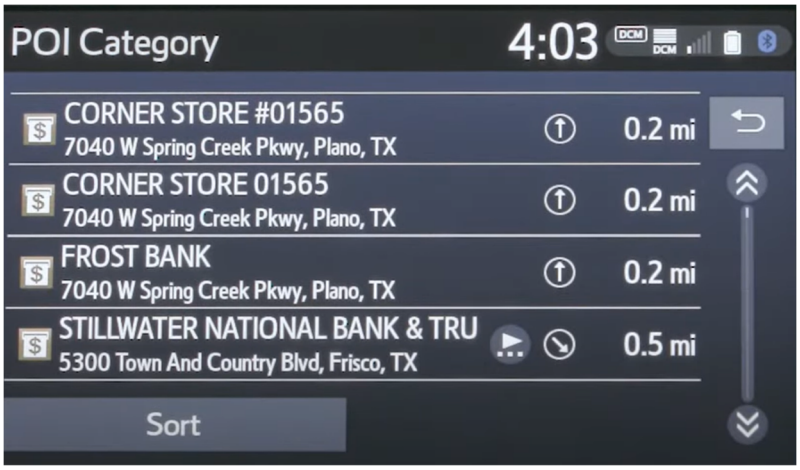
"Sort/Search Area": Select to sort (distance, name, category) POIs or search area.

- Select "Near Here" to search for POIs near the current position.
- Select "Along My Route" to search for POIs along the route.

3 Check that the selected POI is displayed on the map screen.

https://manualzz.com/doc/53682399/toyota-2021-rav4-hv-owner-s-manual at pp. 77, 78, 79.

239. Upon information and belief, the Toyota Count XI Automobiles equipped with Toyota Navigation System are capable of sending to the first user, in response to a positive outcome of the determining, information about the matching object; and wherein the matching object is a person, place and/or thing.



https://www.youtube.com/watch?v=-VPyfOYd_J0

240. Accordingly, Toyota is using, offering for sale, or selling in the United States the Toyota Count XI Automobiles equipped with the Toyota Navigation System that directly infringe one or more claims of the '608 Patent.

241. Additionally, Toyota has been, and currently is, actively inducing infringement of the '608 Patent under 35 U.S.C. § 271(b) and contributorily infringing the '608 Patent under 35 U.S.C. § 271(c) either literally and/or by the doctrine of equivalents.

242. Toyota knew of the '608 Patent, or should have known of the '608 Patent, but was willfully blind to its existence. Toyota has had actual knowledge of the '608 Patent since not later than receipt of a letter dated October 18, 2021 and received on the same date. By the time of trial, Toyota will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '608 Patent.

243. Toyota has committed, and continues to commit, affirmative acts that cause infringement of one or more claims of the '608 Patent with knowledge of the '608 Patent and knowledge or willful blindness that the induced acts constitute infringement of one or more claims of the '608 Patent. As an illustrative example only, Toyota induces such acts of infringement by its affirmative action of providing, promoting, and instructing its customers on how to use the claimed Toyota Navigation System in the Toyota Count XI Automobiles that when used in their normal and customary way as intended and designed by Toyota infringe one or more claims of the '608 Patent.

244. Toyota has also committed, and continues to commit, contributory infringement by, *inter alia*, knowingly selling products and/or methods or services that when used cause the direct infringement of one or more claims of the '608 Patent by a third party, and which have no substantial non-infringing uses, or include a separate and distinct component that is especially made or especially adapted for use in infringement of the '608 Patent and is not a staple article or commodity of commerce suitable for a substantial non-infringing use.

245. As a result of Toyota's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

DEMAND FOR JURY TRIAL

246. Under Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs respectfully request a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request the following relief:

A. A judgment that the Patents-in-Suit are valid and enforceable;

B. A judgment that Defendants directly infringe, contributorily infringe, and/or induce infringement of one or more claims of *each of* the Patents-in-Suit;

C. A judgment that awards Plaintiffs all damages adequate to compensate them for Defendants' direct infringement, contributory infringement, and/or induced infringement, of the Patents-in-Suit, including all pre-judgment and post-judgment interest at the maximum rate permitted by law;

D. A judgment that awards Plaintiffs all appropriate damages under 35 U.S.C. § 284 for Defendants' past infringement with respect to the Patents-in-Suit;

E. A judgment that awards Plaintiffs all appropriate damages under 35 U.S.C. § 284 for Defendants' continuing or future infringement, up until the date such judgment is entered with respect to the Patents-in-Suit, including ongoing royalties, pre- or post-judgment interest, costs, and disbursements as justified under 35 U.S.C. § 284;

F. A judgment that this case is exceptional under 35 U.S.C. § 285;

G. An accounting of all damages not presented at trial; and

H. A judgment that awards Plaintiffs their costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by the Court.

Dated: October 19, 2021

RESPECTFULLY SUBMITTED,

By: */s/ Jonathan K. Waldrop, with permission by Allen F. Gardner*

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Attorneys for Plaintiffs
INTELLECTUAL VENTURES I LLC, and
INTELLECTUAL VENTURES II LLC

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing document was served on all parties who have appeared in this case on October 19, 2021, via the Court's CM/ECF system.

/s/ Allen F. Gardner
Allen F. Gardner