

2. On information and belief, Toyota Motor Corporation is a publicly-traded corporation organized and existing under the laws of Japan, with a place of business at 1 Toyota-Cho, Toyota City, Aichi Prefecture, 471-8571, Japan.

3. On information and belief, Toyota Motor North America, Inc. is a holding company organized and existing under the laws of California, with its principal place of business at 6565 Headquarters Drive, Plano, Texas, 75024. TMNA may be served through its registered agent, CT Corporation System, at 1999 Bryan Street, Suite 900, Dallas, Texas, 75201.

4. On information and belief, Toyota Motor Sales, U.S.A., Inc. is a corporation organized and existing under the laws of California, with its principal place of business at 6565 Headquarters Drive, Plano, Texas, 75024. TMS may be served through its registered agent, CT Corporation System, at 1999 Bryan Street, Suite 900, Dallas, Texas, 75201.

5. On information and belief, Toyota Motor Engineering & Manufacturing North America, Inc. is a corporation organized and existing under the laws of Kentucky, with its principal place of business at 6565 Headquarters Drive, Plano, Texas, 75024. TMEM may be served through its registered agent, CT Corporation System, at 1999 Bryan Street, Suite 900, Dallas, Texas, 75201.

6. On information and belief, Toyota Motor Credit Corporation is a corporation organized and existing under the laws of California, with its principal place of business at 6565 Headquarters Drive, Plano, Texas, 75024. TMCC may be served through its registered agent, CT Corporation System, at 1999 Bryan Street, Suite 900, Dallas, Texas, 75201.

JURISDICTION AND VENUE

7. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*

8. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338(a).

9. Venue is proper under 28 U.S.C. § 1391(b) and § 1391(c)(3) against TMC because it is subject to personal jurisdiction in this District.

10. Venue is proper under 28 U.S.C. § 1400(b) against TMNA, TMS, TMEEM, and TMCC because, on information and belief, each Toyota Defendant (1) has committed acts of infringement in this District and (2) has a regular and established place of business in this District (including its principal place of business).

11. This Court has general personal jurisdiction over Defendants.

12. This Court has personal jurisdiction over TMC because it has substantial contacts with the United States and has committed and/or induced acts of patent infringement in the United States; and is not subject to jurisdiction in any state's courts of general jurisdiction. Moreover, on information and belief, TMC receives a substantial portion of its revenue from customers located in the United States, including from customers residing in this District.

13. This Court has personal jurisdiction over TMNA, TMS, TMEEM, and TMCC because each Toyota's entity's principal place of business is in the forum state.

14. Defendants are also subject to this Court's specific personal jurisdiction due at least to each Toyota Defendant's substantial business activities in this District, including (1) at least a portion of the infringements alleged herein; and/or (2) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this District.

15. Defendants do and intend to do business in Texas and in this District, directly or through intermediaries, and offer their products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas and in this District.

16. Defendants, both directly and through their subsidiaries or intermediaries (including distributors, retailers, and others), have purposefully and voluntarily placed one or more infringing products and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas.

17. These infringing products and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas.

18. Defendants have placed the Accused Products into the stream of commerce by selling and/or offering to sell the Accused Products in the Eastern District of Texas, shipping Accused Products into the Eastern District of Texas, and/or shipping Accused Products knowing that those products would be shipped into the Eastern District of Texas.

THE ASSERTED PATENTS

I. The '366 Patent

19. On June 18, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,467,366 (“the '366 patent”), entitled “Methods and Apparatus for Random Access in Multi-Carrier Communication Systems.” A copy of the '366 patent is attached as Exhibit 1.

20. The '366 patent issued from U.S. Patent Application 13/205,579, which was filed by Neocific Inc. on August 8, 2011 and was assigned from the inventors to Waltical Solutions, Inc. on April 8, 2005. The application was later assigned from Waltical Solutions, Inc. to Neocific, Inc. on December 14, 2005. The now-issued '366 patent was assigned from Neocific, Inc. to CFIP NCF LLC on November 22, 2019 before it was assigned to Neo Wireless LLC on January 23, 2020.

21. The '366 patent is valid and enforceable.

II. The '908 Patent

22. On April 17, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,833,908 (“the '908 patent”), entitled “Channel Probing Signal for a Broadband Communication System.” A copy of the '908 patent is attached as Exhibit 2.

23. The '908 patent issued from U.S. Patent Application 16/902,740, which was filed on June 16, 2020 by Neo Wireless LLC on behalf of the inventors.

24. The '908 patent is valid and enforceable.

III. The '941 Patent

25. On September 11, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,075,941 (“the '941 patent”), entitled “Methods and Apparatus for Multi-Carrier Communications With Adaptive Transmission and Feedback.” A copy of the '941 patent is attached as Exhibit 3.

26. The '941 patent issued from U.S. Patent Application 15/082,878, which filed by Neocific, Inc. on March 28, 2016. The now-issued '941 patent was assigned from Neocific, Inc. to CFIP NCF LLC on November 22, 2019 before it was assigned to Neo Wireless LLC on January 23, 2020.

27. The '941 patent is valid and enforceable.

IV. The '450 Patent

28. On October 15, 2019, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,447,450 (“the '450 patent”), entitled “Method and System for Multi-Carrier Packet Communication with Reduced Overhead.” A copy of the '450 patent is attached as Exhibit 4.

29. The '450 patent issued from U.S. Patent Application 15/676,421, which was filed by Neocific, Inc. on August 14, 2017. The now-issued '450 patent was later assigned from Neocific, Inc. to CFIP NCF LLC on November 22, 2019 before it was assigned to Neo Wireless LLC on January 23, 2020.

30. The '450 patent is valid and enforceable.

V. The '512 Patent

31. On March 30, 2021, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,965,512 (“the '512 patent”), entitled “Method and Apparatus Using Cell-Specific and Common Pilot Subcarriers in multi-Carrier, Multi Cell Wireless Communication Networks.” A copy of the '512 patent is attached as Exhibit 5.

32. The '512 patent issued from U.S. Patent Application 17/012,813, which was filed by Neo Wireless on September 4, 2020.

33. The '512 patent is valid and enforceable.

VI. The '302 Patent

34. On September 8, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,771,302 (“the '302 patent”), entitled “Channel Probing Signal for a Broadband Communication System.” A copy of the '302 patent is attached as Exhibit 6.

35. The '302 patent issued from U.S. Patent Application 15/953,950, which was filed on April 16, 2019 and was assigned by Neocific, Inc. to CFIP NCF LLC on November 22, 2019 before it was assigned to Neo Wireless LLC on January 23, 2020.

36. The '302 patent is valid and enforceable.

37. Neo Wireless owns all rights, title, and interest in and to each of the '366, '908, '941, '450, '512, and '302 patents (the “Patents-in-Suit”) and possesses all rights of recovery.

FACTUAL ALLEGATIONS

38. Inventor Xiaodong (Alex) Li, Ph.D. founded Neocific Inc. in the early 2000s to design, develop, and implement a new wireless communication system. He and his co-inventors had extensive experience with wireless communications systems, including the development of the Wi-Max standards, and a deep understanding of the flaws in existing systems at the time. The inventors saw an opportunity to create a new wireless communication system meant to address those flaws while incorporating cutting-edge Orthogonal Frequency-Division Multiple Access (OFDMA) based technologies, and, starting in the 2004-2005 timeframe, they filed patents on the work.

39. Dr. Li served as the President and Founder of Neocific. Dr. Li obtained his Ph.D. in electrical engineering from the University of Washington, his M.S. from Shanghai Jiao Tong University, and his B.S. from Tsinghua University. Dr. Li has authored more than 30 journal and conference papers in wireless communications, video coding, and networking. He has been granted more than 100 U.S. and foreign patents.

40. Dr. Titus Lo, Ph.D. is a founding employee of Neocific. Dr. Lo obtained his Ph.D. in electrical engineering from McMaster University and his B.S. from the University of British Columbia. Dr. Lo has authored more than 30 technical papers in international peer-reviewed journals and presented more than 50 times at industry events. He has been granted more than 100 U.S. and foreign patents.

41. The inventions in the Patents-in-Suit relate to various improvements in OFDMA networks and corresponding user equipment, and those improvements have since been incorporated into the 3GPP standards for 4G/LTE and 5G/NR networks.

42. Neo Wireless owns all substantial right, title, and interest in the Patents-in-Suit, and holds the right to sue and recover damages for infringement thereof.

43. David Loo is the CEO of Plaintiff Neo Wireless. Mr. Loo works and resides in Wayne, Pennsylvania. Mr. Loo has over a decade of experience as a licensing executive and patent attorney with a well-established track record of assisting companies, inventors and patent holders to ensure they are fairly compensated for their inventions.

44. The wireless communication industry has been developing rapidly since Bell Labs developed the First Generation of modern commercial cellular technology in 1984. Multiple wireless communication technologies designated by generations emerged and brought new capacities to people all over the world. In 2008, 3GPP created and finalized the LTE standards as an upgrade to 3G. The cellular industry recognized its major benefits, and virtually all cellular device manufacturers have embraced LTE as the next generation of commercial cellular technology and developed phones, hotspots, and other cellular-connectivity devices to utilize the 4G LTE technology.

45. In recent years, automakers have implemented this cellular communications technology into their vehicles. Telematics systems first debuted in 1996 through OnStar using analog cell networks, which allowed consumers to receive remote diagnostics, remotely unlock vehicles, and receive emergency services after a collision. In 2007, 3G technology emerged, bringing greater speed and capacity to these features and allowing automakers to design more advanced functions.

46. When the technology emerged, Toyota began implementing the newest 4G LTE cellular technology into many of its products. 4G LTE technology provided for 10 times faster data speeds, increased responsiveness, and the ability to support voice and data connections simultaneously. 4G LTE connection further provides consumers with a variety of in-vehicle wi-fi hot spots and vast entertainment options. As a result, Toyota could better support a variety of

wireless features including SOS emergency assistance, automatic collision notification, stolen vehicle tracking, roadside assistance, remote start, remote climate control adjustment, navigation map updates, live traffic data, and wi-fi hotspot, etc.

47. Toyota provides 4G LTE connectivity in its various products via the Toyota Connected Services system integrated into its vehicles.

48. Building on these 4G LTE capabilities, Toyota developed and utilizes the Toyota App that enables its customers to interact with their vehicles from their cellular devices, using the cellular connectivity of the vehicles. Features on the Toyota App include remotely starting, unlocking and locking the vehicle, and notifying the owner when their vehicle needs maintenance or repairs.

49. Toyota models that implement 4G/LTE communications—including but not limited to the 4Runner, Avalon, Camry, C-HR, Corolla, Highlander, Mirai, Prius, Rav4, Sequoia and Lexus RC models—as well as those that may in the future implement 4G/LTE or 5G/NR capabilities, infringe the Patents-in-Suit and are collectively referred to herein as the “Accused Products.”

50. Toyota’s Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks and in communication with base stations and other network access points. The cellular networks and base stations are interoperable and implement the one or more releases of the 4G/LTE and NR/5G 3GPP standards from release 8 through at least release 17. The cellular networks, including the cell-serving base stations, are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration.

51. Additionally, the communications between Toyota's Accused Products and the serving base station include a multitude of signals back and forth in normal operation, such as when establishing connections, sending and receiving control information, sending and receiving reference signaling, communicating data in the uplink and downlink, obtaining network parameters, etc. And Toyota's Accused Products do this across a potentially large range of time and locations, including across a variety of base station equipment and configurations and/or wireless conditions. As such, Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards.

52. As described further below and set forth in Exhibits 7-12 the Asserted Patents read onto portions of the 4G/LTE or NR/5G standards, which Toyota implements in its Accused Products. In particular, Toyota and/or its customers and end users must practice one or more claims from each of the Asserted Patents in order to implement the 4G/LTE and/or NR/5G standards in the Accused Products. Thus, on information and belief, Toyota's implementation(s) of the LTE/4G and/or NR/5G necessarily infringes one or more claims of the Asserted Patents.

53. Toyota does not have any rights to the Patents-in-Suit.

54. Neo Wireless has complied with 35 U.S.C. § 287. Neo Wireless does not make, offer for sale, or sell within the United States any patented article under the Asserted Patents. Additionally, to the extent it was necessary, Neo Wireless provided Toyota with actual notice of its infringement prior to the filing of this lawsuit, or at a minimum by the filing of this Complaint.

55. In the interest of providing detailed averments of infringement, Neo Wireless has identified below at least one claim per patent to demonstrate infringement. However, the selection of claims should not be considered limiting, and additional claims of the Patents-in-Suit

(including method, system, and apparatus claims) that are infringed by the Toyota Defendants will be disclosed in compliance with the Court's rules related to infringement contentions.

TOYOTA'S ACTS OF PATENT INFRINGEMENT

56. Neo Wireless incorporates by reference the preceding paragraphs as if fully set forth herein.

57. As set forth below, Toyota's Accused Products incorporate, without any license from Neo Wireless, 4G/LTE and/or 5G/NR technology protected by patents owned by Neo Wireless. Neo Wireless respectfully seeks relief from this Court for Toyota's infringement.

58. Each Toyota entity, directly or by controlling the activities of its subsidiaries, has directly infringed, and continues to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) by making, using, selling and/or offering to sell, in this District and elsewhere in the United States, and/or importing into this District and elsewhere in the United States, one or more of Toyota's Accused Products, that is, certain infringing vehicles outfitted with instrumentalities that infringe the Asserted Patents, as further described in detail in Counts I-VI *infra*.

59. For example, TMC sells, and offers for sale infringing vehicles outfitted with instrumentalities that infringe the Asserted Patents to its customers, subsidiaries, distributors, retailers, dealerships and/or end users in the United States.

60. In particular, TMC manufactures and produces vehicles outfitted with instrumentalities that infringe the Asserted Patents in Japan, and sells and exports those vehicles to customers or entities in the United States, which are then imported through customs and made available at dealerships all throughout the United States.

61. TMC also owns and operates the Toyota Motor Corporation Official Global Website that offers for sale infringing vehicles outfitted with instrumentalities that infringe the Asserted Patents around the world, including the United States.¹

62. Furthermore, in 2017, Toyota created the “One Toyota” initiative putting all operations in North America, including R&D, manufacturing, sales, marketing, after sales, and corporate functions, under TMNA. Under the “One Toyota” initiative, TMEM, TMS, and TMCC operate under TMNA.

63. Within “One Toyota,” on information and belief, TMNA directly or by controlling the activities of its subsidiaries, makes, sells, offers for sale, uses, and imports the Accused Products in the United States. On information and belief, TMEM engages in the designing, developing, and manufacturing of the Accused Products sold, used, and offered for sale in the United States. On information and belief, TMS controls the sales of the Accused Products, as well as the after sales and corporate functions pertaining to the Accused Products. And, on information and belief, TMCC is responsible for selling Toyota’s lease returns through various channels, such as Dealer Direct, throughout the United States.

64. Each Toyota entity has indirectly infringed the Asserted Patents under 35 U.S.C. § 271(b) by actively inducing infringement by others, such as its subsidiaries, dealerships, distributors, retailers, and end-user customers, by, for example, implementing the infringing features in its cellular-capable products, encouraging its users to take advantage of LTE and/or NR features within the United States, and/or instructing, dictating, or training its dealerships and customers to use the infringing features. Because they performed these acts with full knowledge of the Asserted Patents and their infringement thereof, as set forth in detail below, each Toyota

¹ See <https://global.toyota/en/>.

entity has specifically intended others such as its subsidiaries, dealerships, distributors, retailers, and end-user customers to infringe Neo's Asserted Patents knowing its subsidiaries, dealerships, distributors, retailers, and end-user customers' acts constitute infringement.

For example, TNMA and TMS's advertising, sales, and/or technical materials related to the 3GPP LTE/4G and/or 5G/NR standards associated with the Toyota Accused Products contained and continue to contain instructions, directions, suggestions, and/or invitations that invite, entice, lead on, influence, encourage, prevail on, move by persuasion, and/or cause its subsidiaries, distributors, retailers, dealerships, customers, and the public to directly infringe at least one claim of each of the Patents-in-Suit, either literally or under the doctrine of equivalents.

Similarly, TMC and TMEEM's advertising, sales, design, development, and/or technical materials related to the 3GPP LTE/4G and/or 5G/NR standards associated with the Toyota Accused Products contained and continue to contain instructions, directions, suggestions, and/or invitations that invite, entice, lead on, influence, encourage, prevail on, move by persuasion, and/or cause its subsidiaries, distributors, retailers, dealerships, customers, and the public to directly infringe at least one claim of each of the Patents-in-Suit, either literally or under the doctrine of equivalents.

TMCC's advertising and/or sales encouraging use of features related to the 3GPP LTE/4G and/or 5G/NR standards associated with the Toyota Accused Products invite, entice, lead on, influence, encourage, prevail on, move by persuasion, and/or cause its subsidiaries, distributors, retailers, dealerships, customers, and the public to directly infringe at least one claim of each of the Patents-in-Suit, either literally or under the doctrine of equivalents.

65. Each Toyota entity has further provided the above-mentioned technical documentation and training materials to its subsidiaries, distributors, retailers, dealerships,

customers, and the public that cause end users of the Accused Products to utilize the products in a manner that directly infringe on one or more claims of the Asserted Patents, and engaged in such inducement to promote the sales of the Accused Products (i.e. through user manuals, product support, marketing materials, technical materials, and training materials) to actively induce the end users of the Accused Products to infringe the Asserted Patents.

66. For example, TMNA and TMS advertise and encourage its customers and end users to use the Toyota App, Safety Connect, Remote Connect, Service Connect, Destination Assist, and Wi-Fi Connect features for its Accused Products as a means to entice sales.² TMNA and TMS further instruct its customers and end users how to use the Accused Instrumentalities within its Accused Products.³

67. Similarly, TMNA, TMS, and TMEM advertise and provide its customers and end users with specifications describing the Accused Instrumentalities and how they are used in the Accused Products.

68. TMCC, as the reseller for its customers lease returns, also provides the above mentioned specs and encourages its customers and end users to use Toyota's 4g LTE Connected services and other infringing features in the resold Accused Products with a deliberate disregard for its known infringement of the Asserted Patents.

Toyota took the above actions intending to cause infringing acts by others.

69. Further, Toyota has made, used, sold, offered to sell, imported and/or encouraged the making, using, selling, offering to sell, or importing of Toyota's Accused Products despite knowing of an objectively high likelihood that its actions constituted infringement of the Asserted

² See <https://www.toyota.com/connected-services/>.

³ *Id.*

Patents at all times relevant to this suit. Alternatively, each Toyota entity subjectively believed there was a high probability that others would infringe the Asserted Patents but took deliberate steps to avoid confirming that it was actively inducing infringement by others.

70. Neo sent a letter to TMC and TMNA on November 29, 2021 that TMC and TMNA received no later than November 30, 2021, informing TMC and TMNA of Neo Wireless's relevant patent portfolio, including listing the patents-in-suit and how the patents-in-suit cover certain 3GPP wireless standards used in Toyota's Accused Products, in an attempt to initiate commercial licensing discussions. The letter was addressed to Takashi Fujimoto, TMC's Group Manager of Standardization & IP Support Group and was sent to TMNA (as well as TMS, TMEM, and TMCC by virtue of the One Toyota Initiative) at the One Toyota address location in Plano, Texas. Neither TMC or TMNA responded and both continued infringing the Asserted Patents despite being given actual notice of the Asserted Patents and its infringement in Neo's letter as early as November 30, 2021. In any event, TMC and TMNA were on actual notice of the Asserted Patents and their infringement on the date of service of this Complaint. Therefore, TMC and TMNA were or are now aware of the Asserted Patents and the Accused Products' infringement thereof, or have willfully blinded themselves as to the same, and have deliberately and wantonly continued to infringe on Neo's patent rights.

71. By virtue of the One Toyota initiative, Neo also provided TMS, TMEM, and TMCC with notice of the Asserted Patents and Toyota's infringement in the November 29, 2021 letter that each Toyota entity received on November 30, 2021. Moreover, TMS, TMEM, and TMCC were at least on actual notice of the Asserted Patents and their infringement on the date of service of this Complaint. Therefore, TMS, TMEM, and TMCC were or are now aware of the Asserted Patents and the Accused Products' infringement thereof, or have willfully blinded

themselves as to the same, and have deliberately and wantonly continued to infringe on Neo's patent rights.

72. By continuing to deliberately and intentionally infringe the Asserted Patents after obtaining actual knowledge of the Asserted Patents and Toyota's infringement, and by declining to engage in pre-suit discussions with Neo in response to Neo's November letter, each Toyota entity's infringement is egregious and willful.

73. For the reasons described above, Toyota's infringement of the Asserted Patents has been willful and egregious.

74. Toyota's acts of infringement have caused damage to Neo Wireless. Neo Wireless is entitled to recover from Toyota the damages incurred by Neo Wireless as a result of Toyota's wrongful acts.

COUNT ONE: INFRINGEMENT OF THE '366 PATENT

75. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

76. Each Toyota entity has infringed and continues to infringe the '366 Patent by implementing, using, offering for sale, and selling 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

77. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are

configured to accommodate those differences and implement the 3GPP standards wholistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

78. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 1 of the '366 patent. *See* Exhibit 7. Exhibit 7 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 1 of the '366 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 7 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '366 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 7, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 1 of the '366 patent and reflected in the 3GPP standard portions set out in Exhibit 7 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to the random-access procedure is integral to the establishment of connections between Toyota's Accused Products and the serving base stations for LTE networks. Additionally, Based on FCC filings and corroborating public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases, and are configured with the covered functionalities. Finally, on information and belief, due to the

features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

79. Toyota's Accused Products therefore meet at least one claim of the '366 patent.

80. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '366 patent and infringe under 35 U.S.C. § 271(a)–(b) in ways analogous to Toyota's current infringement described above.

81. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '366 patent.

COUNT TWO: INFRINGEMENT OF THE '908 PATENT

82. Neo Wireless incorporates the allegations of the foregoing paragraphs as if fully restated herein.

83. As described above, each Toyota entity has infringed and continues to infringe the Asserted Patents by implementing and using 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

84. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are

configured to accommodate those differences and implement the 3GPP standards wholistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

85. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 11 of the '908 patent. *See* Exhibit 8. Exhibit 8 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 11 of the '908 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 8 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '908 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 8, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 11 of the '908 patent and reflected in the 3GPP standard portions set out in Exhibit 8 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to the random-access procedure is integral to the establishment of connections between Toyota's Accused Products and the serving base stations for LTE networks. Additionally, Based on FCC filings and corroborating public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases, and are configured with the covered functionalities. Finally, on information and belief, due to the

features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

86. Toyota's Accused Products therefore meet at least one claim of the '908 patent.

87. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '908 patent and infringe under 35 U.S.C. § 271(a)-(b) in ways analogous to Toyota's current infringement described above.

88. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '908 patent.

COUNT THREE: INFRINGEMENT OF THE '941 PATENT

89. Neo Wireless incorporates the allegations of the foregoing paragraphs as if fully restated herein.

90. As described above, each Toyota entity has infringed and continues to infringe the Asserted Patents by implementing and using 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

91. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are

configured to accommodate those differences and implement the 3GPP standards wholistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

92. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 13 of the '941 patent. *See* Exhibit 9. Exhibit 9 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 13 of the '941 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 9 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '941 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 9, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 13 of the '941 patent and reflected in the 3GPP standard portions set out in Exhibit 9 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to the configuring the mobile device for accurate signal reception of subsequent signals based on the characteristics of the serving network components. Additionally, Based on FCC filings and corroborating public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases, and are configured with the covered functionalities. Finally, on information and belief, due to the

features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

93. Toyota's Accused Products therefore meet at least one claim of the '941 patent.

94. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '941 patent and infringe under 35 U.S.C. § 271(a)-(b) in ways analogous to Toyota's current infringement described above.

95. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '941 patent.

COUNT FOUR: INFRINGEMENT OF THE '450 PATENT

96. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

97. As described above, each Toyota entity has infringed and continues to infringe the Asserted Patents by implementing and using 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

98. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are

configured to accommodate those differences and implement the 3GPP standards wholistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

99. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 7 of the '450 patent. *See* Exhibit 10. Exhibit 10 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 7 of the '450 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 7 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '450 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 10, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 7 of the '450 patent and reflected in the 3GPP standard portions set out in Exhibit 10 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to the recovery of information over the Physical Downlink Control Channel is central to the operation of the mobile devices within an LTE networks, including allowing the update of information to allow the mobile device to communicate within serving base stations. Additionally, Based on FCC filings and corroborating public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases,

and are configured with the covered functionalities. Finally, on information and belief, due to the features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

100. Toyota's Accused Products therefore meet at least one claim of the '450 patent.

101. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '450 patent and infringe under 35 U.S.C. § 271(a)–(b) in ways analogous to Toyota's current infringement described above.

102. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '450 patent.

COUNT FIVE: INFRINGEMENT OF THE '512 PATENT

103. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

104. As described above, each Toyota entity has infringed and continues to infringe the Asserted Patents by implementing and using 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

105. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless

conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are configured to accommodate those differences and implement the 3GPP standards wholistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

106. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 15 of the '512 patent. *See* Exhibit 11. Exhibit 11 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 15 of the '512 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 11 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '512 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 11, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 15 of the '512 patent and reflected in the 3GPP standard portions set out in Exhibit 11 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to the reference signaling is important to maintain accurate signaling between the mobile device and the serving cells in the LTE network, particularly for mobile devices, such as those implemented in Toyota's Accused Products that are highly mobile and often move through multiple serving cells. Additionally, Based on FCC filings and corroborating

public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases, and are configured with the covered functionalities. Finally, on information and belief, due to the features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

107. Toyota's Accused Products therefore meet at least one claim of the '512 patent.

108. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '512 patent and infringe under 35 U.S.C. § 271(a)–(b) in ways analogous to Toyota's current infringement described above.

109. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '512 patent.

COUNT SIX: INFRINGEMENT OF THE '302 PATENT

110. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

111. As described above, each Toyota entity has infringed and continues to infringe the Asserted Patents by implementing and using 4G/LTE and/or 5G/NR cellular functionality according to one or more 3GPP standard releases from 8 through 17 in the Accused Products, and performing the acts of infringement described above.

112. Toyota's Accused Products are configured to operate across the various modes, formats, and schemes defined in the 4G/LTE and NR/5G 3GPP standards. Toyota's Accused Products are configured to operate within 4G/LTE and/or NR/5G cellular networks that are

controlled and configured by various carriers and implemented using a variety of hardware and/or software. Additionally, each base station may operate differently based on the wireless conditions, location, and/or network configuration. Accordingly, Toyota's Accused Products are configured to accommodate those differences and implement the 3GPP standards holistically, and do not exclude particular modes or schemes in which a serving base station may be configured to operate.

113. Each of Toyota's Accused Products implements the portions of the 3GPP LTE standard specification that read on at least claim 23 of the '302 patent. *See* Exhibit 12. Exhibit 12 illustrates how implementing and carrying out certain portions of the 3GPP LTE standard ("covered functionality") require the practicing of at least claim 23 of the '302 patent. *Id.* On information and belief, each portion of the standard cited in Exhibit 12 is implemented to provide LTE functionality in the Accused Products. For example, the covered functionality of the '302 patent is present in the 3GPP LTE standard from the earliest release number 8 through the last LTE release number 15. As further illustrated in Exhibit 12, third-party industry experts through textbooks and articles confirm the inclusion of the covered functionality within the 3GPP LTE standard. Further, industry experts consulted by Neo have confirmed that, based on their experience with and knowledge of the 3GPP standards and their implementation, the Accused Products are configured to practice the covered functionality when they provide LTE connectivity. The technology covered by claim 23 of the '302 patent and reflected in the 3GPP standard portions set out in Exhibit 12 is a core part of communications on an LTE network, and would be required in any device operating on said network. For example, the covered functionality related to reference signaling allows for accurate channel measurement and allocation of bandwidth resources, which is particularly important for highly mobile devices,

such as those implemented in Toyota's Accused Products, whose channel conditions and other wireless conditions may change frequently. Additionally, Based on FCC filings and corroborating public information, Defendant's Accused Products are compliant with various 3GPP LTE releases, including release 8 and later releases, and are configured with the covered functionalities. Finally, on information and belief, due to the features Toyota advertises as enabled by the 4G/LTE functionality, including but not limited to remote connectivity and Wi-Fi internet access, Toyota's Accused Products implement the covered functionality of the 3GPP LTE standard regardless of whether one or more aspects of that functionality is mandatory or optional to implement the LTE standard.

114. Toyota's Accused Products therefore meet at least one claim of the '302 patent.

115. To the extent that Toyota releases any new version of Toyota's Accused Products, such instrumentalities will meet the claims of the '302 patent and infringe under 35 U.S.C. § 271(a)–(b) in ways analogous to Toyota's current infringement described above.

116. Neo Wireless has been damaged and continues to be damaged by Toyota's infringement of the '302 patent.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

- a. a judgment in favor of Plaintiff that Defendants have infringed, either literally and/or under the doctrine of equivalents, the Asserted Patents;
- b. a judgment that Defendants' infringement has been and is willful;
- c. a judgment and order requiring Defendants to pay Plaintiff its damages, costs, expenses, and any enhanced damages to which Plaintiff is entitled for Defendants' infringement;
- d. a judgment and order requiring Defendants to provide an accounting and to pay

supplemental damages to Plaintiff, including without limitation, pre-judgment and post-judgment interest;

- e. a judgment and order requiring Defendants to pay ongoing royalties;
- f. a judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding Plaintiff its reasonable attorney fees against Defendants; and
- g. any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38, Plaintiff hereby demands trial by jury on all claims and issues so triable.

DATED: June 24, 2022

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically with the Clerk of Court using the CM/ECF system which will send notification of such filing to all counsel registered as Filing Users on this 24th day of June 2022.

/s/ Jason D. Cassady _____
Jason D. Cassady