

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

NOKIA CORPORATION,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. _____
	)	
APPLE INC.,	)	JURY TRIAL DEMANDED
	)	
Defendant.	)	

**COMPLAINT FOR PATENT INFRINGEMENT  
AND DECLARATORY JUDGMENT**

Plaintiff Nokia Corporation (“Nokia”), on personal knowledge as to its own acts, and on information and belief as to all others based on its investigation, alleges as follows:

**INTRODUCTION**

1. This is an action brought by Nokia against Apple Inc. (“Apple”) for Apple’s infringement of Nokia’s patents. In particular, Nokia seeks remedies for Apple’s infringement of Nokia’s U.S. Patent Nos. 5,802,465 (“the 465 Patent”), 5,862,178 (“the 178 Patent”), 5,946,651 (“the 651 Patent”), 6,359,904 (“the 904 Patent”), 6,694,135 (“the 135 Patent”), 6,775,548 (“the 548 Patent”), 6,882,727 (“the 727 Patent”), 7,009,940 (“the 940 Patent”), 7,092,672 (“the 672 Patent”), and 7,403,621 (“the 621 Patent”) (collectively, “the patents-in-suit”).

2. Each of the patents-in-suit is essential to one or more of the following standards: the Global System for Mobile Communications (“GSM”) Standard, the Universal Mobile Telecommunications System (“UMTS”) Standard, and the Institute of Electrical and Electronic Engineers (“IEEE”) 802.11 Standard.

3. Nokia has declared each of the patents-in-suit as essential to the GSM, UMTS, and/or 802.11 Standards, where applicable, and undertaken -- in accordance with the

applicable rules of the standard setting organizations (“SSO”) -- to grant licenses under each of the patents-in-suit on fair, reasonable, and nondiscriminatory (“FRAND”) terms and conditions (in some cases, alternatively referred to as “reasonable and non-discriminatory,” or “RAND,” terms).

4. On the basis of Nokia’s licensing commitments, Apple has the right to be granted license(s) under F/RAND terms and conditions with respect to a Standard.

5. Prior to filing this Complaint, Nokia has made various offers to Apple for the F/RAND terms and conditions of a license agreement under which each of the patents-in-suit could be licensed either individually or together with other Nokia essential patents (i.e., a portfolio license). In its offers to Apple, Nokia has specified both a portfolio rate and an average per-patent royalty rate which Apple could have accepted within a reasonable time for each of the patents-in-suit.

6. Apple has rejected Nokia’s offers for the F/RAND terms and conditions both on a portfolio and on a per-patent basis and thereby refused to compensate Nokia on F/RAND terms for its use of Nokia’s patented technologies, including each of the patents-in-suit.

7. In order to be fairly and adequately rewarded for the use of Nokia patented technology in the implementation of the standards, Nokia seeks by this action F/RAND compensation for Apple’s use of the patents-in-suit. In addition, Nokia seeks a declaration (i) that the patents-in-suit are infringed by Apple’s products complying with the respective Standards and that the patents-in-suit are not invalid or unenforceable (ii) that Nokia has complied with its obligations under the F/RAND undertakings by negotiating in good faith and offering and specifying F/RAND terms and conditions for the patents-in-suit, (iii) that Apple has refused to compensate Nokia on F/RAND terms for the patents-in-suit in breach of its obligation

to pay for the use of the Nokia patents, and (iv) that Nokia is entitled to an injunction until and unless Apple pays F/RAND compensation, together with interest, for past infringement of the patents-in-suit and irrevocably commits to pay such compensation in the future.

### **PARTIES**

8. Plaintiff Nokia is incorporated under the laws of Finland and has its principal place of business at Keilalahdentie 4, Espoo, Finland.

9. Nokia was founded in 1865 and is the world's largest manufacturer of mobile telephones. Nokia is one of the champions of wireless cellular communications and has received numerous awards and accolades for its achievements, including introducing the first car phone on the first international cellular mobile network in 1981.

10. Nokia's innovations continue today. In 1991, the world's first genuine call on GSM was made with a Nokia phone. In 1996, Nokia introduced the Nokia 9000 Communicator, which was the first all-in-one phone, fax, calendar, e-mail and Internet device in a hand-portable size. The Nokia 8110i, introduced in 1997, was the first mobile phone with a dynamic menu supporting Smart Messaging. Just two years later, Nokia introduced the Nokia 7110, which was the first mobile phone compliant with the Wireless Application Protocol 1.1, which provided access to mobile Internet services, such as banking, e-mail, and news, as well as the first phone with predictive text input.

11. In 2001, Nokia made the world's first 3G WCDMA voice call on a commercial system, and launched its first imaging phone with an integrated camera, the Nokia 7650. In 2002, Nokia introduced the world's first UMTS/GSM dual mode phone, and the first Nokia phone to record video simultaneously with sound. The Nokia 5140, launched in 2003 was

the first Push-to-Talk GSM handset. In 2006, Nokia introduced the N95, which was the first Nokia phone with built-in GPS.

12. Research is one of the keys to Nokia's success. As of December 2008, Nokia had research and development presence in 16 countries and employed over 39,000 people in research and development. Such research and development led to the innovations found in the patents-in-suit.

13. In the 1980s, Nokia led the charge to establish the communications protocols that are still used today. Without Nokia's contributions and innovation, the world would not have the communications standards that it has today. Nokia continues to be a leader in mobile communications worldwide and continues to invest millions of dollars annually in new developments in mobile communications.

14. Upon information and belief, Defendant Apple is a corporation duly organized and existing under the laws of the state of California and has a principal place of business at 1 Infinite Loop, Cupertino, California 95014.

15. Upon information and belief, Apple did not make telephones, much less mobile telephones, until 2007. Apple's wireless communication devices take advantage of the decades of continued investments by Nokia to build today's communication protocols. By refusing to compensate Nokia for its patented technologies, Apple is attempting to get a "free-ride" on the billions of dollars that Nokia has invested in research and development to provide the public with the wireless communications it enjoys today.

## **JURISDICTION AND VENUE**

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

17. This Court has personal jurisdiction over Apple because Apple has established minimum contacts with the forum. Apple manufactures (directly or indirectly through third party manufacturers)and/or assembles products that are and have been used, offered for sale, sold, and purchased in Delaware. Apple, directly and/or through its distribution network, places wireless communication devices within the stream of commerce, which stream is directed at this district, with the knowledge and/or understanding that such products will be sold in the State of Delaware. Therefore, the exercise of jurisdiction over Apple would not offend traditional notions of fair play and substantial justice.

18. Apple does business in this district, including providing products that are used, offered for sale, sold, and have been purchased in Delaware. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), (c), (d) and 1400(b).

## **FACTUAL BACKGROUND**

### **The Mobile Wireless Industry**

19. The wireless devices developed and marketed by Nokia and Apple connect to a variety of wireless networks, including the networks of wireless carriers to provide telecommunications service. Carriers operate wireless systems that enable users to place and receive telephone calls, send and receive e-mails, and connect to the internet through wireless devices. Leading carriers in the United States include AT&T (formerly Cingular), T-Mobile USA, Verizon Wireless, and Sprint.

20. Companies around the world manufacture wireless devices. These manufacturers typically sell their phones to the mobile wireless carriers, which in turn sell the phones to users. Wireless devices contain, among other components, one or more computer chipsets that enable the phone to communicate with the carriers' wireless systems. Carriers, device manufacturers, and chipset manufacturers must create equipment and devices compatible with each other by using common mobile wireless technology. Since carriers, device manufacturers, and chipset manufacturers must create equipment and devices compatible with each other to provide mobile wireless services, developers and manufacturers participate in the crucial process of standards development.

21. The progression from cell phones, which primarily focus on voice communications, to smart phones required more advanced mobile wireless technologies for communications involving transmission of data such as e-mail. Since the mass market introduction of the cell phone in the 1980s, mobile wireless technology has evolved to keep pace with the rising volume of voice traffic as well as to incorporate the data transmission capabilities necessary to support increasingly sophisticated phones and other handheld devices. The technology has evolved in what are commonly referred to as "generations" of mobile wireless technology.

22. The first generation of mobile wireless technology (1G) consisted of analog devices and networks that carried only voice traffic. The second generation of mobile wireless technology (2G) began the transition to digital devices and networks providing more efficient use of available spectrum for voice traffic and limited support for data-intensive applications such as paging and text messaging. The emergence of 2G technologies coincided with the growing commercial use of the Internet. The greater data capacity of advanced 2G

networks allowed for the development of the first smart phones, which offered new capabilities such as taking and transmitting photographs, sending and receiving email, and limited web browsing. Third generation (3G) wireless technology supports more advanced data intensive services, such as multimedia, web browsing, music and video downloads, e-commerce, and position location. Fourth Generation (4G) wireless technology is currently being developed. 4G technologies will provide voice, data, and streamed media at much higher data rates compared to the previous generations. Almost all wireless carriers currently support and provide 2G technology, and most have also introduced 3G networks and services. Some carriers have announced plans for migration to 4G networks and services in the coming years.

#### **The Importance of Standards**

23. The UMTS and GSM standards, as well as other mobile radio standards, were developed under the patronage of the European Telecommunications Standards Institute (“ETSI”). ETSI is a non-profit institution that was founded in 1988 through an initiative of the European Commission by several companies active in mobile communication with the objective to develop a common mobile radio standard for Europe. Since it was founded, ETSI has grown to include approximately 700 members from 56 countries. Among these members are virtually every company active in the mobile radio sector, who together account for a substantial share of the supply of mobile telecommunications equipment and services. Nokia and Apple are both members of ETSI.

24. ETSI brings important market participants in the mobile radio sector together. Within the context of ETSI, the members develop technical standards, which often lead to a factually binding industry standard. In some cases, national or international regulatory bodies require adherence to particular ETSI standards.

25. Many ETSI members, including Nokia, are engaged in research and development of new telecommunications technologies, and own intellectual property rights relating to different elements of such technologies. Accordingly, when ETSI adopts technical standards, it must take into account that many elements of the standards are likely to be covered by such intellectual property rights. Therefore, others wishing to exploit the standard may need licenses for the essential intellectual property rights to do so. ETSI has therefore adopted an Intellectual Property Policy (“the ETSI IPR Policy”) to govern the manner in which ETSI will take account of such intellectual property rights in the process leading to the adoption of ETSI standards.

26. The ETSI IPR policy was adopted in 1994 and the policy has been part of the “ETSI Directives” since December 2004. Its provisions are further explained in the ETSI Guide on Intellectual Property Rights.

27. The objectives of the ETSI IPR Policy are defined in its Clause 3. Clause 3.1 provides as follows:

It is ETSI’s objective to create STANDARDS and TECHNICAL SPECIFICATIONS that are based on solutions which best meet the technical objectives of the European telecommunications sector, as defined by the General Assembly. In order to further this objective the ETSI IPR POLICY seeks to reduce the risk to ETSI, MEMBERS, and others applying ETSI STANDARDS and TECHNICAL SPECIFICATIONS, that investment in the preparation, adoption and application of STANDARDS could be wasted as a result of an ESSENTIAL IPR for a STANDARD or TECHNICAL SPECIFICATION being unavailable. In achieving this objective, the ETSI IPR POLICY seeks a balance between the needs of standardization for public use in the field of telecommunications and the rights of the owners of IPRs.

28. In order to achieve its objectives, the ETSI IPR Policy contains rules regarding the disclosure of essential IPR and rules regarding their licensing on FRAND terms. Members are obligated to use their reasonable endeavors to inform ETSI of essential IPRs in a timely manner, and voluntarily undertake to grant licenses on FRAND terms and conditions.



Therefore, ETSI allows its members to hold and benefit from any IPRs which they may own, including the right to refuse the granting of licenses.

29. Clause 6.1 of the ETSI IPR Policy provides:

When an essential IPR relating to a particular standard or technical specification is brought to the attention of ETSI, the director-general of ETSI shall immediately request the owner to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licenses on fair, reasonable, and non-discriminatory terms and conditions under such IPR to at least the following extent . . .

30. The ETSI IPR Policy provides that firms owning potentially essential patents will provide undertakings of the kind envisaged by clause 6.1 of the ETSI IPR Policy preferably before adoption of the respective standard. If an owner of an essential IPR does not submit this declaration, keeping its technology proprietary, alternatives are sought to the essential technology, which would not require the infringement of the IPR, pursuant to Clause 8.1.1 of the ETSI IPR Policy. If no technical alternative is available, the development of the respective standards is ceased, under Clause 8.1.2 of the ETSI IPR Policy.

31. Pursuant to the ETSI IPR Policy, Nokia has submitted declarations for certain of the patents-in-suit. For example, with respect to the 465 Patent, Nokia submitted a declaration stating the following:

The signatory has notified ETSI that it is the proprietor of the IPRs listed above and has informed ETSI that it believes that the IPRs may be considered ESSENTIAL to the Standards listed above. The SIGNATORY and/or its AFFILIATES hereby declare that they are prepared to grant irrevocable licences under the IPRs on terms and conditions which are in accordance with Clause 6.1 of the ETSI IPR Policy, in respect of the STANDARD, to the extent that the IPRs remain essential. . . .

The construction, validity and performance of this DECLARATION shall be governed by the laws of France.

32. Like ETSI, the Institute of Electrical and Electronics Standards Association (IEEE-SA) is a developer of industry standards in a number of industries, including

telecommunications, information technology, nanotechnology, and information assurance. Among the standards developed by IEEE-SA is IEEE 802.11, the standard for WLAN and IEEE 802.16, the standard for WiMax.

33. Like ETSI, many IEEE-SA members, including Nokia, are engaged in the research and development of new technologies and own intellectual property rights relating to different elements of such technologies. Accordingly, IEEE-SA has adopted a similar intellectual property policy as ETSI in the IEEE-SA Standards Board Bylaws (“IEEE-SA Bylaws”).

34. Clause 6.2 of the IEEE-SA Bylaws states that when a standard includes the use of Essential Patent Claims, a “letter of assurance” with regard to the essential patent may be requested. That letter of assurance may include:

....

A statement that a license for a compliant implementation of the standard will be made available to an unrestricted number of applicants on a worldwide basis without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination. At its sole option, the Submitter may provide with its assurance any of the following: (i) a not-to-exceed license fee or rate commitment, (ii) a sample license agreement, or (iii) one or more material licensing terms.

35. Clause 6.2 of the IEEE-SA Bylaws further provides for an instance where a party providing a letter of assurance discovers additional claims that are essential to a standard:

If, after providing a Letter of Assurance to the IEEE, the Submitter becomes aware of additional Patent Claim(s) not already covered by an existing Letter of Assurance that are owned, controlled, or licensable by the Submitter that may be or become Essential Patent Claim(s) for the same IEEE Standard but are not the subject of an existing Letter of Assurance, then such Submitter shall submit a Letter of Assurance stating its position regarding enforcement or licensing of such Patent Claims. For the purposes of this commitment, the Submitter is deemed to be aware if any of the following individuals who are from, employed by, or otherwise represent the Submitter have personal knowledge of additional potential Essential Patent Claims, owned or controlled by the Submitter, related to a [Proposed] IEEE Standard and not already the subject of a previously submitted

Letter of Assurance: (a) past or present participants in the development of the [Proposed] IEEE Standard, or (b) the individual executing the previously submitted Letter of Assurance.

36. Clause 6.2 of the IEEE-SA Bylaws also provides that a letter of assurance, once submitted, is irrevocable.

37. Pursuant to the IEEE-SA Bylaws, Nokia has submitted letters of assurance for certain of the patents-in-suit. For example, with respect to the 465 Patent, Nokia submitted a letter of assurance stating the following:

In accordance with Clause 6.2 of the *IEEE-SA Standards Board Bylaws*, the Submitter hereby declares the following: ...

The Submitter may own, control or have the right to license Patent Claims that might be or become Essential Patent Claims. With respect to such Essential Patent Claims, the submitter's licensing position is as follows: ...

The Submitter will grant a license under reasonable rates to an unrestricted number of applicants on a worldwide basis with reasonable terms and conditions that are demonstrably free of unfair discrimination.

#### **F/RAND**

38. Standards Setting Organizations ("SSOs") are formed to allow wide promulgation and utilization of commonly defined standards. These standards must be available and accessible in order to produce the intended efficiency gains and benefits and thereby for the standardization process itself to comply with competition law. Intellectual Property Rights policies ("IPR Policies"), like those described above, provide essential IPR holders committing to license on F/RAND terms with the benefit of collecting F/RAND compensation from a far larger market than they would have enjoyed if the protected technology had not been incorporated in the standard. Because competing proprietary technologies and systems have been abandoned in favor of a single, universal, and standardized system and set of technologies, a holder of an essential IPR can collect royalties on a large volume of standards-compliant

products from a wide variety of manufacturers worldwide. In contrast, if the IPR holder's protected technology was only used in one of a number of competing systems or proprietary technologies, the patent holder could only generate returns on its R&D investments through differentiation and -- if it chose to license -- only collect royalties from manufacturers who chose to market and sell products for the narrow proprietary technology. This is why committing to F/RAND licensing is advantageous and rarely refused by essential IPR holders.

39. An IPR holder that has voluntarily undertaken to license its IPRs on F/RAND terms (instead of keeping the inventions proprietary) has irrevocably committed to allow the standard to be implemented under its IPR on F/RAND basis and thereby waived -- absent exceptional circumstances -- its legally defined right to exclude others from practicing the standard under its IPR. This also means that the IPR holder cannot use its hold-up power resulting from the incorporation of its technology into the standard and the IPR holder's right to exclude to extort royalties that do not comply with F/RAND.

40. Once an IPR holder has made a F/RAND commitment, all manufacturers have the right to implement the standard in their products and use the inventions from any declared essential IPRs. There is no need to wait until all the particular F/RAND terms and conditions have been negotiated with the IPR holder or until a definitive license agreement is executed setting out those terms. However, it is clear that in return for the right to practice the standard under the essential IPRs, implementing manufacturers have the obligation to pay F/RAND compensation for the IPR used (to the extent not invalid or unenforceable). For example, according to the ETSI IPR Policy Clause 3.2:

IPR holders whether members of ETSI and their AFFILIATES or third parties, should be adequately and fairly rewarded for the use of their IPRs in the implementation of STANDARDS and TECHNICAL SPECIFICATIONS.

41. Save for cases where the manufacturer refuses to take a license altogether, it follows from F/RAND licensing commitments that the IPR holder has a duty to negotiate in good faith and propose F/RAND terms. Negotiations over F/RAND terms may cover the essential IPR portfolio as a whole but, if requested, F/RAND terms should be available for each patent separately.

42. If the implementer refuses to take a license altogether or refuses to pay F/RAND compensation for valid and enforceable IPRs used by it, exceptional circumstances are present and the IPR holder may seek an injunction to prevent the implementer from continuing to manufacture standard-compliant products without payment. The injunction only extends for so long as the manufacturer refuses to pay F/RAND compensation.

**Apple's Refusal to pay F/RAND Compensation**

43. Nokia has irrevocably undertaken the obligation to grant license(s) on F/RAND terms and conditions to its essential patents, including the patents-in-suit, and Apple has the corresponding right to claim licenses on F/RAND terms on the basis of Nokia's undertakings.

44. In compliance with its declarations and undertakings which Nokia submitted with regard to the patents-in-suit, prior to filing this complaint Nokia has negotiated in good faith over the F/RAND licensing terms with Apple. Nokia has made various offers to Apple for the F/RAND terms and conditions of a license agreement under which the patents-in-suit could be licensed either individually or in combination with other Nokia essential patents. In its offers, made subject to reciprocity, Nokia has defined both a portfolio rate and an average per patent royalty rate which Apple could have accepted within a reasonable time. Nokia has also provided Apple with information on the method used to calculate royalties as well as claim charts assisting Apple with its technical analysis.

45. Apple has rejected Nokia's offers for the F/RAND terms and conditions both on a portfolio and on a per patent basis and thereby refused to compensate Nokia on F/RAND terms for the use of Nokia patented technology, including the patents-in-suit.

46. Due to Apple's violation of its obligation to pay F/RAND compensation for the use of Nokia's patents, Nokia has no choice but to file this Complaint in order to enforce its right to be compensated on a F/RAND basis for the use of the patents in suit in Apple's standards-compliant products, and to prevent further infringement unless and until Apple pays F/RAND compensation, together with interest, for its past infringement and irrevocably commits to payment of such compensation in the future.

#### **OVERVIEW OF THE PATENTS-IN-SUIT.**

47. The patents-in-suit are a reflection of Nokia's research and development and achievements in the world of mobile communications. To provide a few examples, Nokia is a leader in wireless data and owns important patents in this area. Today's wireless devices are used for a wide variety of tasks, such as sending email, browsing the Internet, and downloading applications. These tasks all involve Nokia's advances in wireless data. Without these advances, it would be difficult to work remotely from a coffee shop or download a new game to a phone.

48. Nokia is also a leader in speech coding and owns important patents in this area. In order to send audio, today's phones transmit the audio as a series of 1's and 0's. Speech coding is the backbone of any digital wireless system. Without speech coding, it would be difficult to talk clearly or listen to music without overwhelming the limited resources of the network.

49. Nokia is also a leader in security and encryption and owns important patents in this area. Today's wireless devices are frequently used for e-commerce and other purchases. Nokia's technology allows people to use their wireless devices to conduct business without their confidential information being intercepted.

#### **Wireless Data Patents**

50. The 465 Patent, entitled *Data Transmission in a Radio Telephone Network*, was duly and lawfully issued on September 1, 1998. Nokia is the current owner of all rights, title, and interest in the 465 Patent. A true and correct copy of the 465 Patent is attached hereto as Exhibit A.

51. The 465 Patent is essential and has been declared essential to at least the GSM, UMTS, and IEEE 802.11 standards. The 465 Patent invention allows communication over wireless networks while conserving resources on the network. It provides for the formation of a virtual data channel, such that a real data channel can be quickly established when data transmission is desired.

52. The 904 Patent, entitled *Data Transfer in a Mobile Telephone Network*, was duly and lawfully issued on March 19, 2002. Nokia is the current owner of all rights, title, and interest in the 904 Patent. A true and correct copy of the 904 Patent is attached hereto as Exhibit B.

53. The 904 Patent is essential and has been declared essential to at least the GSM and IEEE 802.11 standards. The 904 Patent allows for simpler communication on the networks. The invention provides that, in a radio block to be coded, user data is transferred in octet form to simplify the flow of data in the network.

54. The 135 Patent, entitled *Measurement Report Transmission in a Telecommunications System*, was duly and lawfully issued on February 17, 2004. Nokia is the

current owner of all rights, title, and interest in the 135 Patent. A true and correct copy of the 135 Patent is attached hereto as Exhibit C.

55. The 135 Patent is essential and has been declared essential to at least the GSM standard. The 135 Patent provides an efficient method of communicating information about a mobile device operating in downlink transfer by enabling the mobile device to respond to polling codes with messages that indicate the condition of the mobile device.

56. The 548 Patent, entitled *Access Channel for Reduced Access Delay in a Telecommunications System*, was duly and lawfully issued on August 10, 2004. Nokia is the current owner of all rights, title, and interest in the 548 Patent. A true and correct copy of the 548 Patent is attached hereto as Exhibit D.

57. The 548 Patent is essential and has been declared essential to at least the UMTS standard. The 548 Patent enables a mobile station to access the network with less delay. The '548 invention enables access requests to be adjusted based on channel conditions, reducing overall access delays.

58. The 672 Patent, entitled *Reporting Cell Measurement Results in a Cellular Communication System*, was duly and lawfully issued on August 15, 2006. Nokia is the current owner of all right, title, and interest in the 672 Patent. A true and correct copy of the 672 Patent is attached hereto as Exhibit E.

59. The 672 Patent is essential and has been declared essential to at least the GSM standard. The 672 Patent enables a mobile device to report an increased number of signal quality measurements to a mobile network.

#### **Speech Coding Patents**

60. The 178 Patent, entitled *Method and Apparatus for Speech Transmission in a Mobile Communications System*, was duly and lawfully issued on January 19, 1999. Nokia



is the current owner of all rights, title, and interest in the 178 Patent. A true and correct copy of the 178 Patent is attached hereto as Exhibit F.

61. The 178 Patent is essential and has been declared essential to at least the GSM standard. The 178 Patent ensures clear, efficient speech communications over mobile networks. The 178 Patent invention enables multiple speech coding methods to operate at different transmission rates by using two stages of channel encoding, one of which is dependent on the speech coding method, and one of which is not dependent on the speech coding method.

62. The 651 Patent, entitled *Speech Synthesizer Employing Post-Processing for Enhancing the Quality of the Synthesized Speech*, was duly and lawfully issued on August 31, 1999. Nokia is the current owner of all rights, title, and interest in the 651 Patent. A true and correct copy of the 651 Patent is attached hereto as Exhibit G.

63. The 651 Patent is essential and has been declared essential to at least the GSM standard. The 651 Patent ensures clear voice and audio communications over mobile networks. The 651 Patent invention provides for a postfilter for processing speech signals derived from an excitation code book and adaptive code book of a speech decoder.

#### **Security and Encryption Patents**

64. The 727 Patent, entitled *Method of Ciphering Data Transmission in a Radio System*, was duly and lawfully issued on April 19, 2005. Nokia is the current owner of all rights, title, and interest in the 727 Patent. A true and correct copy of the 727 Patent is attached hereto as Exhibit H.

65. The 727 Patent is essential and has been declared essential to at least the UMTS standard. The 727 Patent ensures secure transmission of data over mobile networks. The '727 invention prevents data from falling into the wrong hands by using a ciphering algorithm with a channel-specific parameter among its inputs.

66. The 940 Patent, entitled *Integrity Check in a Communication System*, was duly and lawfully issued on March 7, 2006. Nokia is the current owner of all rights, title, and interest in the 940 Patent. A true and correct copy of the 940 Patent is attached hereto as Exhibit I.

67. The 940 Patent is essential and has been declared essential to at least the UMTS standard. The 940 Patent ensures secure transmission of data over mobile networks. The 940 Patent protects communications using an integrity algorithm calculated from values including channel identity information.

68. The 621 Patent, entitled *System for Ensuring Encrypted Communication After Handover*, was duly and lawfully issued on July 22, 2008. Nokia is the current owner of all rights, title, and interest in the 621 Patent. A true and correct copy of the 621 Patent is attached hereto as Exhibit J.

69. The 621 Patent is essential and has been declared essential to at least the GSM and UMTS standards. The 621 Patent ensures continued secure transmissions during a handover by communicating information about encryption algorithms supported by a mobile station between radio access networks.

#### **APPLE'S INFRINGEMENT**

70. Upon information and belief, Apple has infringed and continues to infringe each of the patents-in-suit by engaging in acts constituting infringement under 35 U.S.C. § 271, including but not necessarily limited to one or more of making, using, selling and offering to sell, in this District and elsewhere in the United States, and importing into this District and elsewhere in the United States, one or more products and services that comply with the GSM, UMTS, and/or IEEE 802.11 standards, including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS.

### **HARM TO NOKIA FROM APPLE'S INFRINGEMENT**

71. Nokia is harmed by Apple's failure to pay F/RAND compensation for its use of Nokia patented technology in a way that cannot necessarily be compensated for by a payment of a past due F/RAND royalty alone. Apple's failure to pay a F/RAND rate for the use of the patents-in-suit in its products at the time of their sale allows it to charge less for its products because it does not have to recover the costs of development of the technology used in the device. This allows it to obtain market share that it would otherwise not be able to obtain were its products to bear the costs for the patented technology.

72. Nokia's products, in turn, must bear the costs of the development of the technology that allows them to function in compliance with the relevant standards. This puts Nokia in a competitive disadvantage to "free-riders" such as Apple.

73. Even if Apple were to subsequently pay past due F/RAND royalties, it would still enjoy a market share it otherwise would not have but for the period of "free riding." Nokia would likewise lose its portion of the market share for the period of the "free riding." Due to the difficulty in predicting whether, if at all, such market share can be recovered, Nokia's harm cannot be compensated by payment of past due F/RAND royalties alone.

### **COUNT I INFRINGEMENT OF U.S. PATENT NO. 5,802,465**

74. Nokia incorporates by reference the allegations set forth in Paragraphs 1-73 of this Complaint as though fully set forth herein.

75. Apple has infringed and is infringing the 465 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 465 Patent.

76. Apple is inducing the infringement of the 465 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

77. Apple is contributing to the infringement of the 465 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

78. Apple's infringement of the 465 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

79. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT II**  
**INFRINGEMENT OF U.S. PATENT NO. 5,862,178**

80. Nokia incorporates by reference the allegations set forth in Paragraphs 1-79 of this Complaint as though fully set forth herein.

81. Apple has infringed and is infringing the 178 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services that include an encoder and decoder for simultaneous bi-directional voice and/or data communications, including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 178 Patent. Nokia does not allege infringement by Apple based on the making, using, offering for sale, or selling in the United States any product that does not include an encoder and decoder for simultaneous bi-directional voice and/or data communications.

82. Apple is inducing the infringement of the 178 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

83. Apple is contributing to the infringement to the infringement of the 178 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

84. Apple's infringement of the 178 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

85. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT III  
INFRINGEMENT OF U.S. PATENT NO. 5,946,651**

86. Nokia incorporates by reference the allegations set forth in Paragraphs 1-85 of this Complaint as though fully set forth herein.

87. Apple has infringed and is infringing the 651 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services that include an encoder and decoder for simultaneous bi-directional voice and/or data communications, including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 651 Patent. Nokia does not allege infringement by Apple based on the making, using, offering for sale, or selling in the United States any product that does not include an encoder and decoder for simultaneous bi-directional voice and/or data communications.

88. Apple is inducing the infringement of the 651 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

89. Apple is contributing to the infringement to the infringement of the 651 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

90. Apple's infringement of the 651 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

91. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT IV  
INFRINGEMENT OF U.S. PATENT NO. 6,359,904**

92. Nokia incorporates by reference the allegations set forth in Paragraphs 1-91 of this Complaint as though fully set forth herein.

93. Apple has infringed and is infringing the 904 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 904 Patent.

94. Apple is inducing the infringement of the 904 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

95. Apple is contributing to the infringement to the infringement of the 904 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

96. Apple's infringement of the 904 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

97. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT V**  
**INFRINGEMENT OF U.S. PATENT NO. 6,694,135**

98. Nokia incorporates by reference the allegations set forth in Paragraphs 1-97 of this Complaint as though fully set forth herein.

99. Apple has infringed and is infringing the 135 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 135 Patent.

100. Apple is inducing the infringement of the 135 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

101. Apple is contributing to the infringement to the infringement of the 135 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

102. Apple's infringement of the 135 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

103. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT VI**  
**INFRINGEMENT OF U.S. PATENT NO. 6,775,548**

104. Nokia incorporates by reference the allegations set forth in Paragraphs 1-103 of this Complaint as though fully set forth herein.

105. Apple has infringed and is infringing the 548 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 548 Patent.

106. Apple is inducing the infringement of the 548 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

107. Apple is contributing to the infringement to the infringement of the 548 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

108. Apple's infringement of the 548 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

109. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.



**COUNT VII**  
**INFRINGEMENT OF U.S. PATENT NO. 6,882,727**

110. Nokia incorporates by reference the allegations set forth in Paragraphs 1-109 of this Complaint as though fully set forth herein.

111. Apple has infringed and is infringing the 727 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 727 Patent.

112. Apple is inducing the infringement of the 727 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

113. Apple is contributing to the infringement to the infringement of the 727 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

114. Apple's infringement of the 727 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

115. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT VIII**  
**INFRINGEMENT OF U.S. PATENT NO. 7,009,940**

116. Nokia incorporates by reference the allegations set forth in Paragraphs 1-115 of this Complaint as though fully set forth herein.

117. Apple has infringed and is infringing the 940 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services

including wireless communication devices such as the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 940 Patent.

118. Apple is inducing the infringement of the 940 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

119. Apple is contributing to the infringement to the infringement of the 940 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

120. Apple's infringement of the 940 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

121. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT IX  
INFRINGEMENT OF U.S. PATENT NO. 7,092,672**

122. Nokia incorporates by reference the allegations set forth in Paragraphs 1-121 of this Complaint as though fully set forth herein.

123. Apple has infringed and is infringing the 672 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone 3G, and Apple iPhone 3GS, that infringe one or more claims of the 672 Patent.

124. Apple is inducing the infringement of the 672 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

125. Apple is contributing to the infringement to the infringement of the 672 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

126. Apple's infringement of the 672 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

127. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT X**  
**INFRINGEMENT OF U.S. PATENT NO. 7,403,621**

128. Nokia incorporates by reference the allegations set forth in Paragraphs 1-127 of this Complaint as though fully set forth herein.

129. Apple has infringed and is infringing the 621 Patent by making, using, offering for sale, and selling in the United States, without authority, products and services including wireless communication devices such as the Apple iPhone, the Apple iPhone 3G, and Apple iPhone 3GS, that are covered by one or more claims of the 621 Patent.

130. Apple is inducing the infringement of the 621 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

131. Apple is contributing to the infringement to the infringement of the 621 Patent by others in the United States. The direct infringement occurs by the activities of end users of the accused products.

132. Apple's infringement of the 621 Patent is exceptional and entitles Nokia to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

133. Apple's acts of infringement have caused damage to Nokia and Nokia is entitled to recover from Apple F/RAND compensation as a result of Apple's wrongful acts in an amount subject to proof at trial, and such other relief as may be appropriate.

**COUNT XI  
DECLARATORY JUDGMENT REGARDING F/RAND RIGHTS**

134. Nokia incorporates by reference the allegations set forth in Paragraphs 1-133 of this Complaint as though fully set forth herein.

135. The patents-in-suit are infringed, not invalid, and enforceable.

136. Prior to filing this lawsuit, Nokia made various offers to Apple for a license to make, use, offer to sell, and/or sell products embodying the claims of the patents-in-suit, and/or the methods of the claims of the patents-in-suit.

137. Nokia has met its obligations under its F/RAND undertakings through, among other things, the offers made by Nokia to Apple.

138. Despite Nokia's offers for the F/RAND terms and conditions for a license under the patents-in-suit to Apple, Apple has refused to compensate Nokia on F/RAND terms for the use of the patents-in-suit in breach of its obligation to pay for the use of Nokia's patents.

139. Apple's continued use of the patents-in-suit without paying F/RAND compensation has caused and will continue to cause Nokia irreparable harm unless enjoined by the Court until Apple pays to Nokia F/RAND compensation for past infringement, and irrevocably commits to payment of such compensation in the future.

140. Once the appropriate compensation on F/RAND terms is determined, Apple should be enjoined from importing, making, using, selling, or offering for sale products and services embodying the claimed inventions of the patents-in-suit until and unless it pays

Nokia F/RAND compensation for past infringement, and irrevocably commits to payment of such compensation in the future.

141. This Court's equitable powers are hereby invoked by this Court, and Nokia accordingly requests that the Court consider such other relief, equitable or otherwise, as it may find appropriate at the time for entry of judgment in this case.

**DEMAND FOR JURY TRIAL**

142. Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Nokia demands a trial by jury of this action.

**PRAYER FOR RELIEF**

WHEREFORE, Nokia prays for judgment and seeks relief against Apple as follows:


- (a) For judgment that the patents-in-suit have been and continue to be directly and/or indirectly infringed by Apple;
- (b) For judgment that the patents-in-suit are not invalid and are enforceable;
- (c) For judgment that Nokia has complied with its legal obligations with respect to negotiating F/RAND terms and conditions of licenses to the patents-in-suit to Apple;
- (d) For judgment that Apple has refused to compensate Nokia on a F/RAND basis for Apple's use of the patents-in-suit;
- (e) Once the appropriate F/RAND compensation is determined, for a permanent injunction preventing further infringement, contributory infringement, and inducement of infringement until and unless Apple pays to Nokia such F/RAND compensation for past infringement, and irrevocably commits to payment of such compensation in the future.;
- (f) For actual F/RAND damages together with prejudgment interest;

(g) For an award of attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law;

(h) For all costs of suit; and

(i) For such other and further relief as the Court may deem just and proper.

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