EXHIBIT 31

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

APPLE INC., a California corporation, Plaintiff, vs. SAMSUNG ELECTRONICS CO., LTD., a Korean business entity, SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation, and SAMSUNG TELECOMMUNICATIONS AMERICA, LLC, a Delaware limited liability company, Defendants. SAMSUNG ELECTRONICS CO., LTD., a Korean business entity, SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation, and SAMSUNG TELECOMMUNICATIONS AMERICA, LLC, a Delaware limited liability company, Counterclaim-Plaintiffs, v. APPLE INC., a California corporation, Counterclaim-Defendant.	Civil Action No. 11-CV-01846-LHK

Expert Report of Michael Walker
Regarding Samsung's Standard-Setting Conduct

TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY OF REPORT

1. I have been retained as an expert in this case by Plaintiff, Counterclaim-Defendant Apple Inc. ("Apple"). I expect to testify at trial regarding the matters set forth in this report, if asked about them by the Court or the parties' attorneys.

2. I understand that the Defendants, Counterclaim-Plaintiffs in this proceeding, Samsung Electronics Co., Ltd.; Samsung Telecommunications America, Inc.; and Samsung Telecommunications America, LLC (collectively "Samsung"), have asserted U.S. Patent Nos. 7,386,001 ("the '001 patent"), 7,362,867 ("the '867 patent"), 7,050,410 ("the '410 patent"), 6,928,604 ("the '604 patent"), 7,675,941 ("the '941 patent"), 7,200,792 ("the '792 patent"), and 7,447,516 ("the '516 patent") (collectively, "the Asserted Patents") against Apple.

3. I further understand that Samsung has declared the Asserted Patents to the European Telecommunications Standard Institute ("ETSI") as essential to the Universal Mobile Telecommunications System ("UMTS") telecommunication standard developed by the Third Generation Partnership Project ("3GPP").

4. I have been asked for my expert opinion on two subjects. First, I have been asked what obligations ETSI and 3GPP impose on members with respect to intellectual property rights ("IPR"), including disclosure and licensing. Second, I have been asked whether Samsung fulfilled the obligations imposed on it by ETSI and 3GPP with respect to the Asserted Patents.

5. To summarize my conclusions, it is my opinion that ETSI and 3GPP require that members timely disclose potentially essential IPR before a standard is set, particularly where a member proposes for inclusion in a standard technology that it claims is covered by its IPR. Further, ETSI requires that members that have declared IPR to be potentially essential to a standard irrevocably commit to grant irrevocable licenses to such IPR on fair, reasonable and non-discriminatory ("FRAND") terms.

6. As to whether Samsung fulfilled the obligations imposed on it by ETSI and 3GPP with respect to the Asserted Patents, my opinion is that it did not because its employees proposed the adoption of Samsung technology at 3GPP but Samsung failed to disclose in a timely manner that Samsung had IPR purportedly covering that technology. Further, it is my opinion that Samsung has breached the irrevocable commitments it made to license its IPR on FRAND terms by seeking through this litigation to enjoin Apple from selling the Apple UMTS telecommunications products Samsung accuses of infringement.

II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

7. I received a B.Sc. in mathematics from Royal Holloway College, University of London in 1969 and a Ph.D. in mathematics from Royal Holloway and Westfield Colleges, University of London, in 1973. In addition, in 1981 I received a Dr. rer. nat. habil, a research degree needed to pursue a career as a professor in Germany, from the University of Tuebingen.

8. I have held various academic appointments over the course of my career, starting as a lecturer in mathematics at the University of Tuebingen from 1973 to 1983. Since 1996, I have been a professor at Royal Holloway College, holding the Vodafone Chair in Telecommunications, as a part-time professor, lecturing from time-to-time at the masters level on information security. I am currently the Head of School for Natural and Mathematical Sciences at King's College London. In addition, from 2004 until 2011, I was a visiting professor at the University of Surrey, where I taught at the masters level on mobile communications.

9. I have worked in the telecommunications industry for over twenty years and in June 2009, I was appointed an Officer to the Order of the British Empire (OBE) for my services to telecommunications. From 1983 until 1991, I was Head of the Mathematical Sciences Division at Racal Research Ltd., where my work involved all areas of Racal's business, including commercial telecommunications, security products, and military communications. In

1991, I transferred to the telecommunications division of the company, which subsequently became Vodafone UK Ltd. From 2001 through to my retirement, I was the Group Research and Development Director for the Vodafone Group of companies, in which capacity I was responsible for overseeing the Group's research activities; protecting Vodafone's worldwide intellectual property rights; and overseeing its participation in activities relating to technology standards, including at ETSI and 3GPP, a group comprised of standards associations from around the world, including ETSI.

10. I have been involved in ETSI essentially since its creation in 1988. For most of this time, I have held leadership positions within ETSI. From 1992 to 1997, I was Chairman of the ETSI TC Security group, a technical group responsible for the security features in ETSI standards. In addition, from 1996 through 2003, I served as Chairman of ETSI SMG10 and 3GPP SA3, the committees within ETSI and 3GPP responsible for GSM and 3G security.

11. In 2008, I was elected Chairman of the ETSI Board and held that position until December 2011, when my term expired. I continue to serve as a member of the ETSI Board. The ETSI Board is responsible for ensuring that ETSI has a sound strategy for fulfilling its mandate and is executing that strategy. As part of that responsibility, the Board oversees a subcommittee that is charged with ensuring that the ETSI Intellectual Property Rights ("IPR") Policy is maintained and followed.

12. In addition to my experience at ETSI, as part of my role at Vodafone I was responsible for overseeing our patent licensing program and participated in the negotiation of patent licenses covering IPR subject to FRAND commitments made to ETSI.

13. A copy of my curriculum vitae is attached as Exhibit 1.

III. MATERIALS REVIEWED

14. The materials I have reviewed in forming my opinions in this report are cited throughout the report and attached as Exhibit 2.

IV. ETSI AND 3GPP STANDARD SETTING BACKGROUND

A. ETSI and the ETSI IPR Policy

15. ETSI was founded in 1988 as an independent, not-for-profit organization headquartered in Sophia Antipolis in the south of France. The European Commission, European national posts, and European telecommunications ministries formed ETSI to create an organization for developing telecommunications standards for all of Europe. ETSI is officially recognized by the European Union as a European Standards Organization ("ESO"), one of the three European ESOs along with CEN and CENELEC. In 1989, responsibility for developing the Global System for Mobile Communications ("GSM") moved from the CEPT to ETSI. GSM is a second generation digital technology for mobile communications that is the most widely implemented telecommunications standard in the world.

16. ETSI presently has over 700 members representing more than 60 countries. ETSI members include telecommunication systems operators, like Vodafone, network equipment manufacturers, handset manufacturers, other companies with interests in developing products for telecommunications systems, and national administrations with responsibility for regulating telecommunications. ETSI depends on the technical expertise of its members' employees to develop solutions for technology standards that meet the needs of all its members. ETSI operates by consensus and strives to obtain full agreement on every aspect of the standards it develops.

17. From its inception, ETSI recognized the importance of IPR in its work. The ETSI Intellectual Property Rights Policy ("ETSI IPR Policy") is fundamental to ETSI's

standards development work.[1] The Policy aims to ensure that licenses for all technology essential to conforming to a standard are available to all parties wishing to implement the standard on FRAND terms. Every ETSI member is required to familiarize itself with the policy, and to conform with it. As discussed in more detail below, the ETSI IPR Policy aims to ensure that standard-setting participants know about the IPR that may read onto technologies under consideration for standardization, understand under what terms access to the IPR will be available to them, and on that basis decide on what technology solutions are best suited for realizing the various functions under consideration. The underlying philosophy of the policy is that participants should be able to develop or select the best technical solutions with the knowledge that punitive or discriminatory licensing terms will not come into play. Where a technology is not known to be available under fair, reasonable, and non-discriminatory terms, then the participants can either develop or choose an alternative technology, or where this is not possible, choose to avoid including in the standard functionality that would need it.

18. ETSI's IPR Policy is based on two key concepts: (1) timely disclosure of IPR; and (2) commitment to licensing on FRAND terms. As explained in more detail below, the Policy requires all members to declare any potentially essential IPR during standardization in a timely manner.[2] In addition, the Policy requires those declaring IPR as essential to indicate whether or not they will license the IPR on FRAND terms. Taken together, these requirements

[1] Over the years there have been revisions to the ETSI IPR Policy. The ETSI IPR Policy I reference in this declaration is the one adopted by the ETSI General Assembly on November 20, 1997, which remained unchanged until 2005. (ETSI IPR Policy, APLNDC-WH-A 0000012542-12547.) This Policy was the one in effect during the period relevant to Samsung's activities at ETSI relating to the patents it has asserted against Apple in these proceedings.

[2] The ETSI IPR Policy is intended to apply to members as well as their affiliates, i.e., subsidiaries or related entities, as reflected in its definition of "member" and "affiliate." (*See* ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clauses 15.1 and 15.9.)

give members the opportunity to select an alternative solution if ownership of IPR is uncertain, a particular technology is covered by IPR claims and any benefits of standardizing that technology compared to alternative solutions are not justified by costs associated with the IPR claims, or licensing terms are unacceptable.

B. 3GPP

19. 3GPP was created in 1998 to produce technical specifications and technical reports for a third generation ("3G") mobile system based on evolved GSM core networks. This 3G system is known in Europe as UMTS. ETSI was a founding member of 3GPP along with standards organizations from the United States, Japan, Korea, and China. Outside Europe, the 2G wireless systems varied by country, and even within a country, and were not universally interoperable. In particular, the US, Japan, and Europe operated systems conforming to incompatible standards. The founders of 3GPP recognized the desirability of a more universal system that would increase global interoperability. 3GPP is currently working on the development of the system known as Long Term Evolution ("LTE"), which is sometimes called a fourth generation ("4G") system, and maintains UMTS and GSM.

20. With the formation of 3GPP, ETSI's work on developing technical specifications for 3G standards moved to 3GPP so that members of other standards organizations could participate as well. ETSI members working to develop 3G and 4G technologies attended 3GPP meetings and, in many cases, took and continue to hold leadership roles in the working groups. Ultimately, ETSI formally adopts the technical specifications developed within 3GPP as European standards.

21. 3GPP did not adopt a unique IPR policy. Instead its founding members, including ETSI, recognized that the principles behind all of their IPR policies were quite similar. Thus, 3GPP required that members working on 3GPP projects follow the policies of their

respective organizations. As a result, ETSI members working on 3GPP projects are bound by the ETSI IPR policy. (*See* April 12, 1998 3GPP presentation, APLNDC-WH-A 0000012495-12541, at 46-47; Third Generation Partnership Project Agreement, December 4, 1998, APLNDC-WH-A 0000012489-12494, § 3.1.)

C. The Nature and Purpose of a FRAND Commitment

22. When a standard is promulgated, certain technology becomes "essential" to adopt in order to conform to the standard. The ETSI IPR Policy defines "essential" as follows:

> "ESSENTIAL" as applied to IPR means that it is not possible on technical (but not commercial) grounds, taking into account normal technical practice and the state of the art generally available at the time of standardization, to make, sell, lease, otherwise dispose of, repair, use or operate EQUIPMENT or METHODS which comply with a STANDARD without infringing that IPR. For the avoidance of doubt in exceptional cases where a STANDARD can only be implemented by technical solutions, all of which are infringements of IPRs, all such IPRs shall be considered ESSENTIAL.

(*See* ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clause 15.) The ETSI IPR Policy defines IPR to "mean any intellectual property right conferred by statute law including applications therefor[.]" (ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clause 15.)

23. If essential technology is protected by IPR, then in the absence of some constraint on the assertion of that IPR, the holder can exclude others from using the standard. Such exclusion is antithetical to ETSI's purpose, which is to ensure that its standards can be implemented and adopted as widely as possible. In order to prevent this form of "hold up," the ETSI IPR Policy asks members to irrevocably commit to license the technology on FRAND terms. Clause 6 of ETSI's IPR Policy governs the availability of licenses to essential IPR on FRAND terms. In relevant part, Clause 6.1 states:

> When an ESSENTIAL IPR relating to a particular STANDARD is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner to give within three months an 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:

> • MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee's own design for use in MANUFACTURE;
> • sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED;
> • repair, use, or operate EQUIPMENT; and
> • use METHODS.
>
> The above undertaking may be made subject to the condition that those who seek licenses agree to reciprocate.

(ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clause 6.1.)

24. The ETSI IPR Policy does not explicitly define what is fair, reasonable and non-discriminatory. However, examining the purpose behind the policy provides some insight.

25. If every patent holder with IPR included in a standard were free to charge the rate of its choosing, standardized technology could quickly become uneconomical as numerous IPR holders each demanded a large royalty to implement a standard—a practice called "royalty stacking." As an extreme example, if twenty organisations with IPR essential to a standard each charged 5% of the price of the product, the manufacturer would owe the entire product price in royalties. Thus, the "fair and reasonable" elements of the license commitment are designed to ensure that companies can pay all the necessary royalties and still profitably implement the standard.

26. Further, ETSI does not seek to favour one organisation over another, but rather wants as many companies to implement the relevant standards as are interested in doing so in order that the standard may gain widespread adoption. The "non-discriminatory" element is a critical part of the FRAND requirement designed to ensure equal access by all. This is particularly true given that many members of ETSI compete with other members of ETSI to sell products or services that conform to the standard. Without the non-discrimination element, companies could charge low fees to those that do not compete with them, while charging higher fees to competitors as a means of gaining a competitive advantage, or even as a way to exclude

them from the market. The non-discriminatory element of the ETSI IPR Policy is an important defense against essential IPR owners using their IPR to prevent market entry from competitors that have invested much more than they have in innovative design that appeals to consumers. This is particularly important where, as I shall discuss below, essential IPR may have derived its value not through unique innovation or invention, but simply because some technical solution had to be chosen, and the IPR in question pertained to the technical solution that was fortunate enough to have been chosen. The equality of access, as embodied in the non-discriminatory term, is in my opinion a major strength in the ETSI IPR Policy.

27. Incorporation of technology into a standard results in a trade-off for the owner of that IPR. Once standardized, demand for the owner's technology increases, resulting in a large number of potential licensees to pay royalties. In addition, it gives the IPR holder bargaining power with other IPR holders for cross-licenses to their essential IPR. In exchange, the IPR owner agrees to collect only a limited royalty, and to do so without discrimination, under its FRAND commitment. Without the restraints imposed by the FRAND commitment, a holder of essential IPR would be free to exploit the "hold-up" power, created by the fact that manufacturers must adopt its technology to derive royalties that are not reflective of the technology's intrinsic worth, but rather of the fact that it has been made more valuable by inclusion in the standard. In cases, for instance but not exclusively where it would have been possible to choose another solution, inclusion in the standard may account for all the value. This "hold-up" power is created by virtue of the fact that once a manufacturer, for instance, decides to build a product that implements a standard such as UMTS, it incurs significant costs in designing and producing UMTS-compliant products. Having incurred these costs and committed to the standard, it is locked in to the standard and cannot economically switch to another standard to avoid being "held up" for a non-FRAND royalty by a licensor. This is further compounded by

the fact that, in the world of telecommunications, particular standardized technologies are used throughout the world to the exclusion of other technologies. There are numerous reasons for this including the need for users to roam from one network to another, to manage interference between operations in the same geographic location, for operators and consumers to benefit from economy of scale, and in some cases because administrations have mandated use under a telecommunications license. The net effect is that manufacturers have no choice but to implement the standard, and the elements of the ETSI FRAND commitment are designed to make it possible for all to adopt the standard on a level playing field, and compete in the market based on commercial innovation and investment on top of it.

28. There has been widespread acknowledgment at ETSI, and within the industry generally, that cumulative royalties should be kept to an aggregate level that is reasonable and will not hinder competition or new entrants. Many have advocated a 5% aggregate royalty cap to cover all royalties for ETSI standards implemented in a handset, although a specific figure has to my knowledge never been agreed and adopted.

29. Any consideration of appropriate FRAND royalties must also take into account the base on which the royalty is applied. There have been significant changes in the types of standards-compliant devices that are available now as compared to when ETSI adopted FRAND as its licensing standard and when the idea of a 5% cumulative royalty cap was discussed. When ETSI adopted FRAND and for many years thereafter, cellular phones typically offered just voice and text functionality without the additional functionalities that are now commonplace in smartphones and tablets (and, indeed, many other cellular phones that would not be considered smartphones), such as an advanced operating system that allows users to use applications or the ability to store and play music files, as well as take and store photographs and video recordings.

30. Charging a royalty on the full price of a cellular phone with an appropriately low royalty was a reasonable solution when handsets included only voice and data capability because holders of patents declared essential to the UMTS standard would extract relatively minor royalties on innovations to which their technology did not contribute. And given the relative homogeneity of cellular phones at that time, a royalty on a base of the entire unit would result in comparatively little discrimination among handset suppliers. With the advent of smartphones and tablets that connect to a network using IPR in the standard, and also offer numerous other features that are not related to use of the standard, I am of the opinion that it is increasingly hard to justify using the full price of such a device as a base, and is no longer appropriate to consider doing so. Doing so would allow holders of essential IPR to effectively levy a tax on innovations that are unrelated to the value of their IPR, indeed unrelated to their IPR. Such licensing would be neither fair nor reasonable and, in fact, would undermine the purpose of standardization to serve as a platform for fostering innovation. Further, charging royalties on this basis would also violate the non-discriminatory requirement of FRAND, as it would impose additional costs on makers of devices simply because they have incorporated additional functionality into their devices, and thereby brought a product to market that is richer and more expensive because of features that are additional to those covered by the UMTS standard and the IP it is built upon.

31. In my opinion, based on the purpose of a FRAND rate to fairly compensate holders of essential IPR for their contributions to the standard, an appropriate royalty base must be circumscribed to account only for the IPR that is actually related to the standard.

V. DISCLOSURE OBLIGATIONS AT ETSI AND 3GPP

A. Purpose of Ensuring Timely Disclosure

32. Disclosure of specific IPR is important to the standardization process, because in many cases there are a variety of ways to accomplish the goal of defining how a particular

function should be realized. These ways may include competing proposals by members about how to specify a function or technology that is generally known in the industry. In choosing among competing proposals, participants at ETSI or 3GPP need full knowledge of IPR claims covering each of the alternative proposals. If some of these different proposals are encumbered by IPR, and others are not, that is a relevant consideration for participants to give as they decide between them, especially if there is no significant technical advantage in choosing one way in preference to another. In this case, if available, an unencumbered solution would likely prevail. In any case, whether the various alternative technologies are unencumbered by IPR, encumbered by IPR, or a mixture of the two, consideration would be given to the relevance of IPR and the way it would be made available. Thus, disclosure is important to permit participants to understand the consequences of selecting particular technologies and to allow them to avoid agreeing to the inclusion of technology that becomes economically impractical because of licensing demands. Even where IPR is subject to a FRAND commitment, it still imposes a cost for implementing the technology and that cost alone may outweigh the benefit of including the technology in the standard. Indeed, one alternative that is usually available during standardization is to forego including a proposed feature altogether if the only technology proposed to perform that feature is subject to IPR claims. The aim behind disclosure under FRAND is to make it possible for the engineers and other technical experts that participate in the technical bodies to concentrate on working to find the best technical solution to the challenge at hand, and this includes minimizing the complexity and cost of implementation, without having to worry about commercial issues such as the imposition of royalty charges. As stated earlier, timely disclosure sets the level playing field for consensus working.

33. ETSI recognized the need to balance efficient standards and IPR ownership. Clause 3.1 of the IPR Policy describes ETSI's policy objectives:

> STANDARDS shall be 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, that investment in the preparation, adoption and application of STANDARDS could be wasted as a result of an ESSENTIAL IPR for a STANDARD 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.

(*See* ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clause 3.1 (emphasis added).)

B. <u>ETSI and 3GPP Disclosure Requirements</u>

34. ETSI requires that all members use "reasonable endeavors" to declare in a timely manner any potentially essential IPR during standardization. In particular, it is required that members submitting technical proposals for inclusion in the standards must declare in a timely manner any IPR that might cover those proposals. Clause 4.1 of the IPR Policy reads:

> 4 Disclosure of IPRs
>
> 4.1 Each MEMBER shall use its reasonable endeavours to timely inform ETSI of ESSENTIAL IPRs it becomes aware of. In particular, a MEMBER submitting a technical proposal for a STANDARD shall, on a bona fide basis, draw the attention of ETSI to any of that MEMBER's IPR which might be ESSENTIAL if that proposal is adopted.

(*See* ETSI IPR Policy, APLNDC-WH-A 0000012542-12547, Clause 4.1.) To be timely, disclosure must occur as soon as reasonably possible, and, in all cases, before the standard is finalized.

35. This disclosure requirement recognizes that because even a FRAND rate is a cost, members should have the opportunity to consider other options not subject to IPR before finalising the standard. This is the essence of "timely"—it gives those participating and investing in the standards-making process the opportunity to reject a particular technology because of the emergence of what they see as unacceptable licensing conditions or because they determine that options that are not subject to IPR are preferable.

36. Because the ETSI disclosure policy requires parties making proposals for inclusion of technology in a standard to make disclosure of potentially essential IPR *before* a

standard is finalized, it effectively encourages over-declaration of IPR. That is, all IPR proposed for adoption into a standard should be accompanied by a declaration to ETSI that it will be made available on FRAND terms, but not all IPR proposed for adoption is actually adopted. Moreover, ETSI does not independently evaluate whether or not a technology is or is not essential, and takes no steps to remove declarations for IPR that is not actually essential to practicing the standard. Therefore, the fact that an IPR declaration has been made does not mean that the technology it covers is, in fact, essential. The process is designed to ensure the conditions are sufficient for a level playing field, but it makes no attempt to verify that they are all necessary. The ETSI disclosure policy is the bedrock of its standards making process. It removes the uncertainty that a participant in the process may lay claim to an IPR interest at a date after the standard has been finalized or even implemented and can no longer be changed. It is fundamental to consensus working. It was not imposed on the ETSI members, but devised by the members themselves, and membership entails abiding by it strictly and completely.

C. Call for IPR

37. The expectation that disclosure of IPR will be made in advance of determining a standard is underscored by the requirement at ETSI and 3GPP that meetings begin with a call for IPR. Both ETSI and 3GPP begin their meetings with the chairman reading, or otherwise drawing participants attention to, a "call for IPR," which reminds participants of their obligation to disclose any IPR that may be essential to proposals being considered and standards being developed.

38. ETSI published a Guide on IPR that explained the long-standing practice of starting meetings with a call for IPR. That Guide sets forth an explanation of the purpose of the call for IPR:

> Members participating in Technical Bodies should respond at the earliest possible time to the Call for IPRs performed by Technical Body Chairmen at the beginning of each meeting, based on the working knowledge of their participants.
>
> Furthermore, the call for IPRs acts as a reminder of the Member's obligations under the IPR Policy and is performed to foster the disclosure of Essential IPRs in a timely fashion.
>
> Members having IPR portfolios should improve their internal IPR co-ordination processes to ensure, as far as possible, that their participants in Technical Bodies are aware of any alleged-essential IPR the company may have (related to the on-going work on a particular ETSI Standard or Technical Specification), that they understand their obligations, and that they know how to discharge them.
>
> Members are encouraged to make general IPR undertakings/licensing declarations that they will make licenses available for all their IPRs under FRAND terms and conditions related to a specific standardization area and then, as soon as feasible, provide (or refine) detailed disclosures. This process reduces the risk of the standards making process being blocked due to IPR constraints.

(*See* ETSI Guide on Intellectual Property Rights, November 27, 2008, APLNDC-WH-A 0000012460-12477, § 2.1.1.)

39. 3GPP imposes a similar requirement:

> During each 3GPP meeting (TSG or WG) the Chairman of the group must make the following call for IPRs:
>
> "I draw your attention to your obligations under the 3GPP Partner Organizations' IPR policies. Every Individual Member organization is obliged to declare to the Partner Organization or Organizations of which it is a member any IPR owned by the Individual Member or any other organization which is or is likely to become essential to the work of 3GPP."
>
> This oral IPR call should be reflected as follows in the meeting report:
>
> The attention of the delegates to the meeting of this Technical Specification Group was drawn to the fact that 3GPP Individual Members have the obligation under the IPR Policies of their respective Organizational Partners to inform their respective Organizational Partners of Essential IPRs they become aware of.
>
> The delegates were asked to take note that they were thereby invited:
>
> - to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.
>
> - to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Information Statement and the Licensing declaration forms (http://www.etsi.org/WebSite/documen...)

(*See* 3GPP Call for IPR (Meetings), APL794-N0000006155-56, at 1.)

40. In my role as Chairman of committees within ETSI and 3GPP, I have given the call for IPR many times, or drawn attention to a written statement displayed on a screen in front of the meeting. Further, as an attendee at meetings over the years, I have heard others read the call for IPR. The call for IPR is usually listed on the agenda for the meeting and recorded in the minutes, which in my meetings were reviewed page by page and approved at the beginning of the next meeting. It is a simple reminder to participants that the ETSI IPR policy requires disclosure of IPR that may be essential and encourages participants to make that disclosure at the earliest possible time. The purpose of the call for IPR is not necessarily for people to respond at the meeting, but to underscore the expectation at 3GPP and ETSI that members will promptly and timely disclose all potentially essential IPR. I cannot recall a participant at a meeting having openly made a declaration about IPR in a submission, though participants regularly make such declarations promptly thereafter and certainly well before the standard is set. Nor am I aware of anyone failing to grant FRAND royalties to IPR pertaining to the work undertaken by the meetings I have chaired. One of the features of ETSI and 3GPP technical meetings is that technical submissions are often refined or significantly modified during the meetings before being incorporated into the definitive specification. This consensus building process tends in itself to diffuse IPR.

D. Purpose of FRAND Commitments Under the ETSI IPR Policy

41. As described above, the ETSI IPR Policy is designed to resolve the conflict between the use of widely available technology standards, and the right to benefit commercially from IPR developed as a result of investment, including exclusivity. When a standard mandates the use of a particular technology in a particular way, everyone who implements or deploys the

standard uses the technology.[3] If that technology is subject to IPR, everyone who uses the standard also needs a license. Allowing the IPR holder to deny licenses or to charge excessively high royalty rates would frustrate the goal of creating technically excellent, economically viable, and widely adopted standards. For that reason, the ETSI IPR Policy requires that holders of IPR claimed as essential to a standard commit to license those IPR on FRAND terms.

42. If a technology is not available on FRAND terms, under its policies ETSI has two alternatives: (1) adopt an alternative technology or (2) decline to include the proposed feature in the standard. Clause 8 of the ETSI IPR Policy addresses the situation in which FRAND licenses are not made available for essential IPR. The first option is to find a viable alternative not blocked by IPR. If such an alternative is not available, work on the standard ceases while ETSI seeks to persuade the IPR holder to license on FRAND terms. Clause 8 makes clear that ETSI sees commitments to FRAND licensing as a prerequisite to including any technology in a standard.

VI. OPINION ON SAMSUNG'S FAILURE TO TIMELY DISCLOSE THE PATENTS IT HAS ASSERTED AGAINST APPLE

A. Overview

43. Standard-setting organizations such as 3GPP and ETSI rely on member companies and their employees to determine the technical issues that require specification and to draft, submit and discuss technical proposals that describe the construction of telecommunications networks. Most of this work is done at the working group ("WG") level, although changes to a specification may be proposed at plenary sessions as well. During the

[3] There may be some exceptions in situations where (1) alternative methods of implementing the same functionality are standardized and a manufacturer can choose to employ one option or the other or (2) the standard imposes a requirement that it is possible to design around but still comply with the remainder of the standard.

relevant period for the patents that Samsung has asserted here—1999 through 2005—WGs met regularly to draft the numerous technical specifications that were ultimately included in UMTS. As noted above, these WG meetings began with the Chairman's reminder regarding IPR disclosure.

44. Samsung and its employees were, I understand, active participants in 3GPP and its WGs during the relevant time period from 1999 through 2005. Indeed, at the first 3GPP Technical Specification Groups (TSG) Meeting held in Sophia Antipolis, France, on December 7, 1998, I understand that Dr. Sang-Keun Park of Samsung was announced as one of four convenors. (*See* TSG Report #1 V1.0.0 (1999-03), APL794-N0000006197-6231, at p. 5.) I understand that during that time, inventors of the Samsung patents at issue and other Samsung personnel made technology proposals, led discussions at meetings, and participated in offline email discussions about the standards. In addition to their own ideas, Samsung employees will likely have read proposals and contributions from other members and listened to them being discussed at meetings. Despite having applied for patents on many similar technologies, I understand that Samsung made no specific IPR disclosures to ETSI regarding the IPR that Samsung has now asserted against Apple until 2003, long after the specifications were completed, the relevant WG meetings were over, and the standards had been set.

45. 3GPP is divided into four separate plenaries each focusing on a different aspect of the telecommunications network—Core Network and Terminal Plenary; GSM/EDGE Radio Access Network Plenary; Radio Access Network Plenary; and Service and System Aspects Plenary. In this case, the relevant plenary was the Radio Access Network ("RAN") Plenary. Within RAN, there are six different WGs that each addresses a specific portion of the radio access network. In this case WG1 and WG2 were the most relevant. It is at the working group level that specific proposals are made, discussed, and often significantly revised by the working

group participants before a final text is agreed and accepted for inclusion in the draft specification. Because there are often many different ways of solving a problem, several different participants often make proposals or suggest changes on the same general technology. Sometimes the WG selects a single proposal. In other situations, the participants merge their proposals generating a new joint proposal for consideration. For some technologies, discussion and debates continue over many months as members seek to gain consensus on the right technical solution. This process is played out under the understanding and trust that IPR will be managed under FRAND, and that the goal is to develop the best technical solution. Once the working group has reached agreement on a draft specification, it is presented by the chairman of the group to the plenary session for approval. Even at the plenary, technical changes may be proposed by members, but that is rather unusual. Instead the plenary either accepts the draft, or decides that an important aspect has not been considered or resolved properly, and sends it back to the working group. If the draft is accepted, then it is subject to "change request" (CR) procedure, which means that any further changes to the text must be formally proposed to a plenary through the working group chairman and agreed by the plenary. At all stages of this process IPR interests may be declared, so members have ample opportunity to come forward and thereby comply with the IPR policy. Technical specifications need to "be frozen" at some point so that manufacturers can begin to design equipment. After the date of the "freeze meeting," the technical specification is set and will remain unchanged so that it can be formally transcribed to a standard unless later removed for some reason.

46. At times, the WGs form Ad Hoc groups to address specific issues. The Ad Hoc groups report to the WG. Proposals and change requests that have been approved by a WG are brought to the full Plenary for final approval.

47. In order to share information across the 3GPP WGs and a broader audience, minutes are taken at the WG and Plenary meetings by a member of the ETSI Secretariat. ETSI provides all secretariat support for 3GPP. Each WG and each plenary is assigned a meeting secretary, and where possible the same individual remains with the working group or plenary throughout, other than in exceptional circumstances. The secretary is responsible for creating all minutes, and along with the chair seeing that they are approved. Those minutes include information regarding proposals that were adopted, proposals that were discussed, and the nature of the discussion. If particular proposals were prepared for a meeting but were not addressed, that is often noted as well. Drafts of the minutes are circulated by the secretary to all attendees after the meeting providing an opportunity for comment and correction. In my experience, it is not uncommon for draft minutes to be revised to reflect comments and changes from participants. The minutes of one meeting (WG, plenary, ETSI Board, etc.) are formally approved at the start of the next, and even at that stage it is not uncommon for changes to the draft to be requested and made prior to a final version being approved. The goal of the minutes is to record as accurately as possible the individual WG and Plenary meetings.

48. As part of its open process, 3GPP posts its policies, meeting information, proposals, CRs, specifications, meeting minutes, participants lists, and even certain emails, on its website—www.3gpp.org. Although the system has changed slightly over time, each discussion, proposal, CR, and draft specification are assigned a unique document identification number by the meeting secretary, a member of the ETSI staff. In addition, most of the discussion papers identify the meeting at which they were proposed (in the upper left-hand corner of the first page of the document) and the document number (in the upper right-hand corner). Using this information, as well as the minutes, one can determine which papers were presented at which meetings.

49. Although not perfect (there are a small number of documents that can be difficult or impossible to locate), the 3GPP website allows a review of the manner in which certain technologies came to be introduced to the WGs and ultimately included or excluded from the standard in question. In addition, some of the WGs publish the email exchanges circulated among WG members on what is known as the "reflector." The "reflector" is essentially an email distribution list that includes the regular attendees at a particular WG meeting. Both WG1 and WG2 post these email discussions dating back to December 1998 and continue through last week. Reviewing the email can provide insight into which employees of which companies were most active in working on particular proposals or technologies. There is an underlying philosophy within 3GPP that the way it works and the results of its work should be as open as possible, so that its members can be confident that the work is being undertaken in their best interests, and will result in specifications for standards that they will be able to adopt without hindrance or discrimination. This is particularly important for small members, regulatory administrations, members who are new to the field, and others that cannot contribute to the working groups because of lack of resources or expertise.

50. Because the 3GPP IPR policy requires its participants to follow the IPR policy of the standard-setting organization in which they are members, Samsung's IPR disclosures will have been expected to have been made to ETSI. In order to enable firms to learn who owns essential patents, the ETSI database—www.etsi.org—contains scanned copies of the IPR declarations its members filed. One can search using a number of criteria, including the name of the company making the declaration. Using the ETSI database one can locate the disclosures Samsung made over the years. I understand that according to the ETSI database, the first

Samsung IPR disclosure that referenced specific patents and applications was made in September, 2003.[4]

51. Apple's counsel has provided me with an overview of the facts as they occurred for each of the Asserted Patents that is set forth below. I am not offering an opinion as to whether any Samsung patent actually covers any particular proposal, any standard or any specification of any standard. I have read this overview carefully, along with consulting the documents cited, and I believe Samsung breached the ETSI IPR Policy by making untimely declarations of its IPR for each of the patents at issue in these proceedings. Below I set forth a summary of the facts as I understand them, followed by my conclusion.

1. Failure To Timely Disclose the '001 Patent

52. I understand that on June 25, 1999, Samsung filed a Korean patent application KR 1999-26221 (U.S. Patent No. 7,386,001, APLNDC-WH-A 0000013077–13905). I understand on July 7, 1999, Samsung filed a Korean patent application KR 1999-27163. (*Id.*) The asserted '001 Patent claims priority to both of those applications and lists Beongjo Kim, Se-Hyoung Kim, Min Goo Kim, Soon-Jae Choi and Young-Hwan Lee as the inventors. (*Id.*) Samsung has alleged that the '001 patent is essential to practicing Specification 25.212 of UMTS, which was created by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, dated September 19, 2003, APLNDC-WH-A 0000009375-9396.)

53. I am informed that in the summer of 1999 Samsung worked to develop multiplexing rules for TS 25.212. Prior to making any presentations at a Working Group 1 meeting regarding these multiplexing rules, Samsung filed the two patent applications listed

[4] On December 14, 1998, Samsung submitted a general declaration to ETSI indicating a willingness to grant licenses in accordance with Clause 6.1 of the ETSI IPR Policy. As a general declaration, though, it failed to comply with the letter or purpose of Clause 6.1 of requiring disclosure of particular IPR that are under consideration for standardization.

above. On June 29, 1999, four days after Samsung filed its first patent application, inventor Beongjo Kim began emailing the reflector and proposing ideas for addressing the missing multiplexing rules that I understand is related to the same general subject matter as Samsung's pending patent application. (Email from Beongjo Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated June 29, 1999, APLNDC-WH-A 0000009991 – 9992.)

54. On July 9, 1999, Mr. Kim emailed TSGR1#6(99)892, a formal Samsung proposal related to the same general subject matter as the pending patent application, to the reflector for consideration in advance of the next Working Group 1 meeting. (Email from Beongjo Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated July 9, 1999, APLNDC-WH-A 0000009980.)

55. According to the meeting minutes of WG1 Meeting #6, Working Group 1 approved Samsung's proposal for inclusion in TS 25.212 at its meeting in Espoo, Finland from July 13 to 16, 2009. (Draft Minutes for 3GPP RAN-TSG 6th WG1 Meeting, TSGR1-A58/99, APLNDC-WH-A 0000010006 - 0028, at APLNDC-WH-A 0000010016.) Inventors Beongjo Kim and Min Goo Kim attended the meeting on behalf of Samsung. (*Id.* at APLNDC-WH-A 0000010019 - 10020.)

56. In October 1999, 3GPP approved the next version of Specification 25.212. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.212, APLNDC-WH-A0000022854; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A 0000022943.)

57. None of the documents or e-mails that Samsung provided to Working Group 1 contained any mention of Samsung's pending patent applications. Samsung does not appear to have disclosed its IPR to ETSI until nearly four years later in a declaration dated September 19,

2003. (IPR Information Statement and Licensing Declaration Forms, dated September 19, 2003, APLNDC-WH-A 0000009375-9396.)

2. Failure To Timely Disclose The '867 Patent

58. I understand that, on July 7, 1999, Samsung filed a Korean patent application No. KR 1999-27279. (U.S. Patent No. 7,362,867, APLNDC-WH-A 0000018113-18133.) The asserted '867 Patent claims priority to that application and lists Heewon Kang and Jaeyoel Kim as inventors. (*Id*.) Samsung has alleged that the '867 patent is essential to Specification 25.213 of UMTS, created by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, dated September 19, 2003, APLNDC-WH-A 0000009375-9396.)

59. The day after Samsung filed its patent application, on July 8, 1999, inventor Jaeyoel Kim emailed the WG1 reflector attaching a draft proposal regarding a "new assignment method for multiple scrambling code" which addressed what I understand is the same general subject matter as his pending patent application. (Email from Jaeyoel Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated July 8, 1999, APLNDC-WH-A 0000012263.)

60. Working Group 1 considered Samsung's final proposals—TSGR1#6(99)915 and TSGR1#6(99)916—at its 6th meeting in Espoo, Finland from July 13 to 16, 1999. (Draft Minutes for 3GPP RAN-TSG 6th WG1 Meeting, TSGR1-A58/99, APLNDC-WH-A 0000010006-0028, at APLNDC-WH-A 0000010015.) Both named inventors—Mr. Kim and Mr. Kang—attended that meeting. (*Id*. at APLNDC-WH-A 0000010019-20.)

61. Samsung's proposals were not adopted at that time, but according to the meeting minutes, Working Group 1 encouraged Samsung to seek support for its proposals before the next meeting. (Draft Minutes for 3GPP RAN-TSG 6th WG1 Meeting, TSGR1-A58/99, APLNDC-WH-A 0000010006-0028, at APLNDC-WH-A 0000010015.)

62. Inventor Jaeyoel Kim sent emails to the reflector in late July and early August, soliciting support for a modified Samsung proposal. (Emails from Jaeyoel Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated August 11, 1999, APLNDC-WH-A 0000012243-12245, dated July 22, 1999, APLNDC-WH-A 0000012255-12257 and dated August 12, 1999, APLNDC-WH-A 0000012246-12247.) By August 26, 1999, Jaeyoel Kim circulated a modified proposal to the reflector. (Email from Jaeyoel Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated August 26, 1999, APLNDC-WH-A 0000012262; APLNDC-WH-A 0000012258-12261.)

63. According to the meeting minutes, Working Group 1 adopted Samsung's proposal, with some modifications, for inclusion in TS 25.213 at the next working group meeting held in Hannover, Germany from August 30 to September 3, 1999. (Samsung Proposal "Text Proposal regarding Multiple Scrambling Codes (rev. of R1-99d51) – TSGR1#7(dd)D83, APLNDC-WH-A 0000012351; Revised Minutes for 3GPP RAN-TSG 7th WG1 Meeting, TSGR1#8(99)g43, APLNDC-WH-A 0000010064 – 0085 at WH-A 0000010074.) Inventors Heewon Kang and Jaeyoel Kim both attended that meeting on behalf of Samsung. (*Id.* at APLNDC-WH-A 0000010083.)

64. 3GPP approved the next released version of Specification 25.213 at a meeting in October 1999. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.213, APLNDC-WH-A 0000022857; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

65. None of the documents or e-mail Samsung provided to Working Group 1 contained any mention of Samsung's pending patent application. Samsung does not appear to have disclosed its IPR to ETSI until nearly four years later, on September 19, 2003. (IPR Information Statement and Licensing Declaration Forms, September 19, 1999, APLNDC-WH-A 0000009375-9396.)

3. Failure To Timely Disclose The '410 Patent

66. I understand that, on July 8, 1999, Samsung filed a Korean patent application No. KR 1999-27407. (U.S. Patent No. 7,050,410, APLNDC-WH-A 0000014034-14071.) I understand that, on July 23, 1999, Samsung filed a Korean patent application No. KR 1999-30095. (*Id.*) I understand that, on August 30, 1999, Samsung filed a Korean patent application No. KR 1999-37496. (*Id.*) The asserted '410 Patent claims priority to those applications and lists Min Goo Kim, Se-Hyoung Kim, Beongjo Kim and Soon-Jae Choi as inventors. (*Id.*) Samsung alleges the '410 Patent is essential to practicing Specification 25.212 of UMTS developed by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, September 19, 2003, APLNDC-WH-A 0000009375-9396.)

67. The same day Samsung filed the first patent application noted above, (i.e., July 8, 1999), named inventor Min Goo Kim emailed Working Group 1's reflector email list, indicating that Samsung intended to propose a "unified rate matching scheme" at the next meeting and attaching a draft proposal that I understand was related to the same general subject matter and the pending patent application. (Email from Min Goo Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, dated July 8, 1999, APLNDC-WH-A 0000010281) Two days later, Mr. Kim sent a final version of the proposal—TSGR1#6(99)919. (Email and attachment from Min Goo Kim to 3GPP_TSG_RAN_WG1@list.etsi.org, July 10, 1999, APLNDC-WH-A 0000010279; APLNDC-WH-A 0000010708.)

68. Min Goo Kim attended the Sixth Meeting of Working Group 1 in Espoo, Finland from July 13-16, 1999 during which Working Group 1 considered Samsung's TSGR1#6(99)919 Proposal. (Draft Minutes for 3GPP RAN-TSG 6th WG1 Meeting, TSGR1-A58/99, APLNDC-WH-A 0000010006-0028, at APLNDC-WH-A 0000010020; APLNDC-WH-A 0000010025.) The meeting minutes do not reflect any discussion of Samsung's proposal. (*Id.*)

69. The Seventh Meeting of Working Group 1, in Hannover, Germany, began August 30, 1999; Min Goo Kim again attended on behalf of Samsung. (Revised Minutes for 3GPP RAN-TSG 7th WG1 Meeting, TSGR1#8(99)g43, APLNDC-WH-A 0000010064 – 0085 at APLNDC-WH-A 0000010083.) At that meeting, Samsung and LGIC made a joint proposal that I understand related to the same general subject matter as the pending Samsung patent application. (Samsung and LGIC Proposal, "Text proposal for Turbo codes and rate matching in TS25.212, TS 25.222 -- TSGR1#7(99)d84, APLNDC-WH-A 0000010518.) According to the meeting minutes, Working Group 1 approved the joint proposal for inclusion in TS 25.212 at the meeting. (Revised Minutes for 3GPP RAN-TSG 7th WG1 Meeting, TSGR1#8(99)g43, APLNDC-WH-A 0000010064 – 0085 at APLNDC-WH-A 0000010073.)

70. 3GPP approved the next version of Specification 25.212 in October 1999. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.212, APLNDC-WH-A0000022854; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

71. None of the documents or e-mail Samsung provided to Working Group 1 contained any mention of Samsung's pending patent application. Samsung does not appear to have disclosed its IPR to ETSI until nearly four years later, on September 19, 2003. (IPR Information Statement and Licensing Declaration Forms, September 19, 2003, APLNDC-WH-A 0000009375-9396.)

4. Failure To Timely Disclose The '604 Patent

72. I understand that on March 31, 1998, Samsung filed a Korean patent application No. KR 1998-11380. (U.S. Patent No. 6,928,604, APLNDC-WH-A 0000016618-16630.) The asserted '604 Patent claims priority to that application and lists Chang-Soo Park, Joong-Ho Jeong and Hyeon-Woo Lee as inventors. (*Id.*) Samsung has alleged that the '604 Patent is

essential to practicing Specification 25.212 of UMTS developed by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, September 19, 2003APLNDC-WH-A 0000009375-9396.)

73. From August 30 to September 3, 1999, inventors Hyeon-Woo Lee and Chang-soo Park attended a Working Group 1 meeting in Hanover, Germany. (Revised Minutes for 3GPP RAN-TSG 7th WG1 Meeting -- TSGR1#8(99)g43, APLNDC-WH-A 0000010064-0085 at APLNDC-WH-A 0000010083-0084.) At that meeting, Ericsson made two proposals. (Ericsson proposals, "Text Proposal for 25.212 – TSGR1#7(99)d76, APLNDC-WH-A 0000011302-011307; "Transport Block Concatenation and Code Block Segmentation" – TSGR1#7(99)b32, APLNDC-WH-A 0000010046-0063.) [redacted] Working Group 1 adopted those proposals at the same meeting for inclusion in TS 25.212. (Revised Minutes for 3GPP RAN-TSG 7th WG1 Meeting, TSGR1#8(99)g43, APLNDC-WH-A 0000010064-0085 at APLNDC-WH-A 0000010075; APLNDC-WH-A 0000010073.)

74. 3GPP approved the next version of Specification 25.212 in October 1999. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.212, APLNDC-WH-A0000022854; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

75. Despite the presence of two inventors at the relevant meeting, Samsung did not mention to Working Group 1 that it had a patent related to the Ericsson proposals, which, if Samsung did know it had such a patent, I regard as totally alien to the spirit of openness and cooperation that is in my experience the norm in ETSI or 3GPP meetings. Samsung does not appear to have disclosed its IPR to ETSI until nearly four years later, on September 19, 2003.

(IPR Information Statement and Licensing Declaration Forms, September 19, 2003, APLNDC-WH-A 0000009375-9396.)

5. Failure To Timely Disclose The '941 Patent

76. I understand that, on May 4, 2005, Samsung filed a Korean patent application No. KR 10-2005-0037774. (U. S. Patent No. 7,675,941, APLNDC-WH-A 0000018762-18778.) The asserted '941 Patent claims priority to that application and lists Gert-Jan van Lieshout, Soenghun Kim, and Himke van der Velde as inventors. (*Id.*) Samsung has alleged that the '941 Patent is essential to practicing Specification 25.322 of UMTS, which was developed by 3GPP RAN WG2. (IPR Information Statement and Licensing Declaration Forms, dated August 7, 2007, APLNDC-WH-A 0000009442.)

77. Working Group 2 began work on the subject of efficient transmission of voice over internet protocol ("VoIP") as early as their 43rd Meeting held August 15-20, 2004. At that meeting, Qualcomm submitted a proposal (R2-021645) titled "L2 considerations for VoIP Support." (Qualcomm proposal, "L2 considerations for VoIP Support" -- R2-021645, APLNDC-WH-A0000009166-9169.) Thus technical proposals were already on the table at that meeting. According to the meeting minutes, all three inventors of the '941 patent attended that meeting, so were aware of the proposals that had been made. (Approved Minutes (draft 4) of the 43rd TSG-RAN WG2 meeting (Prague, Czech Republic, 16-20 August 2004) – R2-042190, APLNDC-WH-A 0000008989-9056 at APLNDC-WH-A 0000009042; APLNDC-WH-A 0000009045.)

78. Only five days after Samsung filed its patent application, on May 9, 2005, Samsung presented two related proposals at a Working Group 2 meeting; these proposals included the use of a "pre-defined length indicator" which I understand is the same general subject matter as claimed by the pending patent application. (Samsung proposals "Segmentation

and Concatenation for VoIMS" – R2-051311, APLNDC-WH-A 0000009186-9190; "RLC LI Optimization for VoIP – 25.322 CR 0280" – R2-051680, APLNDC-WH-A 0000009301-9309.) According to the meeting minutes, Working Group 2 discussed and agreed to the Samsung proposal, subject to confirmation via email after the meeting. (Approved Minutes of the 47 TSG-RAN WG2 Meeting -- R2-052063, APLNDC-WH-A 0000008857-8935 at APLNDC-WH-A 0000008895.) Inventors Gert-Jan van Lieshout and Himke van der Velde attended that meeting. (Participants list from the 47 TSG-RAN WG2 Meeting, APLNDC-WH-A 0000009356-9361 at APLNDC-WH-A 0000009358.) Following that meeting, Samsung circulated the proposal for email agreement, and Samsung's proposal was approved for inclusion in TS 25.322. (Approved Minutes of the 47 TSG-RAN WG2 Meeting, R2-052063, APLNDC-WH-A 0000008857-8935 at APLNDC-WH-A 0000008895.)

79. 3GPP approved the next version of the Specification 25.322 at a meeting held in June 2005. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.322, APLNDC-WH-A 0000022862; screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

80. None of the documents or e-mail Samsung provided to Working Group 2 contained any mention of Samsung's pending patent application. Samsung does not appear to have disclosed its IPR to ETSI until over two years later, in August, 2007. (IPR Information Statement and Licensing Declaration Forms, August 7, 2007, APLNDC-WH-A 0000009442-9446.)

6. Failure To Timely Disclose The '792 Patent

81. I understand that on December 21, 2001, Samsung filed a Korean patent application No. KR 10-2001-0083064. (U.S. Patent No. 7,200,792m APLNDC-WH-A 0000017615 - 17656.) The asserted '792 Patent claims priority to that application and lists

Hunkee Kim, Jaeseung Yoon, Yong Suk Moon, Jun Sung Lee, Nohsun Kim, and Ginkyu Choi as inventors. (*Id.*) Samsung alleges that the '792 Patent is essential to practicing Specification 25.212 of UMTS developed by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, dated July 24, 2008, APLNDC-WH-A 0000009482-9486.)

82. In April 2001, Samsung made a proposal to 3GPP related to "symbol mapping" that I understand related to the same general subject matter as the Samsung patent application filed later that year. (Samsung proposal "Enhanced Symbol Mapping Method for the modulation of Turbo-coded bits based on bit priority" – 12A010044, APLNDC-WH-A 0000011411-11416.) Named inventor Hunkee Kim presented and advocated for that proposal at a working group meeting, which was also attended by two other Samsung named inventors (Mr. Choi and Mr. Moon). (Approved report of the joint TSG-RAN WG1/WG2 meeting on HSDPA – 12A010045, APLNDC-WH-A 0000011441-11469 at APLNDC-WH-A 0000011451; APLNDC-WH-A 0000011455; APLNDC-WH-A 0000011462.)

83. Over the course of the next several meetings of Working Group 1, additional proposals designed to address the same issues were introduced by Samsung and other firms including Nokia, Siemens, Motorola and Panasonic. (Draft minutes of WG1 #21 meeting – TSGR1-01-0990, APLNDC-WH-A 0000011547-11590 at APLNDC-WH-A 0000011568; Draft minutes of WG1 #22 meeting – TSGR1-01-1354, APLNDC-WH-A 0000011591-11637 at APLNDC-WH-A 0000011617; Revised minutes of TSG RAN WG1 #23 meeting – TSGR1-02-0356, APLNDC-WH-A 0000011988-12017 at APLNDC-WH-A 0000012001.)

84. In advance of the Twenty-Fourth Meeting of Working Group 1 held in Orlando, Florida on February 18-22, 2002, inventor Hunkee Kim contributed to a reflector email chain regarding a Nokia proposal. (Email from Hunkee Kim to 3GPP_TSG_RAN_WG1@list.etsi.org,

dated February 16, 2002, APLNDC-WH-A 000011476.) In that email, Kim advocated for the Samsung solution that I understand Samsung now alleges is covered by the '792 Patent. (*Id*.)

85. During the Twenty-Fourth Meeting of Working Group 1, several proposals were consolidated into a final joint proposal by Samsung, Siemens, and Motorola. (Revised minutes of TSG RAN WG1 #24 Meeting – TSGR1-02-0628, APLNDC-WH-A 0000011943–11987 at APLNDC-WH-A 0000011963; APLNDC-WH-A 0000011966-67; Siemens, Motorola and Samsung joint proposal, "Text Proposal for Bit Distribution unit for HS-DSCH" – R1-02-0444, APLNDC-WH-A 0000011834–1838.) According to the meeting minutes, Working Group 1 approved that proposal for inclusion in TS 25.212. (Revised minutes of TSG RAN WG1 #24 Meeting – TSGR1-02-0628, APLNDC-WH-A 0000011943–11987 at APLNDC-WH-A 0000011963; APLNDC-WH-A 0000011966-67.) Inventors Ginkyu Choi and Hunkee Kim attended on behalf of Samsung. (*Id.* at APLNDC-WH-A 0000011985.)

86. 3GPP approved the next version of Specification 25.212 at a meeting held in June 2002. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.212, APLNDC-WH-A0000022854; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

87. None of the documents or e-mail Samsung provided to Working Group 1 contained any mention of Samsung's pending patent application. Samsung does not appear to have disclosed its IPR to ETSI until over six years later, on July 24, 2008. (IPR Information Statement and Licensing Declaration Forms, dated July 24, 2008, APLNDC-WH-A 0000009482 -9486.)

7. Failure To Timely Disclose The '516 Patent

88. I understand that, on June 9, 2004 Samsung filed a Korean patent application No. KR 10-2004-0042300. (U. S. Patent No. 7,447,516, APLNDC-WH-A 0000015619-15645.)

I understand that, on August 6, 2004 Samsung filed a Korean application No. KR 10-2004-0062190. (*Id.*) The asserted '516 Patent claims priority to those applications (among others) and lists Youn-Hyoung Heo, Juho Lee, Joon-Young Cho, Youngbum Kim, and Yong-Jun Kwak as inventors. (*Id.*) Samsung contends that the '516 Patent is essential to practice Specification 25.214 of UMTS developed by 3GPP RAN WG1. (IPR Information Statement and Licensing Declaration Forms, dated May 16, 2006, APLNDC-WH-A 0000009415–9431.)

89. Within a few days after the last application referenced above, named inventor Juho Lee circulated Samsung proposals via the email reflector that I understand included the same general technology described in the pending patent application. (Email and attachment from Juho Lee to 3GPP_TSG_RAN_WG1@list.etsi.org, dated August 12, 2004; APLNDC-WH-A 0000010791 – 10793; APLNDC-WH-A 0000010862 – 10863; email and attachment from Juho Lee to 3GPP_TSG_RAN_WG1@list.etsi.org, dated August 12, 2004, APLNDC-WH-A 0000010793; APLNDC-WH-A 0000010864-10866.) At the Working Group 1 meeting, Juho Lee presented, and advocated for Samsung proposals. (Approved Report of 3GPP TSG RAN WG1 #38 – R1-041469, APLNDC-WH-A 0000010870–10932 at APLNDC-WH-A 0000010895.) According to the meeting minutes, named inventors Youn Hyoung Heo and Yongjun Kwak also attended the meeting. (Approved Report of 3GPP TSG RAN WG1 #38 – R1-041469, APLNDC-WAH-A 0000010870-10932, at APLNDC-WH-A 0000010910; APLNDC-WAH-A 0000010913.)

90. Over the course of the next three working group meetings, Samsung submitted additional proposals that Mr. Lee and Ms. Heo presented. (Approved report of 3GPP TAG RAN WG1 #40 in Scottsdale – R1-050369, APLNDC-WH-A 0000011016-11071, at APLNDC-WH-A 0000011046; Approved Report of 3GPP TSG RAN WG1 #40bis in Beijing – R1-050574, APLNDC-WH-A 0000011085 – 11138 at APLNDC-WH-A 0000011099; Approved Report of

3GPP TSG RAN WG1 #41 in Athens – R1-050995, APLNDC-WH-A 0000011139 – 11202 at APLNDC-WH-A 0000011159-60.) Three other named inventors (Youngbum Kim, Yongjun Kwak and Joonyoung Cho) also attended some of those meetings. (Approved report of 3GPP TAG RAN WG1 #40 in Scottsdale – R1-050369, APLNDC-WH-A 0000011016-11071, at APLNDC-WH-A 0000011054-55; Approved Report of 3GPP TSG RAN WG1 #40bis in Beijing – R1-050574, APLNDC-WH-A 0000011085-11138 at APLNDC-WH-A 0000011121; APLNDC-WH-A 0000011124; Approved Report of 3GPP TSG RAN WG1 #41 in Athens – R1-050995, APLNDC-WH-A 0000011139 – 11202 at APLNDC-WH-A 0000011178; APLNDC-WH-A 0000011180.)

91. In advance of Working Group 1 Meeting #41, on May 2, 2005, Inventor Juho Lee sent a draft proposal to the reflector. (Email from Juho Lee to 3GPP_TSG_RAN_WG1@list.etsi.org, May 2, 2005, APLNDC-WH-A 0000010855-10856.) At that meeting, held in Athens, Greece between May 9-13, 2005, the meeting minutes reflect that inventor Juho Lee presented the proposal on behalf of the group of proponents, Samsung, NEC, Nokia, Panasonic, Philips and Qualcomm. (Approved Report of 3GPP TSG RAN WG1 #41 in Athens – R1-050995, APLNDC-WH-A 0000011139-11202 at APLNDC-WH-A 0000011160.) In addition, inventors Youngbum Kim, Yongjun Kwak, Joonyoung Cho and Youngyoung Heo attended the meeting on behalf of Samsung. (*Id.* at APLNDC-WH-A 0000011178; 0000011180; 0000011181.)

92. According to the meeting minutes, Working Group 1 adopted the proposal jointly offered by Samsung, NEC, Nokia, Panasonic, Philips and Qualcomm for inclusion in 25.214, via email after the meeting, on May 20, 2005. (*Id.*; Email from Dirk Gertstenberger to 3GPP_TSG_RAN_WG1@list.etsi.org, dated May 20, 2005, APLNDC-WH-A 0000010854.)

93. 3GPP adopted the next version of Specification 25.214 at a 3GPP meeting held in June 2005. (Screenshot of the 3GPP website showing RP meeting numbers associated with each version of TS 25.214, APLNDC-WH-A 0000022859; Screenshot of the 3GPP website showing the dates on which particular RP meetings were held, APLNDC-WH-A0000022943.)

94. None of the documents or e-mail Samsung provided to Working Group 1 contained any mention of Samsung's pending patent application. Samsung does not appear to have disclosed its IPR to ETSI until nearly a year later, on May 16, 2006. (IPR Information Statement and Licensing Declaration Forms, dated May 16, 2006, APLNDC-WH-A 0000009415 –9431.)

8. Summary of Late Disclosure

95. The chart below shows how Samsung failed to meet its disclosure obligations. For each patent it shows: (1) the relevant priority date of the earliest related application, (2) the date Samsung (or another company) submitted a proposal related to technology that Samsung now claims its patents cover, (3) the date that proposal (in some cases, as modified) was frozen into the standard, and (4) the date on which Samsung first disclosed its IPR:

Patent	Priority Date	First Samsung Proposal	Freeze Date	Disclosure Date
'001	6/25/1999	7/9/1999	10/1999	**9/19/2003**
'867	7/7/1999	7/8/1999	10/1999	**9/19/2003**
'410	7/8/1999	7/10/1999	10/1999	**9/19/2003**
'604	3/31/1998	8/30/1999 (Ericsson)	10/1999	**9/19/2003**
'941	5/4/2005	5/9/2005	6/2005	**8/7/2007**
'792	12/21/2001	4/2001	6/2002	**7/24/2008**
'516	6/9/2004	8/12/2004	6/2005	**5/16/2006**

B. Conclusion on Samsung's Failure To Timely Disclose

96. In conclusion, and based on the above, it is my opinion that Samsung failed to timely disclose to ETSI the patent applications to which the asserted patents claim priority. Based on the facts as set forth above, in my opinion Samsung should have disclosed these patent applications at or immediately after submission of its proposals, and there is no apparent reason why it could not have been done. In these circumstances, by failing timely to disclose the patents promptly—and not until well after the standard was set—Samsung breached Clause 4.1 of the ETSI IPR Policy.

97. In fact, it appears that Samsung has established its disclosure practices to make systematically untimely declarations to ETSI in breach of Clause 4.1. [redacted]

[redacted]

98. [redacted] This conduct, particularly when combined with Samsung's failure to disclose before the UMTS standard was set that (i) it held IPR that it now contends covers technologies that have been standardized and (ii) did not have a policy in place intended to ensure it abided by its FRAND commitments, is the quintessential type of abusive standard-setting conduct that the ETSI IPR Policy was designed to prohibit. Technical Body meetings are intended for technical people to progress standards to the best of their ability, and not as fora for planning company patent submissions.

99. ETSI does not have a binding dispute resolution mechanism for disputes relating to IPR. Rather, ETSI members have to address national courts in order to resolve disputes that relate to untimely disclosure of IPRs in the context of standard setting.

100. In my view, failing to timely disclose IPR to ETSI undermines the effectiveness and proper functioning of the standard-setting process, which relies on participants understanding what others may be declaring as essential IPR as a consideration when choosing the best solution to the problem at hand, problems that in my experience seldom, if ever, have a unique solution. I cannot over stress that, in my view, this is fundamental to the proper operation of ETSI's IPR policy, and the overall effectiveness of the standardization process, which all members of ETSI must surely subscribe to by becoming members.

VII. OPINION ON WHETHER SAMSUNG HAS BREACHED ITS OBLIGATION TO LICENSE ON FRAND TERMS

A. Background

101. I have been informed of the following background regarding licensing discussions and litigation between Samsung and Apple: [redacted]

Apple sued Samsung in the United States for infringing its patents, patents that are not related to any mobile wireless standard and that Apple had not committed to ETSI (or any other standard-setting organization) to license, because they have no bearing on the working of any standard. Samsung responded by filing suit in the United States and also in various countries throughout

the world seeking to enjoin Apple from practicing patents Samsung claims are essential to UMTS.

B. Refusal to Offer FRAND Terms

102. Under Clause 6.1 of the ETSI IPR Policy, a FRAND commitment is "irrevocable." That is an express statement that the holder of declared-essential IPR may not retract that commitment and make the IPR unavailable, whether through seeking injunctive relief, demanding non-FRAND terms, or otherwise. Further, to the extent there is any ambiguity in the term "irrevocable"—and in my view there is not—my experience at ETSI is that the phrase is understood to mean that a party is required to grant a license and may not seek injunctive relief, or any other means, to explicitly prevent an implementer of an ETSI standard from practicing patents that are the subject of a FRAND declaration. It is completely counter to the act of irrevocably committing to license IPR essential to a standard under FRAND terms for a company to subsequently seek to prevent another company from bringing to market products that must use that IPR to conform to the standard.

103. A FRAND commitment that could be negated by the ability to seek injunctive relief would threaten the viability of standardization, as potential implementers of the standard would lack certainty that they could quickly bring products to market without being enjoined. Indeed, to have such certainty, implementers would need to reach agreements on license terms with ***every*** holder of declared-essential patents ***before*** bringing standard-essential products to market, a process which would likely take years (if it could be accomplished at all), thereby wholly undermining the foundational ETSI principle of facilitating rapid and widespread product innovation around common ETSI standards. At bottom, permitting holders of declared-essential patents to obtain injunctions, would completely frustrate ETSI's purpose to foster innovation by allowing widespread access to the standards it adopts.

104. By seeking an injunction that would preclude Apple from using its technology, Samsung appears to be revoking its "irrevocable" commitment under Clause 6.1 of the ETSI IPR Policy as to Apple. Assuming that Apple's practice of the UMTS standard infringes Samsung's patents—a point which I understand that Apple does not concede—the ETSI IPR Policy should ensure that Apple is licensed under FRAND terms so that it can continue to practice the standard. If Samsung is attempting to prevent Apple from selling its UMTS products because it is unwilling to license essential IPR under FRAND terms, then that would be inconsistent with the expected behavior of a member of ETSI and, in particular, ETSI's IPR Policy.

105. To the extent that Samsung may be motivated to attempt to use its essential patents to secure a license to Apple's patents which are irrelevant to the working of UMTS, that is in my view improper. The reciprocity concept in the ETSI IPR Policy relates to other essential patents, not to patents that are non-essential or irrelevant to UMTS. Indeed, the ETSI IPR Policy does not address any IPR that does not pertain to its standards. If Samsung has licensed other companies to these apparently essential patents but is withholding a license from Apple (until Apple offers consideration in the form of a license to non-essential patents that are irrelevant to the working of UMTS) that is in my view improper as Samsung committed to accepting a FRAND rate for its declared-essential patents.

VIII. TRIAL EXHIBITS

106. If called as a witness at trial, I may rely on visual aids and demonstrative exhibits that demonstrate the bases of my opinions. Examples of these visual aids and demonstrative exhibits may include, for example, interrogatory responses, deposition testimony and deposition exhibits, as well as charts, or diagrams.