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**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

CERTAIN ELECTRONIC DEVICES,
INCLUDING WIRELESS COMMUNICATION
DEVICES, PORTABLE MUSIC AND DATA
PROCESSING DEVICES, AND TABLET
COMPUTERS

Investigation No. 337-TA-794

**RESPONDENT APPLE INC.'S REPLY SUBMISSION REGARDING THE COMMISSION'S
QUESTIONS ON THE ISSUES UNDER REVIEW, AND ON REMEDY, BONDING, AND THE
PUBLIC INTEREST**

(77 Fed. Reg. 70464 (Nov. 26, 2012))

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Table of Abbreviations

<u>Abbreviation</u>	<u>Document</u>
'114 patent	U.S. Patent No. 7,450,114
'348 patent	U.S. Patent No. 7,706,348
'644 patent	U.S. Patent No. 7,486,644
'980 patent	U.S. Patent No. 6,771,980
ACPR	Apple's Contingent Petition for Review
ACQ	Apple Inc.'s Written Submission Regarding the Commission's Questions on the Issues Under Review, and on Remedy, Bonding, and the Public Interest
APostHB	Apple's Post-Hearing Brief
APostHRB	Apple's Post-Hearing Reply Brief
ARPR	Apple's Response to Petitions for Review
BSA PIS	Public interest statement of BSA/The Software Alliance.
Farrar Decl.	Declaration of Anne Layne-Farrar, submitted as Exhibit A to Samsung's Initial Submission in Response to Commission Notice of Review
HP PIS	Comments of Hewlett-Packard Co., including a copy of comments submitted in Inv. No. 337-TA-745 by Hewlett-Packard, Verizon Communications, and Cisco Systems. Each separate submission is identified by date when cited.
ID	Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond
Intel PIS	Statement Regarding the Public Interest by Non-Party Intel Corporation
JLClaimT	Joint List of Disputed Claim Terms and Proposed Constructions (Oct. 21, 2011)
Min Op. Rep.	Dr. Min's Opening Expert Report
Ordover Decl.	Declaration of Professor Janusz Ordover in Support of Apple's Submission on the Public Interest, submitted herewith as Exhibit 1
Sprint PIS	Third Party Sprint Spectrum, L.P.'s Statement Regarding the Public Interest
SSCQ	Samsung's Initial Submission in Response to Commission Notice of Review
SSPreHB	Samsung's Pre-Hearing Brief

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SSPreHS	Samsung's Pre-Hearing Statement
SSPostHB	Samsung's Post-Hearing Brief
SSPostHRB	Samsung's Post-Hearing Reply Brief
SSPR	Samsung's Petition for Review
SSRPR	Samsung's Reply Petition for Review
Staff CQ	Staff's Brief on Issues Under Review and on Remedy, the Public Interest, and Bonding
Staff PostHB	Staff's Post-Hearing Brief
Staff PostHRB	Staff's Post-Hearing Reply Brief
Staff PR	Staff's Petition for Review
Staff RPR	Staff's Reply Petition for Review
Tr.	Hearing Transcript

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I. INTRODUCTION

The submissions of Samsung and the Staff confirm that no basis exists for overturning the Administrative Law Judge's correct Initial Determination finding no Section 337 violation on the patent merits. This case can be resolved on the patent issues alone.

Those submissions, and those of interested third parties, also show that if the Commission were to find a violation with regard to the '348 and '644 patents that Samsung has declared essential to the UMTS cellular standard, the Commission would need to confront the profound public interest implications of issuing an exclusion order on FRAND-committed patents. As demonstrated by third-party public interest submissions in both this case and the 745 Investigation—and the growing wave of regulatory and judicial decisions against the use of FRAND patents as a basis for exclusionary remedies—an exclusion order on the '644 and '348 patents cannot be reconciled with the statutory public interest factors that the Commission has been entrusted to protect. If the Commission addresses the interplay between FRAND and exclusionary remedies, Apple respectfully requests that the Commission determine that the public interest precludes exclusion orders on FRAND patents save in rare circumstances not present here.

II. RESPONSES TO COMMISSION'S QUESTIONS AND ANALYSIS OF THE PUBLIC INTEREST QUESTION 1.

As explained in Apple's opening submission, the FRAND undertaking precludes the issuance of an exclusion order save in exceptional circumstances where a potential licensee has refused to pay a royalty after a U.S. court has determined that royalty to be FRAND, or where no U.S. court has jurisdiction over the dispute. Samsung's approach to FRAND contravenes the public interest factors that the Commission is statutorily required to consider and would drain FRAND of all meaning.

A. Apple's Position Is Supported By Competition Authorities—Including The FTC—As Well As Courts And Third Parties.

Apple's position is consistent with a broad and ever-growing body of regulatory actions and court decisions, as well as many of the third-party public interest submissions. Samsung's position cannot be reconciled with this emerging consensus.

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First, Apple’s position is consistent with recent actions of competition authorities, notably including the Federal Trade Commission, which the Commission is required, under 19 U.S.C. § 1337(b)(2), to “consult with, and seek advice and information from.” As discussed in Apple’s opening submission, the FTC recently concluded that seeking injunctions based on FRAND-committed patents constituted “an unfair method of competition in or affecting commerce in violation of Section 5 of the FTC Act.” Complaint ¶ 23, *In re Robert Bosch GmbH*, F.T.C. File No. 121-0081 (F.T.C. Nov. 26, 2012), available at <http://www.ftc.gov/os/caselist/1210081/>.

Just last week, the FTC submitted an amicus brief to the Federal Circuit in support of a ruling (discussed further below) that a FRAND commitment to ETSI foreclosed Motorola from seeking injunctive relief against Apple under *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006). The FTC observed that “[a] *fortiori*, a commitment to offer a license to *all* comers on FRAND terms should be sufficient to establish that a reasonable royalty is adequate to compensate the patentee[.]” (Brief of Amicus Curiae Federal Trade Commission at 11, *Apple Inc. v. Motorola, Inc.*, Nos. 2012-1548, 2012-1549 (Fed. Cir. Dec. 4, 2012), available at <http://www.ftc.gov/os/2012/12/121205-apple-motorolaamicusbrief.pdf> (“FTC Amicus”) (emphasis supplied).) The FTC went further, arguing that “[t]he other *eBay* factors (balance of hardships and public interest) also can be expected to militate against injunctive relief in the case of standard-essential patents” because of concerns about harm to innovation, competition, and consumers through patent hold-up. (*Id.* at 11-12.) Similarly, in the 745 ITC Investigation, the FTC submitted a statement outlining its “concern[] that a patentee can make a RAND commitment as part of the standard setting process, and then seek an exclusion order for infringement of the RAND-encumbered SEP [standards-essential patent] as a way of securing royalties that may be inconsistent with that RAND commitment.” Third Party United States Federal Trade Commission’s Statement on the Public Interest at 1, Inv. No. 337-TA-745, June 6, 2012, Doc. ID 482234 (“FTC 745 Statement”). The Department of Justice has expressed similar concerns, *see* p. 6 *infra*.

Samsung’s opening brief does not even mention the FTC or DOJ.

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Second, recent court decisions have confirmed that a FRAND declaration forecloses seeking injunctive relief. In the decision the FTC supported with its Federal Circuit amicus brief, Seventh Circuit Judge Richard Posner questioned how it could be “otherwise”:

By committing to license its patents on FRAND terms, Motorola committed to license [its declared-essential patent] to anyone willing to pay a FRAND royalty and thus implicitly acknowledged that a royalty is adequate compensation for a license to use that patent. How could it do otherwise? How could it be permitted to enjoin Apple from using an invention that it contends Apple *must* use if it wants to make a cell phone with UMTS telecommunications capability

Apple Inc. v. Motorola, Inc., -- F. Supp. 2d --, 2012 WL 2376664, at *12 (N.D. Ill. June 22, 2012)

(emphasis in original). Judge Posner then considered the FTC’s submission in the 745 Investigation, which he described as “impl[ying] that injunctive relief is indeed unavailable for infringement of a patent governed by FRAND,” and confirmed that “its logic embraces any claim to enjoin the sale of an infringing product” because of the “potential economic and competitive impact of injunctive relief on disputes involving SEPs.” *Id.* (quoting FTC 745 Statement).

Similarly, less than two weeks ago, Judge James Robart of the United States District Court for the Western District of Washington decided (on summary judgment) that Motorola could not use its declared-essential patents to pursue injunctive relief against Microsoft; this decision followed that court’s earlier ruling—affirmed by the Ninth Circuit—preliminarily enjoining Motorola from pursuing injunctive relief in Germany against Microsoft. *See Microsoft Corp. v. Motorola, Inc.*, No. 1:10-cv-1823 (W.D. Wash. Nov. 30, 2012), ECF No. 607, slip op. at 13-15 (dismissing Motorola’s claim for an injunction on patents for which it had made a RAND declaration because that commitment meant “Motorola cannot demonstrate irreparable harm”); *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 885 (9th Cir. 2012) (“Implicit in such a sweeping promise is, at least arguably, a guarantee that the patent-holder will not take steps to keep would-be users from using the patented material, such as seeking an injunction, but will instead proffer licenses consistent with the commitment made.”).

Again, Samsung has no real response. Instead it makes the puzzling argument that these decisions demonstrate that REDACTED. (SSCQ at 15.)

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That courts in these cases—both brought by Samsung’s counsel in this investigation—*thwarted* hold-up by keeping declared SEP owners to their FRAND promise scarcely suggests that no hold-up was attempted. Quite the contrary.

Fourth, the view of the FTC and the courts were echoed here in many of the public interest submissions of third-parties—including leading American companies that manufacture cutting-edge products that would be endangered if hold-up were permitted. Intel Corporation, for instance, explained that an “Exclusion Order is unnecessary to protect intellectual-property rights reflected in FRAND-encumbered patents, because the patent holder has already agreed to license to those rights to all comers” and “the scope of its property right is modified” by the commitment. (Intel PIS at 1, 4.) Based on that view, Intel similarly advocates that exclusionary orders should not be available for declared-essential patents subject to FRAND commitments, unless (i) a U.S. court has previously determined that the complainant has made a FRAND offer and the prospective licensee rejected it; or (ii) a U.S. court lacks jurisdiction over the prospective licensee. (Intel PIS at 1.) Hewlett-Packard explained why an exclusion order is, in its view, never appropriate for a declared-essential patent because of the host of harms that would result:

exclusion orders in this context undermine the continued functioning of standard-setting organizations that play a critical role in the modern economy, threaten to create anticompetitive hold-up where access to standards-essential patents is required, lead to an increase in costs to consumers, and reduce consumer choice, market efficiency, fluidity in international trade, and innovation

(HP PIS, July 9, 2012, at 2-3.) The Business Software Alliance¹ observed that companies can choose “whether or not to submit their patented technologies to become part of internationally recognized standards,” but “if they make the choice to participate in the creation [of] technology standards and in the process commit to licensing their technologies on [FRAND] terms, then they should not be allowed to

¹ The BSA is “the leading global advocate for the software industry” with “more than 70 world-class companies” as members. (BSA PIS, June 6, 2012, at 2.)

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circumvent their original commitment by using the Commission to obtain an exclusion order which could result in extracting unreasonable royalties.” (BSA PIS, June 6, 2012, at 1.)

To be sure, some companies (such as Qualcomm and Ericsson) made submissions advocating a more loose approach to FRAND, in which FRAND patents could be used more broadly to obtain exclusionary remedies. As discussed in detail below, the approach advocated by such companies—and by Samsung—would drain FRAND of all practical meaning, allowing them to use their portfolios of declared-essential patents to extract artificially high royalties and exclude competitors’ products.

Fifth, members of Congress have echoed the concerns of the FTC and the courts. In the 745 Investigation, six Senators—including the Chairman and the Ranking Member of the Subcommittee on Antitrust, Competition Policy and Consumer Rights—submitted that “[a]ny precedent that would enable or encourage companies to . . . commit to license . . . patents on RAND terms, and then seek to secure an exclusion order despite a breach of that commitment would . . . implicate significant policy concerns.” (Letter from Senator Kohl *et al.*, Inv. No. 337-TA-745, June 19, 2012, Doc. ID 484039.)

B. The Public Interest Factors Decisively Support Apple.

The factors that the Commission is required to consider pursuant to 19 U.S.C. § 1337(d)(1) will always—except in rare circumstances such as a refusal to pay a FRAND royalty set by a U.S. court or where no U.S. court has jurisdiction—compel a conclusion that an exclusion order on a FRAND patent is against the public interest. Samsung fails to show otherwise.

1. Competitive Conditions In The U.S. Economy

Allowing declared-essential patent owners, such as Samsung here, to seek exclusionary remedies at the ITC threatens significant harm to competition in the U.S. economy. As Professor Janusz Ordover—former Chief Economist for the Department of Justice—explains in an expert declaration that Apple submits herewith, an exclusionary remedy is likely to have two principal effects on competition. *First*, it can result in the immediate removal from the market of a firm that offers innovative and competitive products. (Ordover Decl. ¶ 34.) *Second*, and more fundamentally, an exclusion order can chill the incentives of all firms that rely on standards to invest in research and development in standard-compliant

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products. (Ordoover Decl. ¶¶ 34-35.) That is because to issue an exclusionary remedy on a FRAND patent would demonstrate that any owner of any such patent is able to hold up implementers by exploiting market power conveyed by the fact of standardization, rather than by the intrinsic value of the invention represented by the particular patent. The patent owner and the prospective licensee have highly asymmetric risks and costs in a case where an exclusion order is possible. (Ordoover Decl. ¶ 16.) The FRAND patent owner's potential losses are foregone licensing revenues, which are relatively predictable and finite, but the prospective licensee faces potentially massive losses should it be excluded from the U.S. market—disproportionate costs that are much more significant and more difficult to assess. (*Id.*)

This view is not Professor Ordoover's alone, but rather is widely shared by the FTC, the DOJ and industry participants. The FTC has repeatedly emphasized the potential harm to competition that granting exclusionary or injunctive remedies for FRAND patents presents, including in its 745 Investigation submission. (FTC 745 Statement at 1.) More recently, in its action against Bosch, the FTC observed that seeking injunctions on SEPs against willing licensees “tended to impair competition in the market” for standard-compliant products. Statement of the Federal Trade Commission at 1, *In re Robert Bosch GmbH*, F.T.C. File No. 121-0081 (F.T.C. Nov. 26, 2012), available at <http://www.ftc.gov/os/caselist/1210081/>. Similarly, the Department of Justice's Acting Assistant Attorney General testified before the Senate in 2012 that the DOJ is “concerned about the circumstances in which an exclusion order may be inappropriate, in certain cases where a product implementing a standard has been determined to infringe a valid F/RAND encumbered patent that is essential to that standard.” (*Oversight of the Impact on Competition of Exclusion Orders to Enforce Standards Essential Patents: Hearing Before the S. Comm. on the Judiciary, 112th Cong. (2012)*) (statement of Joseph F. Wayland, Acting Assistant Att’y Gen., Antitrust Div.) at 10-11. available at <http://www.justice.gov/atr/public/testimony/284982.pdf>; see also *id.* at 3-4 (observing that high switching costs once a standard incorporates patented technology “creates the potential for patent holders to take advantage of that market power by engaging in one form of what is known as patent hold-up, such as by excluding a competitor from a market”). Intel likewise observed in its submission that “issuance of an Exclusion Order in the face of unfulfilled

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FRAND commitments would undermine the standard-setting process that is so vital to U.S. innovation, economic growth, and consumer welfare.” (Intel PIS at 6; *see also* HP PIS, July 9, 2012, at 12 (“If the firm that is subject to the exclusion order is forced from the market, consumer choice is diminished, prices increase, efficiency suffers, and innovation may be stifled.”).)

Samsung contends that the presence of competing handsets in the U.S. market, including from Samsung and others, demonstrates that there will be no effect on competition by the removal of Apple devices. (SSCQ at 18.) But that consumers will, in the short run, have access to some other products says nothing about the long-term impact on competition and innovation in the United States created by perverting the standard-setting process.

2. United States Consumers

The potential harm to U.S. consumers from allowing the owner of a FRAND patent to renege on its commitment through seeking an exclusionary remedy is also clear. In the short-run, customers will have fewer choices in the market if a product is excluded. (Ordover Decl. ¶ 42.) But more fundamentally, entry of an exclusion order threatens consumers through higher prices and decreased innovation. As Professor Ordover explains, facing the threat of an exclusion order, the prospective licensee’s upper bound for a royalty is no longer just the inherent value of the FRAND-encumbered patent, pre-standardization, but rather the lost profits it faces if it had to cease selling standards-compliant products. (Ordover ¶ 16.) That change in bargaining position will lead to non-FRAND royalties and, in turn, higher prices for consumers. The issuance of an ITC exclusion order for one FRAND patent owner increases the leverage of other FRAND patent owners in threatening similar action against prospective licensees (for UMTS and beyond), which will bring continuing dynamic harm to U.S. consumers.

Distorting the reward for FRAND patents will in turn harm innovation by undermining the attractiveness of standard setting. As the FTC recently observed, “breaking the connection between the value of an invention and its reward” threatens fundamental harm to the patent system:

Hold-up and the threat of hold-up can deter innovation by increasing costs and uncertainty for other industry participants, including those engaged in inventive activity. It can also distort investment and harm

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consumers by breaking the connection between the value of an invention and its reward – a connection that is the cornerstone of the patent system. ***The threat of hold-up may reduce the value of standard setting, leading firms to rely less on the standard setting process and depriving consumers of the substantial procompetitive benefits of standard setting.***

(FTC Amicus at 5 (emphasis added).) Intel observed that “companies will become reluctant to agree on standards and to incorporate them into their products if SEP holders can unfairly exploit the resulting standard-derived market power through Exclusion Orders, as Samsung seeks to do here.” (Intel PIS at 6.)

Samsung argues, relying on the declaration of Anne Layne-Farrar, that the real danger to consumers is through “reverse” hold-up (or “hold out”) by Apple threatening standard-setting. As a threshold matter, Samsung’s retention of Dr. Layne-Farrar reflects a remarkable indifference to the contractual and ethical undertakings she made when she was retained by **Apple** to assist Dr. Ordover in analyzing the FRAND issues presented by Samsung’s conduct.²

Setting these issues aside, Dr. Layne-Farrar’s opinions fail on the merits. As Professor Ordover describes, Dr. Layne-Farrar’s hypothesis concerning reverse hold-up rests on her failure to recognize the asymmetries in the positions of SEP owners and prospective licensees. She dismisses “theoretical patent holdup analysis” on a variety of bases. But Dr. Layne-Farrar herself co-authored a 2009 article titled *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting* in which she described and proposed solutions to what she viewed as a very real problem of patent hold-up in standard-setting. A. Layne-Farrar, G. Llobet & A. Padilla, *Preventing Patent Hold Up: An*

² Until June 2012, Dr. Layne-Farrar was employed at Compass Lexecon (which employs Dr. Ordover), where she was engaged as a consultant for Apple in various litigations against Samsung. In that role, Dr. Layne-Farrar received confidential information and opinion work product of Apple’s in-house and outside counsel. Further, she is currently serving as an expert on behalf of Apple in litigation against Motorola Inc. in the Northern District of Illinois, providing opinions about Motorola’s assertion of SEPs against Apple. (See Layne-Farrar Decl. at 27 (noting she filed a reply expert report on behalf of Apple on April 15, 2012 and testified at deposition on May 17).) Yet, she has now submitted a declaration ***in opposition to Apple*** regarding the ***very same issues on which she had consulted for Apple in litigation against Samsung***. Dr. Layne-Farrar’s declaration in this matter came as a surprise to Apple, which is now in the process of deciding the appropriate response to her actions. Apple has asked Samsung to explain its decision to retain a person who had access to Apple confidential information, was serving as an expert for Apple, and was expressing opinions consistent with her published articles. Samsung has not responded.

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Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting, 37 AIPLA Q.J. 445 (Fall 2009). In particular, she recognized that “[i]n a typical ‘hold-up’ scenario, a patent holder attempts to hold a standardized technology market hostage and charge more in licensing fees than the value of the patented technologies” and “often succeeds because of the high switching costs of defining a new standard around different technology and shifting capital investments to that different technology.” *Id.* at 451. Now, though, she seeks to explain away hold-up by drawing false equivalencies between SEPs and non-SEPs and grossly underestimating the coercive power of exclusionary remedies that would put at risk a prospective licensee’s entire product line—and thus wrongly concluding that permitting the exercise of such power will lead to FRAND terms. (Ordoover Decl. ¶¶ 25-32.)

As Judge Posner explained, and as corroborated by Hewlett-Packard’s public interest submission in the 745 Investigation, even without the threat of injunctive relief, an implementer has strong incentives to compromise to avoid litigation costs and the risks of a court-determined FRAND rate that is higher than what the implementer could have negotiated. *See Apple*, 2012 WL 2376664, at *13 (“Of course litigation would also be costly for Apple, and this might induce it to pay the [maximum reasonable FRAND royalty] rather than fight.”); HP PIS, July 9, 2012, at 14 (“Potential licensees have ample incentive to enter into licensing agreements on reasonable terms to avoid uncertainty in business planning and litigation costs,” including that the average patent trial costs \$6.25 million). These incentives are symmetrical between FRAND patent owners and implementers, both of which face litigation costs and uncertainty. *Apple*, 2012 WL 2376664, at *13.³

3. The Production Of Like Or Directly Competitive Articles In The United States

As with the threat to competition and U.S. consumers, issuing an exclusion order for FRAND patents also risks undermining the production of like or directly competitive products in the United States.

³ Although Dr. Layne-Farrar asserts that the “potential for reverse holdup is well recognized,” she then cites only the comments of a former FTC official at a single workshop. (Layne-Farrar Decl. ¶ 30.) She points to no official FTC pronouncement, no court decision, and no academic article recognizing this supposed threat.

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As explained above, the opportunity for FRAND patent owners to charge above-FRAND rates through the threat of exclusion orders will create a disincentive for industry participants to adopt or continue to use the standard. That in turn will lead to decreased research and development and production of competing devices in the United States going forward.

Samsung again takes a short-term and incorrect view, arguing that consumers' immediate demands can be met by other available devices, which is incorrect for several reasons. *First*, consumer welfare will be harmed in the near term by an exclusion order because there are a significant number of consumers who have demonstrated their desire for Apple products over the available alternatives. Indeed, the California jury's determination that Samsung copied Apple's designs and features proves that even Samsung recognized how desirable Apple's innovative products are.

Second, the fact that there are currently a number of competing products on the market (SSCQ at 18) does not diminish the long-term threat of issuing an exclusion order. Rather, it underscores that standard-setting is achieving its goal of promoting robust competition and consumer choice. But if the foundation provided by standard-setting—a common platform available to implementers—is put at risk, so too will be the continuing supply of competitive products.

4. The Public Health and Welfare

The public health and welfare is advanced by promoting policies that Congress deems beneficial to these interests. *See, e.g., Certain Inclined-Field Acceleration Tubes and Components Thereof*, Inv. No. 337-TA-67, Comm'n Op., 1980 ITC LEXIS 118, at *35 (Dec. 1980) (“[B]asic scientific research . . . is precisely the kind of activity intended by Congress to be included when it required the Commission to consider the effect of a remedy on the public health and welfare.”).

Congress has repeatedly endorsed the importance of interoperability standards. In enacting the National Technology Transfer and Advancement Act of 1995, for instance, it required that “all federal agencies and departments” use standards “developed by voluntary consensus standards bodies.” Pub. L. No. 104-113 (1996). Further, Congress later found that “technical standards developed or adopted by voluntary consensus standards . . . allow[] the national economy to operate in a more unified fashion.”

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Pub. L. No. 108–237, 118 Stat 661 (2004). Indeed, the importance of standard-setting led Congress to grant standard-setting organizations certain special rights under the Standards Development Organization Advancement Act of 2004. *See* 15 U.S.C. § 4301 *et seq.* The threat posed to standard setting by issuing exclusion orders for FRAND patents will undermine the public welfare interests recognized by Congress.

Samsung counters that the Commission has only relied on the “public health and welfare” in three “truly exceptional cases.” (SSCQ at 17.) That the Commission has infrequently relied on the public health and welfare in declining to issue an exclusion order does not mean that the Commission should ignore the public welfare here. If FRAND were treated in the *de minimis* fashion that Samsung suggests, the ripple effects on competition would be profound, and the public welfare would be injured.

C. The “Middle Ground” Is No Middle Ground At All.

Samsung, the Staff, and certain third parties have proposed frameworks that they contend represent a “middle ground” respecting the rights of both the patent holder and the prospective licensee. But these proposals represent no middle ground. Rather, these proposals set the bar far too low from both the procedural and substantive perspectives—and would give declared-essential patent holders far too much power to engage in coercion based on market power conveyed through standardization.

Procedurally, Samsung, the Staff, and parties like Qualcomm and Ericsson advocate what amounts to a pleading standard, in which FRAND patent holders would need to plead that they are willing to engage in FRAND licensing but that the prospective licensee is, in the eyes of the patent holder, “unwilling” to execute a license. Merely pleading this would be sufficient to warrant instituting an investigation and subjecting the respondent to the resulting cost and uncertainty.

This proposed process would improperly invert the burden as between the patent holder and the prospective licensee by leaving to the end of the investigation what should be a threshold requirement of its initiation. The owner of a declared-essential patent has already made an irrevocable commitment to license its patent on FRAND terms and, absent exceptional circumstances not present in this Investigation, its interests can be fully satisfied by a suit for damages in district court. But rather than hold the patent holder to that commitment by requiring it to go to district court to seek damages or

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demonstrate why it cannot, the proposed process would put the burden on the prospective licensee. That burden is significant. It requires a prospective licensee to litigate a 337 investigation (likely through the hearing) before it can raise and be heard on its fact-specific FRAND defenses. Not only does that subject the prospective licensee to millions of dollars in litigation costs, it carries with it the risk of an exclusion order, resulting in continuing hold-up power that the patent holder will use to try to extract non-FRAND royalties. *See Microsoft Corp. v. Motorola, Inc.*, -- F.Supp. 2d --, 2012 WL 1669676, at *10 (W.D. Wash. May 14, 2012) (“[A] negotiation where [the licensor] must either come to an agreement or cease its sales throughout the country . . . fundamentally places that party at a disadvantage.”); FTC Amicus at 6 (“a royalty negotiation that occurs under the threat of an injunction may be heavily weighted in favor of the patentee in a way that is in tension with the RAND commitment”).

Substantively, the approach advocated by Samsung, the Staff, and parties like Qualcomm and Ericsson is equally flawed. Samsung contends that where the prospective licensee defends itself by alleging the patent holder failed to abide by its FRAND commitment, the REDACTED. (SSCQ at 22.) Samsung also contends that REDACTED. (SSCQ at 17.)

Qualcomm and Ericsson each identify a wide range of factors that might be relevant to such an inquiry. Having to demonstrate only that an offer was not REDACTED—particularly under a highly complex, multi-variable calculus—would as a practical matter make it extraordinarily difficult to prove a FRAND violation. Indeed, the proposal allows a FRAND patent owner to make a greater-than-FRAND demand of a prospective licensee—just one that is not “grossly” so. Why would a patentee make a truly FRAND offer if an exclusion order is available so long as the demand falls just shy of “grossness”?

Similarly, the Staff contends that the REDACTED.

(Staff CQ at 10; emphasis added.) As with Samsung’s approach, this standard essentially gives the patent holder a free pass to make non-FRAND demands and then later argue that the patents *would have*

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been available on FRAND terms through further negotiation. It also asks too much of an ALJ. How is an ALJ (or anyone but the patent holder) to know if the patents REDACTED other than by looking at what the patent holder actually offered?

D. Samsung Willingly Accepted The Benefits Of Standardization And Must Also Accepts Its Costs.

As Samsung itself acknowledges in its submission, ETSI does not mandate that members give a FRAND commitment. (SSCQ at 6; *see also* RX-710 [ETSI IPR Policy] at Clause 6.1.) Instead, ETSI leaves to the member the option whether to have its technology included in the standard. But if the member opts to accept the benefits of having its technology standardized, the ETSI IPR Policy requires a FRAND commitment as the *quid pro quo* for those benefits. (RX-710 [ETSI IPR Policy] at Clause 6.1.) That commitment satisfies ETSI's Policy Objectives of "seek[ing] 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" by striking a "balance between the needs of standardization for public use in the field of telecommunications and the rights of the owners of IPRs." (*Id.* at Clause 3.1.) Accordingly, Samsung willingly made the choice to accept the FRAND bargain, including both its benefits and its restrictions.

The reasons for Samsung, and other ETSI members, to accept the FRAND bargain and seek to have their technology included in the standard are clear. Standardization provides enormous benefits to holders of SEPs. As Dr. Walker explained, having technology standardized can instantly provide access to a mass market and the potential of high-volume royalties. (Tr. [Walker] at 1349:3-22.) But the FRAND bargain also carries with it costs. What the IPR holder gives up for this commercial opportunity is the right to do anything but to license its IPR, including relinquishing rights it might otherwise have to exclude competitors. (Tr. [Walker] at 1349:23-1350:7; *see also* Ordover Decl. ¶¶ 18, 24; Layne-Farrar Decl. ¶ 27.) Samsung and other FRAND patent holders must accept these constraints with the benefits.

E. Apple's Approach Would Not Leave Samsung Without A Remedy.

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Apple’s approach does not deprive a patent holder like Samsung of a remedy. Samsung can seek the remedy it promised to accept—a FRAND royalty—in district court. Or, in rare circumstances described above, it can pursue an exclusionary remedy in the ITC.

Samsung’s response is to contend that an exclusionary remedy is necessary to ensure its bargaining power. But Samsung’s skewed view of its required bargaining power is precisely the problem. As Judge Posner has pointed out, a patent holder is not entitled to an injunction for negotiating leverage:

You can’t obtain an injunction for a simple breach of contract on the ground that you need the injunction to pressure the defendant to settle your damages claim on terms more advantageous to you than if there were no such pressure.

Apple, 2102 WL 2376664, at *13; *see also* FTC Amicus at 13 (“Insofar as Motorola seeks an injunction not for the purpose of excluding Apple’s products from the market, but to bring Apple to the table to negotiate a favorable royalty, its argument does not support an injunction against a willing licensee.”); *Hynix Semiconductor Inc. v. Rambus Inc.*, 609 F. Supp. 2d 951, 986 n.29 (N.D. Cal. 2009) (denying injunction where patentee’s “motivation in seeking injunction is less about preventing irreparable harm and more about extracting punishment or leverage in negotiating with” infringer); *MercExchange, L.L.C. v. eBay, Inc.*, 500 F. Supp. 2d 556, 570-71 (E.D. Va. 2007) (“Utilization of a ruling in equity as a bargaining chip suggests both that such party never deserved a ruling in equity and that money is all that such party truly seeks, rendering monetary damages an adequate remedy in the first instance.”); *Ricoh Co. v. Quanta Computer, Inc.*, No. 06-cv-462, 2010 WL 1607908, at *4 (W.D. Wisc. 2010) (denying injunction where it “would [not] serve any purpose other than to increase [patentee’s] leverage in negotiations for a higher licensing fee”).

QUESTION 2.

FRAND imposes clear rules, which Samsung seeks to discard in favor of the flawed “middle ground” described above. Neither FRAND nor the public interest factors permit this.

A. The Proper Framework For Determining A FRAND Royalty

The proper FRAND framework has both procedural and substantive components.

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1. The Procedural Framework

A party making a FRAND commitment agrees to limit itself to money damages and disclaims the right to seek injunctive relief or an exclusionary order. Accordingly, if the parties cannot negotiate a FRAND royalty rate, the appropriate forum to set a rate is a district court, which has the authority to award money judgments. Third-party Sprint Spectrum echoes this view, highlighting the district courts' authority to set reasonable royalty rates and their experience in doing so. (Sprint PIS at 6-7.)

2. The Substantive Framework

FRAND requires that (1) the royalty *base* on which the rate is to be applied, which must correspond to the standardized functionality; (2) the magnitude of the royalty *rate*; and (3) the licensor must treat all prospective licensees in an evenhanded, *non-discriminatory* fashion.

As discussed above in response to Question 1, Samsung's substantive standard turns on an REDACTED

(SSCQ at 22.) This would vitiate all three prongs of the substantive FRAND standard.

B. This Case Shows Why Samsung's Approach Does Not Work.

Samsung has advocated no procedural pre-conditions for seeking an exclusionary remedy at the ITC for SEPs and a toothless substantive standard for FRAND. This case shows why Samsung is wrong.

1. The Need For Procedural Pre-Conditions

Samsung's pursuit of this Investigation demonstrates the need for procedural checks before investigations relating to SEPs are permitted to go forward. As the timeline below shows, Samsung initiated this Investigation over a month before it had even provided Apple with any UMTS licensing demand at all. Now, long into the Investigation, Samsung has unveiled an untimely new demand.

Timeline of Samsung's Licensing Demands and 794 Investigation

Date	Event
June 18, 2011	Samsung files ITC complaint
July 25, 2011	REDACTED
June 4-15, 2012	Hearing
September 14, 2012	Initial Determination

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December 3, 2012	Parties submit responses to Commission’s written questions
	REDACTED

This timeline shows the unfairness of Samsung’s procedural approach to FRAND. Samsung urges the Commission to find that Apple bears the burden of proving that Samsung has not complied with FRAND, but Samsung did not even make an offer before the case began and now has changed its offer—precluding Apple from taking discovery into the bases for, and developing an evidentiary record regarding, Samsung’s newly minted demand. Such moving-target gamesmanship prejudices both Apple and the decision-maker asked to adjudicate the merits of Samsung’s offer, by depriving both of the ability to look behind the face of Samsung’s demand. (Of course, even on its face, Samsung’s new offer fails the substantive test of FRAND, as discussed below.) This cannot be the appropriate process.

2. The Need For A Meaningful Substantive FRAND Standard

This Investigation also demonstrates the need to recognize the substantive framework that governs FRAND royalty rates. Both Samsung’s new and old demands fall short of what is truly FRAND:

Comparison of Samsung’s Licensing Demands

iPhone sales price	REDACTED	REDACTED
REDACTED (Tr. [Blevins] at 965:11-17.)	REDACTED	REDACTED

In both cases, REDACTED.⁴

Such a demand conflicts with black-letter patent law that the royalty *base* must be limited to the features allegedly covered by the patents, rather than the entire product in which those features are housed. *See LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012) (“Where small elements of multi-component products are accused of infringement, calculating a royalty on the entire product

⁴ REDACTED

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carries a considerable risk that the patentee will be improperly compensated for non-infringing components of that product.”); *see also id.* at 68 (“It is not enough to merely show that [the patented technology] is viewed as valuable, important, *or even essential* to the use of the [accused product]”) (emphasis added). It defies patent law and common sense to suggest that FRAND royalties could be higher than normal reasonable royalties.

Yet that is what Samsung seeks. REDACTED

(Tr. [Blevins] at 960:22-961:2, 965:25-966:13, 969:2-971:13; RX-1236C, RX-1237C.)

Samsung’s demands also conflict with the requirement that a FRAND *rate* is limited by the cumulative royalty an implementer of the standard must pay to practice all patents declared essential to the standard. If all owners of declared-essential patents used the approach taken in Samsung’s demands, the cost of producing devices that work on UMTS networks would become prohibitively high.

C. Samsung’s New Evidence Is Incomplete And Inaccurate.

Apple made a FRAND record at the hearing; Samsung did not. REDACTED.

REDACTED.⁵

⁵ REDACTED

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At the hearing, Samsung offered no response to this evidence. It called no witness and offered no justification for its REDACTED demand. Samsung now seeks to take advantage of the opportunity to supplement the record on the public interest to shore up the deficiencies of its hearing strategy on FRAND. In particular, it seeks to salvage its FRAND case by arguing that its REDACTED demand REDACTED. (SSCQ at 22.) As support for that proposition, Samsung points to an article authored by Eric Stasik, whom Samsung had identified before the hearing REDACTED

(SSPreHS at 3), citing published LTE rates by certain companies. (SSCQ at 22.) Rather than subject Mr. Stasik's purported expertise and the nature of these published rates to cross examination at the hearing—*e.g.*, regarding whether any licensee had actually agreed to pay them, and the differences between the patent portfolios of the identified companies and Samsung—Samsung never called him. His views should not be credited now.

Further, if the Commission believes non-record information is relevant, evidence offered in the parties' trial in the Northern District of California this summer is far more reliable than Samsung's untested and cherry-picked evidence. For example, Samsung's licensing expert David Teece (who was also named as an expert in the ITC but not called by Samsung) testified before the jury. Professor Teece conceded that "[i]n particular, what FRAND does is require you to license[.]" (Ex. 2 [Aug. 16, 2012 Tr.] at 3143:10-11.) Further, Professor Teece confirmed, contrary to Samsung's new arguments here that REDACTED, that Samsung's first UMTS offer was its REDACTED demand:

Q. This a letter from Samsung to Apple; correct?

A. Yes.

Q. Dated July 25th, 2011; correct?

A. That's right.

Q. That's the first time you've seen Samsung propose terms for its UMTS patent[s] to [Apple]; correct?

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A. That's right.

Q. Not in 2010; correct?

A. Correct, yes.

(Ex. 2 [Aug. 16, 2012 Tr.] at 3144:11-15, 3146:8-13.)

Samsung also introduced Professor Teece's summary of Samsung's and Apple's UMTS license agreements. That summary is telling for several reasons. (See Ex. 3 [DX 630]; see also Ex. 2 [Aug. 16, 2012 Tr.] at 3129:11-3130:8.) **First**, the table underscores the obvious flaws in relying on the rates that certain industry participants choose to publish. These rates differ from what happens in the real world. Samsung, for instance, relies on Nokia's purported published rate of 2%. (SSCQ at 22.) REDACTED.

Thus, even if Nokia's 2% published rate were accurate, it would not justify Samsung seeking a higher REDACTED rate.

Second, the payment amounts reflected on Professor Teece's table underscore the unreasonableness of Samsung's demands of Apple. REDACTED. (Ex. 3 [DX630] at 630.004.) REDACTED.

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Third, Professor Teece’s chart undercuts one of the key themes of Samsung’s submission—that Apple is an unwilling licensee intent on free riding and playing outside industry norms by engaging in reverse hold-up. Samsung contends—again without any record support or otherwise—that Apple sees itself as “different” and not required to take a license from Samsung:

REDACTED

(SSCQ at 2.) Professor Teece’s chart proves that false. Apple has agreed to licenses with many of the key players in the industry. Apple is a willing licensee when a *willing licensor* complies with FRAND.

Further, the chart shows that Samsung did exactly what it accuses Apple of doing—it entered the market without being licensed by every holder of SEPs and is currently unlicensed by significant industry participants. Samsung introduced its first cellular phone in 1991 and in the United States in 1997. (Tr. [Denison] at 158:6-10.) REDACTED.

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(Ex. 3 [DX630] at 630.001.) REDACTED. (*Id.* at 630.002)

QUESTION 3.

Apple has no need to design around either the '348 or '644 patents because the ALJ correctly found that it infringes neither. REDACTED. (Staff CQ at 10.)

Samsung's response ignores the ALJ's findings, contending that Apple would not need to design around if REDACTED

(SSCQ at 28.)

Samsung's statements underscore what is at stake here. Samsung is trying to trade on the entire value of the UMTS standard to extract a non-FRAND royalty for the minor "tweaks" in the '348 and '644 patents it claims were incorporated into the standard. (*See* HP PIS, July 9, 2012, at 5 ("If the holder of any one of the patents that is claimed to be essential to implement any one of the standards could exclude the entire product from the market, it would be in a position to extract royalties based on the value of the entire product, which dwarfs the contribution of the patented technology over its alternative at the time of design."); FTC Amicus at 6 ("The resulting imbalance between the value of the patented technology and the rewards to the patentee may be especially acute where the injunction is based on a patent covering a minor component of complex multi-component product, as is often the case with standard-essential patents in information technology industries").) As the FTC has observed, "the use of such leverage is the essence of hold-up." (FTC Amicus at 14.)

QUESTION 4.

Even accepting Samsung's allegations of the scope of the '348 and '644 patents—which the ALJ properly rejected—those patents relate to a very minor portion of the functionality contained in the baseband chips REDACTED even under Samsung's own allegations. The asserted claims of the '348 patent cover one method of encoding more TFCI information—but Samsung does not claim to have invented even TFCI. Likewise, the asserted '644 claims cover one way for a baseband processor to

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decode an absolute grant transmitted on the E-AGCH control channel, but even Samsung does not claim to have invented the E-AGCH control channel itself. Moreover, Samsung again ignores the ALJ's findings of non-infringement and seeks to impute the entire value of UMTS to its two asserted patents—which are only two of thousands of declared-essential patents.

Samsung is also plainly wrong to contend that REDACTED for the accused devices. (SSCQ at 28.) Again, the ALJ correctly found that Apple does not practice the asserted claims and therefore they cannot be the source of consumer demand for them. Moreover, Samsung's argument ignores that the unique value in the Apple products is not their ability to connect to the cellular network. UMTS cellular functionality is commonplace in the mobile market; what is unique—and highly desired by consumers—is the ground-breaking package of industrial design, user interface, operating system, processing capabilities, and software applications available to iPhone and iPad users. Indeed, a jury in California awarded Apple over a billion dollars this summer for Samsung's infringement of such innovations—which shows both Samsung's understanding of its need for such features and the jury's recognition of the high value of those same features.⁶

⁶ The unique suite of Apple innovations has led to industry-leading customer loyalty (sometimes called “stickiness”) and industry-leading device usage. (See *UBS Says Apple has Seriously Sticky Smartphones*, Yahoo! Finance, Sept. 22, 2011, available at <http://finance.yahoo.com/news/UBS-Says-Apple-Seriously-wscheats-3227160913.html>; *Why iPhones generate so much more data traffic than any other smartphone*, Analysis Mason, June 29, 2012, available at <http://www.analysismason.com/About-Us/News/Insight/iPhone-data-traffic-Jun2012/> (noting that iPhone users consume more data and attributing that fact to, among other factors, that the “iPhone is more engaging”); *Traffic and Market Report*, Ericsson, June 2012, at 21 available at http://www.ericsson.com/res/docs/2012/traffic_and_market_report_june_2012.pdf (“iPhones represent, on average, nearly 50 percent of the total mobile phone traffic in the measured networks. The reason is the relatively high average usage per subscription coupled with high penetration.”).) Because of the iPhone and iPad customer loyalty and usage, cellular carriers are willing to pay Apple premium prices for these devices, recognizing that they can use the devices (through subsidized resales) to sign up long-term, high-usage customers who will pay the carriers for years of cellular voice and data fees. It is this dynamic that accounts for the differential in price between the iPhone (for which the cellular carriers, as the highest-volume purchasers, drive the price) and the iPod touch. The key is the carriers are willing to pay a price premium for stickiness and usage rates attributable to *non-cellular* functionality like the user interface. If cellular functionality accounted for the stickiness and usage rates, then every UMTS device would have similar stickiness and usage rates. Plainly, they do not.

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Neither UMTS as a whole, nor the tiny segments of UMTS that Samsung claims are covered by the '644 and '348 patents, accounts for all these Apple innovations. If it were otherwise, then the Apple technology would be equally available in all UMTS devices; it is not. Samsung's attempt to use declared-essential products to tax Apple's investments and research in *non-standardized, product-differentiating* technology demonstrates how far Samsung has strayed from FRAND.

QUESTION 5.

There is no dispute that French law governs Samsung's FRAND undertakings. (SSCQ at 29; Staff CQ at 14.) Further, on the basic issue of whether, under French law, FRAND commitments create binding obligations defined by the ETSI IPR Policy, there was and is no dispute: they are binding.

QUESTION 6.

No, as set forth in response to Question 2, Samsung's licensing demands—REDACTED—are not FRAND and do not discharge any of Samsung's FRAND obligations.

QUESTION 7.

For the reasons set forth in response to Question 2, Apple's refusal to accept Samsung's non-FRAND REDACTED demand was proper and shows only that Samsung has failed to abide by its FRAND commitments. That Apple's decision was correct was demonstrated by subsequent events in cases litigated world-wide (summarized in Apple's opening brief), in which the vast majority of Samsung's assertions of declared-essential patents have failed. Moreover, REDACTED

QUESTION 8.

As the Staff and Apple agree (and as the ALJ correctly found), the asserted claims require the use of "a 10 bit TFCI information," which means that all 10 of the bits are TFCI information and are not padding. (ID at 547; ACQ at 34-35; Staff CQ at 19-21.) Because the Qualcomm baseband processor domestic industry products REDACTED, the ALJ correctly held that Samsung cannot prove the technical prong of domestic industry for those products. (ID at 547.) If the Commission were to incorrectly reverse the ALJ's findings with respect to "a 10 bit TFCI information," it would necessitate

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findings that the accused products do not infringe for an additional reason, that the asserted claims are invalid, and there would still be no technical prong of domestic industry. (ACQ at 39-41.) None of the arguments in Samsung's Written Submission supports a contrary finding on any of these issues.

A. A "10 Bit TFCI Information" Does Not Include Padding Bits.

The '348 patent itself, the parties' Joint Technology Stipulation, the trial testimony of Apple's expert Dr. Davis and Samsung's expert Dr. Min, and the relevant portions of the ETSI standard all confirm that the phrase "10 bit TFCI information" does not include padding. (ACQ at 34-37; Staff CQ at 20-21.) Samsung's new theory that "10 bit TFCI information" can include padding bits (SSCQ at 35) is unsupported by the evidence and wrong for several reasons.

First, Samsung does not identify *any* support in the '348 patent for padding bits being "TFCI information." Samsung's *only* argument is that the '348 patent "describes adding padding bits" (SSCQ at 35-36), and from this Samsung makes the unsupported and illogical leap that the padding bits are TFCI information. As set forth in Apple's and the Staff's Written Submissions, this is unquestionably wrong because the '348 specification expressly distinguishes "TFCI Information" bits from the use of "padding" (ACQ at 35), and because unasserted claims of the '348 patent use the different term "10 bit unit" to describe the use of 10 bits that may include padding bits. (ACQ at 35-36; Staff CQ at 20-21.)

Second, Samsung argues it is "curious" that Apple did not ask Dr. Davis for his opinion on the meaning of "10 bit TFCI information." (SSCQ at 37.) There is nothing "curious" about this at all—Apple was *not permitted* to ask Dr. Davis for his opinion. In an attempt to prevent the devastating fact that the Qualcomm baseband processors REDACTED from coming into the record, Samsung successfully moved to prohibit Dr. Davis from offering this testimony on the basis that Apple failed to disclose in its interrogatory responses that Qualcomm's baseband processors

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REDACTED.⁷ (Order 65 at 7.) Had Dr. Davis been permitted to testify on this subject, he would have testified that the Qualcomm products REDACTED (Davis Reb. Rep. ¶ 248 (emphasis added), *quoted in* Order No. 65 at 6.)⁸

Third, contrary to Samsung's assertion, the ETSI standard confirms that padding is not "TFCI information." It states that if the TFCI consists of fewer than 10 bits, then the input would be padded with zeros to obtain "10 bits." The ETSI standard *does not* state that the padding bits (which contain no meaningful information) are "TFCI information." (ACQ at 37.)

Finally, while Samsung implies that '348 patent inventor Dr. Kang testified that participants in the standards setting process agreed with the erroneous position Samsung now advances in litigation, (SSCQ at 38 (citing Tr. [Kang] at 208:13-18)), he gave no such testimony. Dr. Kang merely testified that his proposal was discussed and adopted. (Tr. [Kang] at 208:13-18.)

B. Table 1a And The Qualcomm Products Are Different.

Samsung's argument that there is no difference between Table 1a and the Qualcomm products (SSCQ at 38-39) is wrong because the 10 bit TFCI information in Table 1a can represent 1024 different TFCI values, whereas REDACTED

(ACQ at 38-39; Staff CQ at 21.)

C. Samsung's Interpretation Of Col. 3, Lines 27-34 Is Unsupported By The '348 Patent's Written Description.

Samsung is wrong that column 3, lines 27-34 of the '348 patent suggest that the asserted claims encompass the use of fewer than 10 TFCI information bits plus padding bits (SSCQ at 39-40). Read in

⁷ Samsung did not take Qualcomm's deposition until after the close of fact discovery, and the Qualcomm source code was not produced until days before the close of fact discovery. Apple does not have access to Qualcomm's source code in the ordinary course of its business, and therefore could not have independently identified that the baseband processors REDACTED earlier.

⁸ Under Order No. 65, Apple was required to prove that Qualcomm's baseband processors REDACTED through the cross-examination of Dr. Min and the testimony of Qualcomm's witness, which it did. (Order No. 65 at 7; Tr. [Min] at 1256:16-18; 1257:6-15; JX-58C [Chizgi Dep.] at 258:20-260:20; 261:3-8; CX-0475C at 582, lines 2027-2032; 583, line 25.) Additionally, though Dr. Davis could not be asked his opinion on direct, when asked on cross-examination, Dr. Davis refuted Dr. Min's testimony that padding bits are "TFCI information." (ACQ at 37 n.13.)

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the context of the remainder of column 3, lines 27-34 prove that the patent distinguishes between “TFCI information” and padding bits because column 3 of the ’348 patent describes adding padding to “TFCI information” to obtain more “bits,” not more TFCI *information*. (ACQ at 39.) Additionally, as the Staff correctly notes, lines 27-34 only describe a prior art encoder, not the alleged invention. (Staff CQ at 22.)

D. Construing “10 Bit TFCI Information” To Include Padding Would Not Affect The Finding Of No Violation For The ’348 Patent.

1. There Is An Additional Basis For Noninfringement Under Samsung’s Construction.

Samsung and the Staff incorrectly conclude that Samsung’s proposed construction would not result in an additional basis for noninfringement, because both fail to REDACTED in the Intel baseband processors. (SSCQ at 41; Staff CQ at 23.) As set forth in Apple’s Written Submission, the Intel baseband processors in Apple’s accused products REDACTED

. (ACQ at 40; Tr. [Davis] at 2045:5-11; RX-1285C at 593DOC000139-140.)

In support of their argument, Samsung and the Staff cite testimony that (under Apple’s, the Staff’s, and the ALJ’s construction), the Intel baseband processors in Apple’s accused products REDACTED . (SSCQ at 41; Staff CQ at 23.) But neither cites any evidence that REDACTED in the Intel processors would still be a “10 bit TFCI information” if padding bits could make up the “10 bit TFCI information.” In that case, it would be a REDACTED⁹ (ACQ at 40.)

2. Samsung’s Construction Further Invalidates The Claims.

Samsung’s argument that construing “10 bit TFCI information” to include padding would not

⁹ To the extent Samsung argues that the “comprising” language in the claims allows the “10 bit TFCI information” limitation to be met by REDACTED , this argument should be rejected. Federal Circuit precedent is clear that “comprising” does not render individual claim limitations like “10 bit TFCI information” open-ended. *See, e.g., Dippin’ Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed. Cir. 2007); *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1380 (Fed. Cir. 1998).

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affect validity (SSCQ at 41-43) is mistaken.¹⁰ Broadening the asserted claims to include padding would further render them invalid over the existing “basic” TFCI encoding apparatus because that encoding apparatus outputs the identical 64 codewords as are shown in Table 1a of the ’348 patent. (ACQ at 40-41.) Thus, as long as there were 6 bits of actual information and 4 bits of padding, the prior art “basic” TFCI encoding apparatus would “encode” a “10 bit TFCI information.” (*Id.*)

3. Samsung’s Construction Would Not Impact the Domestic Industry Finding.

Even under Samsung’s new construction, the Qualcomm products do not meet the “10 bit TFCI information” limitation for multiple reasons.¹¹ *First*, Samsung’s argument REDACTED

in the Qualcomm product suggests there are 10 TFCI bits is wrong because—as Samsung concedes— REDACTED .¹² In an attempt to support its factually unsupportable argument, Samsung cites Dr. Davis’s testimony that, in coding theory, one sequence is used to encode each bit. (SSCQ at 44 (citing Tr. [Davis] at 1990:16-24).) Importantly, however, Dr. Davis testified that the “number of sequences that we’re *using* corresponds to the number of input bits.” (Tr. [Davis] at 1990:16-24 (emphasis added).) In the Qualcomm processors, there are REDACTED. (APostHB at 47-48.)

Second, while Samsung and the Staff assert that the relevant input REDACTED in the Qualcomm baseband processor products (SSCQ at 44; Staff CQ at 22 n.8), the evidence does not support this conclusion. Dr. Davis testified that he had reviewed the source code identified by Dr. Min, that there was no evidence that REDACTED. (Tr. [Davis] at 2057:12-22.)

¹⁰ Indeed, Samsung’s arguments do not address the “padding” issue at all, and Samsung is wrong that the prior art does not anticipate and render obvious the asserted claims, for the reasons set forth in Apple’s Contingent Petition for Review. (ACPR at 22-27; *see also* ARPR at 28-30.)

¹¹ Samsung argues that construing “10 bit TFCI information” to include padding bits will not affect whether the ST-Ericsson products satisfy this limitation. (SSCQ at 43.) As the ALJ found, the ST-Ericsson products do not practice the asserted claims for independent reasons. (ID at 556-57.)

¹² Historically (though the relevant section, 4.3.4, has since been deleted from the standard), there were other uses for the (32, 10) code set forth in accused section 4.3.3 of the standard. This explains why the Qualcomm baseband processors REDACTED

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Third, regardless of whether TFCI information bits include padding, the Qualcomm domestic industry products do not output a codeword that “*corresponds* to a 10 bit TFCI information” because the codewords they output REDACTED .

(ACQ at 41.) Samsung argues the output *corresponds* to 10 bits of TFCI information because REDACTED . (SSCQ at 45-46.) But Samsung ignores that REDACTED

. Samsung’s argument that a “10-bit TFCI information input is enough to satisfy the claims” (SSCQ at 46-47) simply ignores the “corresponds” limitation.

Fourth, as set forth in Apple’s Written Submission and as the ALJ correctly found, the Qualcomm products do not practice asserted claims 75 and 82 for the additional reason that they do not contain a “puncturer for puncturing” as required by claim 82 or a “controller for outputting a 30 bit codeword” as required by claim 75. (ID at 547; 557; ACQ at 41.)

QUESTION 9.

As described in Apple’s original response, the asserted claims require outputting “from among a plurality of [30 or 32] bit codewords,” which requires the controller to select a codeword from a look-up table. (ACQ at 41-44.) The Intel, Qualcomm, and ST-Ericsson baseband processors at issue in this investigation REDACTED. None of Samsung’s or the Staff’s arguments in support of the ALJ’s claim construction on this issue has merit.

First, Samsung’s argument that the claims must include the codeword generator embodiments of Figures 8 and 14 because the preamble of the asserted claims begins with “A Transport Format Combination Indicator (TFCI) encoding apparatus” is without merit. As Samsung later acknowledges, unasserted claims such as claim 36 are specifically limited to certain types of TFCI encoding apparatus (they include codeword generators and exclude look-up table encoders). (SSCQ at 49.) The preambles of these claims are identical to the preamble of the asserted claims. (*See* JXM-1 [’348 patent] at 41 (claim 36).) Thus, even Samsung admits that the body of the claim can exclude disclosed embodiments despite

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the phrase “TFCI Encoding Apparatus” in the preamble.¹³

Second, Samsung’s argument that the “very nature” of the encoding process “dictates” that all encoding involves the output of a codeword “from among a plurality” of all possible codewords (SSCQ at 48) is equally unavailing. As an initial matter, this argument concedes that, under Samsung’s and the Staff’s reading, the claim language “from among a plurality of [30 or 32] bit codewords” is wholly superfluous, because—by Samsung’s definition—all encoders must “necessarily” meet this limitation. A reading of the claims that renders claim language superfluous is rarely, if ever, correct. *See, e.g., Gen. Am. Transp. Corp. v. Cryo-Trans, Inc.*, 93 F.3d 766, 770 (Fed. Cir. 1996); *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005). In addition, Samsung’s argument attempts to **add** the word “possible” to the disputed claim language, such that it would read “from among a plurality of ***possible*** [30 or 32] bit codewords.” (SSCQ at 48 (“... because it can be any one of the 1024 ***possible*** 32-bit codewords.”) (emphasis added).) But this reading of the asserted claims cannot be correct; the remaining language within the very same claim limitation states that the codeword output corresponds to a “10 bit TFCI information input to the controller from a plurality of ***possible*** 10 bit TFCI information.” (See JXM-1 [’348 patent] at 45-46 (claims 75, 82) (emphasis added).) Thus, the claim itself utilizes the word “possible” where it meant “possible” and the presence of that word should not be inferred.

Third, Samsung’s argument regarding the unasserted claims (SSCQ at 49) misstates Apple’s position. Apple has never contended that, solely based on the language of unasserted claims such as claim 36 (which Samsung concedes are directed to a codeword generator only), “the asserted claims *must* be limited to only a look-up table.” (SSCQ at 49 (emphasis in original)). Far to the contrary, it is because the language of the asserted claims themselves is specifically directed to outputting a codeword “from among a plurality of [30 or 32] bit codewords,” which does not encompass codeword generators. These codeword generators, described by Figures 8 and 14, are incapable of outputting a codeword from among

¹³ The ALJ correctly concluded that “TFCI Encoding Apparatus” is not limiting and agreed with the Staff that the body of the claims describe “a structurally complete invention, such that omission of the preamble does not affect the structure or steps of the claimed invention.” (Order No. 63 at 14-15.)

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a plurality of codewords—they generate a single codeword. Unasserted claims, such as claim 36, which are directed specifically to codeword generators such as those described in Figures 8 and 14, are evidence that the '348 patent separately claimed distinct embodiments, and therefore support Apple's reading of the plain language of the asserted claims. (*See* ACQ at 43-44.) Because neither Samsung nor the Staff has offered a cogent explanation why the asserted claims were drafted to require outputting a codeword “from among a plurality of [30 or 32] bit codewords” if they were not intended to be limited to look-up table type encoders, the fact that the unasserted claims clearly cover other disclosed embodiments of the invention supports the conclusion that the asserted claims do not cover those embodiments. *E.g.*, *PSN Ill., LLC v. Ivoclar Vivadent, Inc.*, 525 F.3d 1159, 1166 (Fed. Cir. 2008).

Fourth, the Staff's argument that even if the asserted claims were limited to a look-up table, the infringement analysis would remain unchanged (Staff CQ at 26), reflects a misunderstanding. There is no evidence (and Samsung has never contended) that any product at issue in this Investigation REDACTED. The Staff appears to have confused the table showing the (32, 10) code in the ETSI standard with the operation of the relevant products, which all experts REDACTED. (*See, e.g.*, Tr. [Davis] at 2044:25-2045:17; Tr. [Min] at 556:19-23; 604:2-9; 636:19-637:3; *see also, e.g.*, JX-63C [Schiele Dep.] at 94:18-23; 113:10-20.)

QUESTION 10.

Apple's Written Submission demonstrated that the written description and claims of the '348 patent prove that “puncturing” does not encompass “excluding.” (ACQ 45-49.) Apple also demonstrated that, even if the Commission were to incorrectly construe “puncturing” to encompass “excluding,” it would not alter the non-infringement or no technical prong findings for the '348 patent, and that the claims would be invalid. (*Id.* at 49-54.) Having submitted no evidence during *Markman* (and having no evidence in the record to which they can now point) that “puncturing” encompasses “excluding,” Samsung and the Staff largely dodge Commission Question 10's request that they identify support in the specification or the record for their claim. Instead, they attempt to convince the Commission to adopt a meaning of “puncturing” that is inconsistent with the understanding of every person of skill in the art who

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testified, other than Samsung's litigation expert, and which is wholly inconsistent with Samsung's prior litigation position and even the testimony of its expert on invalidity issues. None of Samsung's or the Staff's arguments supports a finding that "puncturing" encompasses "excluding"; nor do they support reversal of the no infringement and no domestic industry findings even if puncturing were so construed.

In addition, although it disagrees with the ALJ's conclusions concerning "puncturing," the Staff's Written Submission supports the finding of no violation on the alternative basis that claim 82 is invalid and an invalid claim cannot support a finding of domestic industry. (Staff CQ at 31.)

A. "Puncturing" Does Not Encompass "Excluding."

Unlike Apple (which supported its argument based on the '348 specification and claims), neither Samsung nor the Staff points to any evidence in the '348 claims or specification suggesting that "puncturing" encompasses "excluding." Moreover, the extrinsic evidence and attorney argument on which Samsung and the Staff rely do not support the outcome they propose.

First, neither the Staff nor Samsung provides a reasoned explanation for why any evidence supports a finding that "puncturing" encompasses "excluding." Indeed, the Staff makes *no argument* that puncturing encompasses "excluding" at all; the portion of the Staff's brief addressing "puncturing" does not even contain the word "excluding." (Staff CQ at 26-30.)¹⁴ For its part, Samsung relies entirely on the faulty tautology that (1) "puncturing" is "any means" to adapt the size of a sequence (SSCQ at 50); (2) "excluding" adapts the size of a sequence (SSCQ at 51); (3) therefore, puncturing is excluding. (*Id.*) Having failed to establish—and, as explained below, instead having previously denied (SSPostHB 71, 75)—that puncturing is "any means" to adapt the size of a sequence of bits (*see below*), Samsung's logic fails. The evidence demonstrates that puncturing is not "any means" to adapt the size of a sequence.

Second, Samsung's new argument that "[p]ersons of ordinary skill in the art agree that 'puncturing' is *any means* by which to adapt the size of a sequence of bits to fit an acceptable

¹⁴ Rather than address the Commission's question, the Staff simply reasserts the arguments it made in its petition for review regarding its (incorrect) view of the "plain meaning" of puncturing. Apple has already responded to those arguments in its response to Samsung's and the Staff's petitions for review, (*see* ARPR at 5-7, 18-20), which responses it incorporates herein.

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transmission size,” (SSCQ at 50 (emphasis added)) flatly contradicts its own prior argument (and its expert’s testimony) that puncturing is “just *one* of *many* methods” to reduce the size of a codeword. (SSPostHB 71, 75 (“There is nothing necessary about puncturing instead of using *any of the other* tools available to reduce the length of a codeword.”); Tr. [Min] at 2997:19-2998:11.) It cannot be true that puncturing is “one of many” ways to reduce the size of a codeword if puncturing includes *all* the ways of reducing the size. That would be akin to arguing “blue is one of many colors” on one day, but arguing that “blue includes all colors” the next.

Third, every dictionary and other source of extrinsic evidence cited by Samsung or the Staff refutes a finding that “puncturing” is “any means” to adapt the size of a sequence of bits, and *none* supports a finding that puncturing encompasses “excluding.” CXM-48 (*see* SSCQ at 51) states that “puncturing” is the “suppress[ion]” of bits, not the “exclusion” of them (much less “any means” of adapting the size of a bit sequence). CXM-47 (*see id.*) says nothing about “puncturing” at all, and not even Samsung contends that it states “puncturing” encompasses “excluding.”¹⁵ (*Id.*) The dictionary on which the Staff relies is the *same* dictionary that was cited by the ALJ in his *Markman* decision, and on which the ALJ correctly based his determination of no infringement and no technical prong of domestic industry. (ID at 52.) The *MacWilliams* textbook to which the Staff refers¹⁶ defines puncturing as “deleting,” and never suggests puncturing is “excluding.”¹⁷ (RX-367 at 28.) Finally, the IEEE 100 Authoritative Dictionary of IEEE Standards Terms at 286 (7th ed. 2000) is irrelevant and was not relied

¹⁵ Samsung cites CXM-47 at page 112. (SSCQ at 51.) Samsung did not include page 112 of the underlying text as part of CXM-47, and it is therefore not part of the record. What is more, CXM-47 was published in 2006, seven years after the ‘348 patent application was filed. It cannot overcome the overwhelming contemporaneous evidence from *MacWilliams*, RXM-36 [Clark & Cain], RXM-37 [Lin & Costello], RXM-38 [Soleymani], and Dr. Davis that, as of 1999, a person of skill in the art understood “puncturing” to have a plain meaning of deleting or removing bits from a sequence.

¹⁶ Samsung’s argument that *MacWilliams* shows a 2-bit codeword can be directly encoded only proves that the ALJ correctly applied the plain meaning of puncturing. As all experts agree, *MacWilliams* shows “*deleting*” a coordinate of the displayed code. That is, “puncturing” the basis sequences, which would result in directly encoding a shorter codeword. (*See* ACQ at 52.) There is no disclosure in *MacWilliams* (and Dr. Min did not testify to the contrary) that “excluding” (or not generating) a coordinate is a form of “puncturing” the final codeword. It would not be.

¹⁷ (*See* ARPR at 18-19.)

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upon by any expert. (*See* ARPR at 19-20.) In short, neither Samsung nor the Staff provides the Commission with any sound evidence for construing “puncturing” to encompass “excluding,” much less “any means.”

B. The Accused Products Do Not “Puncture” Nor “Exclude” Bits From The 32-Bit Codeword As Required By Claim 82.

Neither Samsung nor the Staff articulates a specific argument that Intel’s baseband processors “exclude” bits from the 32-bit codeword. (Staff CQ at 30-31; SSCQ at 52.) Instead, both Samsung and the Staff essentially repeat the arguments made in their petitions for review. (Staff CQ at 30-31; SSCQ at 52; *see* SSPR at 19-21; Staff PR at 8-9.) These arguments fail. (*See* ARPR 16-20.)

Indeed, to conclude that the plain meaning of “puncturing” encompasses “excluding,” and that the accused Intel baseband processors perform “puncturing” under this definition, the Commission would not only need to reverse the ALJ and find Apple’s expert not credible; the Commission would need to determine that every person of skill in the art who has considered how the Intel baseband processors/ETSI standard operate (with the notable exception of Samsung’s litigation expert) was wrong when they determined that what those processors do is not “puncturing.”

Intel’s corporate witness, Bernd Schiele, who works in industry and helped to design Intel’s baseband processors, testified that REDACTED . (JX-0063 [Schiele Dep.] at 53:6-10 (REDACTED

) (emphasis added).) Nobody has ever suggested that Intel’s testimony is unreliable – in fact, Samsung cites another portion of it as evidence of infringement under its erroneous claim construction. (SSCQ at 52.)

Likewise, *ETSI working group participants Siemens, Ericsson, ETRI, and LGIC deleted all five uses of the terms “punctured” and “puncturing”* when they amended the relevant ETSI standard to adopt a proposal different from Samsung’s, as the “redline” versions of the new proposed standard submitted to ETSI show.

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The TFCI bits are encoded using a (32, 10) punctured sub-code of the second order Reed-Muller code. The coding procedure is as shown in figure 10.

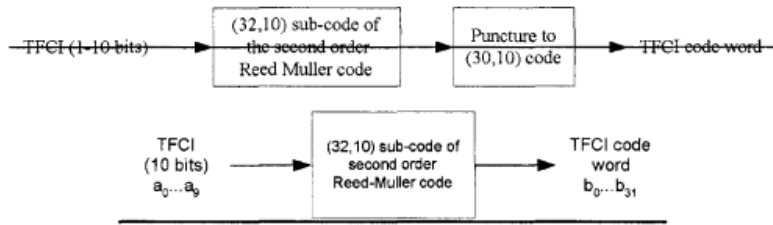


Figure 10: Channel coding of TFCI bits

(RX-73 at APL794-0000028821; *id.* at 28823 (“Then, the code words of the (32, 10) sub-code of second order Reed Muller code are punctured into length 30 by puncturing the 1st and 17th bits.”).) As revised, that standard never calls for puncturing bits in connection with TFCI encoding.

In the absence of *any* direct evidence that the Intel baseband processors “exclude” two bits (REDACTED; *see* ACQ at 49-52), and the overwhelming evidence that neither the Intel baseband processors nor the ETSI standard involve “puncturing,” even if the Commission were to disagree with the ALJ’s construction of “puncturing,” it should not affect the determination of no infringement.

C. Samsung’s And The Staff’s Infringement Theory Renders Claim 82 Invalid As Obvious.

As the Staff and the ALJ agree (*see* Staff CQ at 30-31; ID at 309), if Samsung’s infringement theory is accepted, claim 82 is invalid as obvious. Samsung’s argument to the contrary (SSCQ at 53-54)—that it would not have been obvious to an electrical engineer with experience in telecommunications technology that (1) 32 bits minus 2 bits is 30 bits, and (2) therefore that the 32-bit codeword must eliminate two bit positions—fails. (*See* SSCQ at 53 (arguing (1) *MacWilliams* only discloses puncturing 1 bit, and it would not be obvious to puncture 2, and (2) that it would not be obvious to puncture in a predetermined position).) If “puncturing” includes “any means” to adjust the size of a codeword, then the *only* way to fit a 32-bit codeword into a 15-slot radio frame is by puncturing two bits. Bits *must* be punctured at a “predetermined” position. Otherwise, the error correcting code would not work. (*See* Tr. [Davis] 2021:4-22.). Thus, a finding of infringement would necessarily result in the existing extended

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TFCI encoding apparatus in the draft ETSI standard rendering claim 82 obvious in light of the decision of ETSI to move to a 15-slot radio frame that could only carry 30 bits of the TFCI codeword.

D. The DI Products Do Not Contain A Puncturer For Puncturing And Domestic Industry Cannot Be Based On An Invalid Patent Claim.

As set forth in Apple’s Written Submission, even if “puncturing” were incorrectly construed to encompass “excluding,” that would not upset the finding of a lack of a domestic industry, because the ALJ also found no domestic industry on alternative grounds for all of Samsung’s asserted products. (ACQ at 52-53.) With respect to the Qualcomm-baseband processor domestic industry products, that ground is that REDACTED. (*See above* Response to Question 8; ACQ at 53.) With respect to the ST-Ericsson baseband processors, that ground is that Samsung failed to submit any evidence about how, if they do at all, those processors output a 30-bit codeword. (*See* ACQ at 53.)

In its response to Question 10[B], the Staff correctly notes, however, that even if “puncturer for puncturing” were read to cover the structure ST-Ericsson baseband processors there still could not be a finding of domestic industry, because domestic industry cannot be based on the practice of an invalid claim. (Staff CQ at 31.) “To prevail [on technical prong], the patentee must establish by a preponderance of the evidence that the domestic product practices one or more *valid claims* of the patent, either literally or under the doctrine of equivalents.” *Certain Ground Fault Circuit Interrupters*, Inv. No. 337-TA-739, Comm’n Op. at 71 (June 8, 2012) (emphasis added; citation omitted); *see also id.* at 73.¹⁸ A rule that the technical prong can be proven based on an invalid claim would conflict with Federal Circuit precedent holding that the test for determining technical prong is essentially the same as that for infringement. *See, e.g., Alloc v. ITC*, 342 F.3d 1361, 1375 (Fed. Cir. 2003). There, invalidity is a complete defense. *See, e.g., Viskase Corp. v. American Nat. Can Co.*, 261 F.3d 1316, 1323 (Fed. Cir. 2001).

¹⁸ Section 337 can only be violated upon proof of “an industry in the United States, relating to the articles *protected by* the patent.” 19 U.S.C. § 1337(a)(2) (emphasis added). An invalid patent claim provides no “protection” against infringement, as an invalid claim does not give rise to any right to exclude. *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1320 (Fed. Cir. 2009).

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QUESTION 11.

A. Extracting Means “Removing For Separate Processing”

Samsung seeks to construe “extracting a 60-bit rate-matched block” to eliminate the express numerical requirement that what gets “extract[ed]” is a block of exactly “60 bits.” Samsung criticizes the ID for requiring “extracting” of “exactly 60 bits,” e.g., by arguing that any number of bits could be extracted from the Node B signal so long as 60 bits are later “obtained” or “derived.” (*See, e.g.*, SSCQ at 60.) Samsung is wrong: both the intrinsic and extrinsic evidence contradict its position. (ID at 110-11.)

1. The Intrinsic Record Contradicts Samsung.

The private parties and Staff agreed before the ALJ that the term “extracting” required no construction beyond its plain meaning.¹⁹ Consistent with this record below, Apple submits that no further construction is required. To the extent the Commission seeks now to construe “extracting,” however, it should be given its plain meaning of “removing for separate processing” for the reasons set forth in Apple’s opening submission. (ACQ at 57-58.)

(a) The Claim Language

The plain claim language contradicts Samsung’s proposed construction in at least three ways.

First, the claims recite “extracting a 60-bit rate-matched block from a signal received from a Node B.” This means what it says. It defines what must be extracted (exactly 60 bits) and from where (the Node B signal). Samsung’s argument that any number of bits can be extracted from the Node B signal, so long as at some later point 60 are “obtained” or “derived,” is contrary to the express language.

Second, Samsung’s attempt to eliminate the requirement for exactly “60-bits” is contrary to the “generating 90 coded bits” limitation. The “90 coded bits” are generated by “rate-dematching the rate-matched block” according to a “rate matching pattern representing positions of bits to be depunctured.” It is: (1) undisputed that “the rate matched block” is the “60-bit rate-matched block” extracted during the

¹⁹ Samsung contends that Apple somehow previously offered a construction of the word “extracting.” (SSCQ at 55, 59.) This is untrue. Although Apple, the Staff, and the ALJ all agreed that Qualcomm’s and Intel’s accused chips do not practice the overall “extracting” limitation, this was demonstrated without Apple ever construing the term “extracting,” or using it in any way beyond its plain meaning.

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“extracting” limitation, and (2) stipulated that each “bit” inserted by depuncturing is “a binary digit” (e.g., a binary 0 or 1). (JLClaimT at 6.) The rate matching pattern used for depuncturing inserts bits at exactly 30 bit positions.²⁰ Accordingly, if the result of “extracting” could be some number of bits other than 60 (as Samsung’s construction permits), inserting 30 bits during depuncturing would not produce the recited “90 coded bits.”

Third, the ALJ construed “rate-matched block” as “a block of channel-coded bits that have been matched to transmittable bits on a physical channel....” (ID at 17-18.) The ’644 specification explains that the number of physically transmittable bits is exactly 60. (JXM-3 [’644 patent] at 5:46-47 (“The channel-coded control information is delivered in a 2-ms TTI of the E-AGCH.”), 5:49 (“a total of 60 bits can be transmitted in the 2-ms TTI”), 6:59-62 (“30 bits are punctured from the 90-bit channel-coded block for transmission in a 2-ms EAGCH TTI ... *creating a 60-bit rate-matched block.*” (emphasis added)).) Samsung’s attempt to construe “extracting” to eliminate this requirement that the channel coded bits be matched to the transmittable bits is thus also contrary to the claims’ requirement that a “rate-matched block” is extracted.

(b) The Specification

Samsung’s proposed construction is also contrary to the teaching of the ’644 specification that exactly 60 bits (no more, no less) are extracted. (JXM-3 [’644 patent] at 3:67-4:1 (“a 60-bit rate-matched block is extracted from a signal received from a Node B” (emphasis added)); *id.* at 4:14-16 (“a physical channel demapper extracts a 60-bit rate-matched block from a signal received from a Node B (emphasis added).) Every “rate-matched block” described in the ’644 patent is precisely 60 bits long. (JXM-3 [’644 patent] at 3:39-42, 3:56-59, 8:62-65, 10:55-58, 12:59-62, 14:59-62, 16:53-56, 18:63-66, 20:35-38, 22:3-6, 23:41-44, 25:13-16.) There is no disclosure of extracting any other number of bits. Indeed, when asked whether the ’644 patent discloses REDACTED Samsung’s expert, Dr. Min, conceded there was no such disclosure. REDACTED

²⁰ Specifically, the claims recite “the rate matching pattern comprises {1, 2, 5, 6, 7, 11, 12, 14, 15, 17, 23, 24, 31, 37, 44, 47, 61, 63, 64, 71, 72, 75, 77, 80, 83, 84, 85, 87, 88, 90}.”

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2. The Extrinsic Record Contradicts Samsung

Extrinsic evidence, like litigation testimony of inventors and experts, is generally entitled to little weight compared to intrinsic evidence. *N. Am. Vaccine, Inc. v. Am. Cyanamid Co.*, 7 F.3d 1571, 1577 (Fed. Cir. 1993) (“Such after-the-fact testimony is of little weight compared to the clear import of the patent disclosure itself”). Even so, rather than supporting Samsung’s proposed construction, copious testimony of Samsung’s inventors and expert actually refute it. *Bristol-Myers Squibb Co. v. Teva Pharmaceuticals USA, Inc.*, 288 F. Supp. 2d 562, 585-86 (S.D.N.Y. 2003) (“Testimony against a patentee’s own interest ... is perhaps the ‘most persuasive extrinsic evidence.’”) (quoting *Evans Med. Ltd. v. American Cyanamid Co.*, 11 F.Supp. 2d 338, 350 (S.D.N.Y. 1998), *aff’d*, 215 F.3d 1347, 1999 WL 594310 (Fed. Cir. 1999)). Lead inventor YB Kim testified, for example: REDACTED Similarly, Samsung’s expert Dr. Min repeatedly admitted REDACTED

By contrast, the testimony Samsung’s brief cites (SSCQ at 58-59), has no relationship to the proper construction of “extracting.” In none of these passages was a witness asked what “extracting” means, or even how many bits the “extracting” limitation requires to be extracted. Despite all asserted ’644 claims being directed to receivers, the testimony Samsung cites from Dr. Min focuses on the transmitter. (SSCQ at 58.) And the testimony cited from Dr. Stark was not about the ’644 patent at all – but concerned instead REDACTED (SSCQ at 59.)

3. The ALJ Correctly Applied The “Extracting” Limitation

Samsung criticizes the ID for supposedly misapplying the “extracting” limitation to require extracting exactly 60 bits (no more, no less). (SSCQ at 60.) The fight is really over an incontestable fact—what a “bit” is. As the ALJ found, Samsung has engaged in “shifting position with respect to what

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constitutes a bit.” (ID at 111.) Before the hearing, Samsung stipulated that a “bit” means “a binary digit” (i.e., a binary 0 or 1). (JLClaimT at 6.) Samsung’s expert admitted at trial that the accused Qualcomm chip REDACTED Dr. Min likewise admitted that the Intel chip REDACTED Based on these admissions of Dr. Min, the ALJ correctly concluded that neither chip meets this limitation.

B. Samsung Has Failed To Identify Any Variable In The Source Code That Is A “60-Bit Rate-Matched Block”

Samsung’s brief ignores Dr. Min’s cross-examination, which eviscerated the direct testimony upon which Samsung now relies. Samsung argues that the Qualcomm chip REDACTED, while the Intel chip REDACTED Samsung accuses these REDACTED of being the “60-bit rate-matched block.,” which is wrong for multiple reasons.

1. Samsung’s Shifting Arguments

In his opening report, Dr. Min argued the Qualcomm and Intel chips practice the claims’ “extracting a 60-bit rate-matched block” limitation because REDACTED Samsung repeated this argument in its pre-hearing brief, arguing that REDACTED

This argument was proved false at trial. The term “bit” means “a binary digit” (JLClaimT at 6) and “rate-matched block” means “a block of channel-coded bits that have been matched to transmittable bits on a physical channel by puncturing or repeating bits at predetermined positions.” (Order No. 63 at 48.) Dr. Min conceded at the hearing that Qualcomm’s REDACTED and Intel’s REDACTED are each specifically *not* a “bit” as this term has been construed. REDACTED These REDACTED are not binary digits because they are REDACTED

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Because REDACTED

REDACTED not the “60-bit rate-matched block” that the ‘644 claims require.

Faced with the collapse of its pre-hearing argument, Samsung has since trial sought to invent a brand new theory (and several facts) that each accused chip REDACTED Under Samsung’s new theory, REDACTED Samsung is incorrect, and its new argument should be rejected for multiple reasons.

2. Samsung’s New Argument Is Barred By G.R. 7.2.

G.R. 7.2 bars Samsung’s new argument.²¹ Not only does Samsung’s pre-hearing brief fail to make this argument, it in fact argues the opposite: REDACTED Samsung continued, REDACTED Having argued its pre-hearing brief that REDACTED Samsung’s directly contrary post-hearing argument – that REDACTED – is barred by G.R. 7.2.

3. Samsung’s New Argument Is Contrary To The Testimony Of Its Own Expert, Dr. Min.

²¹ Ground Rule 7.2 provides: “Any contentions not set forth in detail as required herein shall be deemed abandoned or withdrawn....”

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Samsung's new argument is also contrary to its own expert's testimony. Dr. Min testified that REDACTED And Dr. Min conceded that REDACTED

REDACTED In fact, when asked to identify REDACTED There is no such code because that is not how the accused chips operate.

4. Samsung's New Argument Is Contrary To The Operation Of The Accused Chips.

Neither Qualcomm's nor Intel's chip performs "extracting" of "bits." REDACTED In order to "extract" a binary digit from a received signal sample, a receiver would have to make a final decision about whether it received a 0 or a 1. Neither chip does so. REDACTED Instead, REDACTED REDACTED It was undisputed that REDACTED As Dr. Min conceded, REDACTED

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Moreover, where the claims require “extracting a 60-bit rate-matched block,” the undisputed evidence at the hearing was that neither accused chip does so. REDACTED This limitation requires extracting exactly 60 binary digits as a block. (JLClaimT at 6 (“bit” means “a binary digit”); REDACTED By contrast, the accused devices REDACTED from a Node B signal. REDACTED It was undisputed at the hearing that REDACTED

QUESTION 12.

A. **Samsung Has Waived Its Infringement And Domestic Industry Contentions for All Claims Of The '980 Patent.**

In its opening submission, Samsung agrees that it has waived its infringement and domestic industry contentions for claims 5 and 9 of the '980 patent,²² but asserts, without explanation, that it has preserved its infringement and domestic industry allegations for claims 10 and 13. (SSCQ at 65.)

Samsung is incorrect for three reasons.

First, as Apple explained in its opening submission, at the hearing, Samsung waived its arguments for claims 10 and 13 by relying entirely on new and previously undisclosed “dialing program” theories for the Apple and Samsung products. (ACQ at 65-66.)

Second, as Apple also explained in its opening submission, after the hearing, Samsung further waived its arguments for claims 10 and 13 by failing to seek Commission review of the ALJ's

²² The Staff asserts that “Samsung’s contentions regarding claim 5, though meritless, were not waived” (STCQ at 35), but even Samsung agrees that it has abandoned that claim. (SSCQ at 65.)

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determination that Samsung did not (1) identify a “dialing program” in the Apple or Samsung products, or (2) prove when any such program executes. (*Id.* at 66; ARPR at 82-83, 90.)

Finally, although Samsung now contends that it preserved its arguments for claim 13, its petition for review did not even *mention* claim 13. (ACQ at 65-66; SSPR at 57-70 (only addressing claim 10); SSRPR at 73-85 (responding to Apple’s contingent petition only on claim 10 issues); ARPR at 80.) Samsung thus has waived all infringement and domestic industry arguments for claim 13. *See Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, 2009 WL 5134139, Comm’n Op., at *18; 19 C.F.R. § 210.43(b)(2).

B. Samsung Has Failed To Identify A “Dialing Program” In The Apple Or Samsung Products.

In its Notice of Review, the Commission asked Samsung to “[i]dentify by *source code file name* or other *specific* record designation the *precise* ‘dialing program’ that Samsung relies upon to prove infringement and domestic industry with respect to claim 10.” (Notice at 4 (emphases added).) As Apple and the Staff both explained in their opening submissions, Samsung cannot do so—because, as the ALJ correctly found in his Initial Determination, Samsung never identified a “dialing program” at the hearing for the Apple or Samsung products, by reference to source code or otherwise. (ACQ at 66-67; Staff CQ at 36-38; ID at 165-66, 568-69.) Samsung’s opening submission only confirms that result.

First, Samsung contends that it supposedly met its obligation to identify a “dialing program” based on hearing testimony of its expert, Mr. Cole, who generically testified that: (1) the accused Apple products contain “software that allows a user to dial and edit a phone number selected in a PDA function”; and (2) the Samsung domestic industry products contain “software that provides the claimed functionally that Apple concedes is in the Galaxy S (i.e., editing and dialing a phone number selected in a PDA function).” (SSCQ at 66, 67.) But the ALJ explicitly found that Mr. Cole’s testimony was “troublesome,” “implausible,” “inconsistent,” “unsettled,” “lack[ing] substance and credibility,” and “unpersuasive, mutable, undeveloped, and poorly supported.” (ID at 150 n.20, 158 n.38, 159, 164.) And even if Samsung could reasonably rely on Mr. Cole, his cited testimony is nothing more than a purely

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functional description—i.e., not source code or other *specific* evidence identifying the *precise* “dialing program” of claim 10, as the Commission has requested.

Second, apparently aware of that problem, Samsung also resorts to the fallback argument (again, based on Mr. Cole’s unreliable testimony) that the “dialing program” requirement is met: (1) for the Apple products, by REDACTED

(SSCQ at 66); and (2) for the Samsung products, by REDACTED
(*id.* at 67).²³ But that attempt to rely on REDACTED

is yet another new (and, therefore, waived) theory that conflicts with the argument that Samsung made at the hearing: that the “dialing program” is supposedly met by REDACTED

To date, Samsung has failed to identify what REDACTED might be. (ApostHB at 166, 168 n.53,178; APostHRB at 97-98, 113; ACPR at 78 n.29, 82-83; ARPR at 82.)

Third, Samsung’s attempt to REDACTED in the accused Apple products conflicts with Mr. Cole’s admission that the “dialing program” for those products REDACTED

(Tr. [Cole] at 2498:2-19; ApostHB at 165-67; APostHRB at 95, 99; ACPR at 78 n.27.) Similarly, for the Samsung domestic industry products, Samsung’s new “dialing program” theory conflicts with Mr. Cole’s admissions that REDACTED

Mr. Cole’s expert report also did not even mention REDACTED

²³ It is unclear whether Samsung has modified its theory for the accused Apple products even further by REDACTED

(SSCQ at 66.)

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(APostHB at 177-79; ACPR at 83.)

Finally, Samsung lacks any record support for its new argument that the “dialing program” limitation is met by REDACTED

As set forth in Apple’s opening submission, no person of ordinary skill in the art would consider REDACTED. (ACQ at 67; APostHB at 168, 179; APostHRB at 97-99, 108, 113; ACPR at 78-79, 84; ARPR at 82 n.37.)

C. Samsung Has Failed To Identify A “Dialing Program” That Executes “When A PDA Function Is Utilized.”

In its opening submission, Samsung argued that, in the accused Apple products, REDACTED

(SSCQ at 66-67.) But the record confirms that REDACTED

(ACQ at 68; APostHB at 153-55, 168-69; APostHRB at 105, 109; ACPR at 79-80.) REDACTED

that claim 10 requires: i.e., “when a PDA function is utilized in said smart phone.” (APostHB at 151, 162, 169; ARPR at 90-93.)

Samsung’s arguments are equally strained for its domestic industry products, particularly in light of its tactical decision not to bring a fact witness to the hearing to testify about those products. As a result, Samsung is left solely with the vague (and not credible) testimony of Mr. Cole, who failed to identify REDACTED

Without any evidence as to REDACTED

Samsung cannot identify “the conditions that trigger [their] execution,” as the Commission has requested, and cannot explain REDACTED “when a PDA function is utilized,” as claim 10 requires. (ACQ at 68; APostHRB at 115; ARPR at 90-92.)

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QUESTION 13.

In its opening submission, Apple explained why the green “Call” button, Messaging application menu item, “Dial...” button, and hyperlinked phone numbers cannot meet the “dialing icon” requirement of claim 10 if the Commission correctly construes that term to require a “pictorial element.” (ACQ at 68-70; Staff CQ at 39 (Staff agreeing hyperlinked phone numbers are not a “dialing icon”).) In its opening submission, Samsung appears to have abandoned its arguments about the “Dial...” button, but contends that the other three items satisfy the “dialing icon” limitation of claim 10 under that construction. Not so.

First, Samsung asserts that a hyperlinked phone number is a “dialing icon” with a “pictorial element” because color and underlining supposedly “set the phone number apart from the surrounding text.” (SSCQ at 69.) But as Apple and the Staff explained in their opening submissions, the ALJ correctly concluded that a hyperlinked phone number is nothing more than underlined blue *text*—i.e., it has no pictorial element. (ACQ at 68; Staff CQ at 39; APostHRB at 114; ARPR at 88; *see* ID at 160-62 & n.41.)

Second, Samsung correctly notes that the green “Call” button has a pictorial element (a picture of a phone), but it fails to identify any evidence showing: (1) that a “dialing program” is what displays that button, as claim 10 requires; or (2) how pressing that button switches the display screen into a dialing state in which a number can be selected, as claim 10 also requires. That is because there is no such evidence. Thus, if the Commission construes “dialing icon” to require a pictorial element, the “Call” button still cannot meet the “dialing icon” requirement of claim 10. (ACQ at 69; APostHRB at 114-15; ACPR at 84.)

Finally, Samsung is also correct that the Messaging application menu item contains a pictorial element (a picture of a phone). But as Apple explained in its opening submission, that menu item cannot meet the “dialing icon” limitation of claim 10 because Samsung did not rely on it in its pre-hearing brief (thus, waiving the argument), and because Samsung has no record evidence revealing what software displays that menu item (therefore, it cannot prove that the “dialing icon” is displayed by the “dialing program,” as claim 10 requires). (ACQ at 69; APostHRB at 114-15; ARPR at 88-89.)

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III. ANALYSIS OF REMEDY AND BONDING

A. ANY REMEDY SHOULD SPECIFY, FOR EACH SET OF PATENT CLAIMS, THE PARTICULAR CATEGORIES OF PRODUCTS THAT FORM THE BASIS OF THE VIOLATION

Both Samsung (SSCQ at 69-71 & Exhibit C) and the Staff (StaffCQ at 40-42 & Attachments 1-2) propose limited exclusion orders that fail to distinguish among the three distinct categories of products accused in this investigation: wireless communication devices (the accused iPhones), portable music and data processing devices (the accused iPod Touch), and tablet computers (the accused iPad). Although the Notice of Investigation identifies each of these as examples of “certain electronic products,”²⁴ Samsung asserted distinct sets of patent claims against each product category during the investigation. Accordingly, any remedial order should identify, for each set of patent claims, the specific product categories that are found to infringe those claims and form the basis of the violation found.

As shown in Samsung’s Ground Rule 7.1 chart (Exhibit L to Samsung’s Prehearing Statement, submitted as corrected June 1, 2012 (EDIS doc. 481817)), the only patent asserted against the iPod Touch products is the ’114 patent. Likewise, Samsung has not accused the iPad products of infringing the ’980 patent. Thus, if a violation is found only as to the ’980 patent, any remedial order should identify only the single accused product category—wireless communication devices (iPhones)—and not the two other product categories, portable music and data processing devices (iPods) and tablet computers (iPads). *See Certain Integrated Repeaters, Switches, Transceivers and Products Containing Same*, Inv. No. 337-TA-435, Limited Exclusion Order, ¶¶ 1-2 (Oct. 24, 2001) (listing covered product categories separately for each patent).

Identifying the specific product categories found to infringe each patent is also consistent with the policy behind the Commission’s proposed addition to Rule 210.12(a) to require that the complaint identify with more precision the accused product categories. *See Notice of Proposed Rulemaking*, 77 Fed. Reg. 41120, 41122, 41127 (July 12, 2012) (proposing new paragraph (12) to require that the complaint include a “clear statement in plain English of the category of products being accused,” and stating that

²⁴ Notice of Investigation, Inv. No. 337-TA-794, 76 Fed. Reg. 45860 (Aug. 1, 2011).

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such description will be used in Commission notices soliciting public interest comments and in notices of investigation).

B. ANY CEASE AND DESIST ORDER SHOULD NOT EXTEND TO THE SERVICING, REPAIR, OR REPLACEMENT OF THE ACCUSED PRODUCTS

Without explanation, Samsung's proposed cease and desist order deviates from the Commission's standard format by seeking to bar "servicing, repairing, [or] replacing" the covered products. (SSCQ at Exhibit C ¶ 1.) Samsung provides absolutely no argument in support of the inclusion of these activities in the proposed order. (*See* SSCQ at 70-71.) For the reasons stated in Apple's opening submission (ACQ at 70-71), any remedial order should exempt service, repair, or replacement articles imported for servicing previously imported accused Apple products under warranty. Accordingly, the Commission should reject the form of cease and desist order as proposed by Samsung.

C. NO BOND SHOULD BE REQUIRED

1. Samsung Failed To Carry Its Burden To Show Both The Need For And Amount Of Any Bond.

Having failed to introduce any evidence in support of its claim that a 100% bond is necessary to protect it from injury during the Presidential review period, Samsung has abandoned that claim and now argues that (i) the need for a bond should be presumed from the mere finding of a violation, and (ii) a bond should be set at the rate of 4.25%, based on counsel's calculations and a publication produced for the first time in this investigation as an attachment to Samsung's submission. (SSCQ at 69-71 & Exhibit D.) Samsung is wrong on both counts.

First, the Commission has made clear that "the complainant has the burden of supporting any proposition it advances, including the amount of the bond," *Certain Rubber Antidegradants, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-533, Comm'n Op. at 40 (July 21, 2006), and complainants' "failure to satisfy their burden to support bonding may result in no bonding at all." *Certain Personal Data and Mobile Communication Devices and Related Software*, Inv. No. 337-TA-710,

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Comm'n Op. at 85 (Dec. 29, 2011).²⁵ Samsung has made no showing of a need for any bond to protect it.

Second, Samsung's belated attempt to provide information on a reasonable royalty rate through an entirely new document is too little, too late. It is procedurally improper, because it contravenes (a) the Judge's Ground Rules providing that any arguments not contained in the Prehearing Briefs are waived (Order No. 43, Ground Rule 7.2 (Mar. 23, 2012))²⁶; and (b) the specific page limitations set forth in the Notice of Review.²⁷ In its prior briefing, Samsung took the position that "[n]o reliable royalty rate evidence exists here because Samsung's licenses are broad cross-licenses." (SSPreHB at 175; *see also* RD at 6.) Accordingly, Samsung did not present any reasonable royalty evidence to the ALJ.

Samsung now asks the Commission to determine a reasonable royalty rate based on data from a newly-produced report, without the benefit of any testimony or other explanation of the data, let alone an opportunity for the other parties to engage in discovery or cross-examination concerning the report. In the cases cited by Samsung (SSCQ at 79), the median royalty rates were supported by evidence presented to the ALJ at the evidentiary hearing, or were agreed-to by the parties. *See Certain Mobile Devices and Related Software*, Inv. No. 337-TA-750, ID at 210-211 (Jan. 13, 2012) (recommending bond based on "undisputed" evidence concerning average industry royalty rates); *Certain Semiconductor Chips with Minimized Chip Package Size*, Inv. No. 337-TA-605, Comm'n Op. at 74 (June 3, 2009) (parties agreed to bond based on median industry royalty rates). Here, data used in the report appears to have been derived

²⁵ Samsung argues that any importation of infringing articles should be presumed to cause injury, citing the Commission's recognition that, in principle, importation of infringing articles "indirectly harms the public interest." SSCQ at 76 (citing *Certain Baseband Processors*, Comm'n Op. at 137, n.487 (June 19, 2007)). The general public interest in the enforcement of intellectual property rights does not equate, however, to a case-specific showing in this investigation of Samsung's need for a bond to protect it from injury during the Presidential review period.

²⁶ *See Certain Automated Media Library Devices*, Inv. No. 337-TA-746, Comm'n Op. at 15 (Nov. 19, 2012) (finding waiver under the ALJ's Ground Rules); *see also id.* at 15 ("The Commission will normally not consider any contention not made before the ALJ.").

²⁷ The Commission limited the parties' initial submissions to 80 pages, "not including any attachments or exhibits related to discussion of the public interest." Notice of Review at 4. Samsung's submission contains a full 80 pages of text, and thus its entire 12-page Exhibit D, directed to bonding and not public interest issues, is in excess of the page limit.

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from publicly-available licensing agreements that would include “broad cross-licenses” of the very type that Samsung originally contended were “no[t] reliable.” (SSPreHB at 175; *see* SSCQ Exhibit D at 6-7.)

2. The Pricing Information Supports A Zero Bond.

As the Staff correctly contends, the information and expert testimony presented by Apple on the average prices of competing products demonstrates that no bond is required to protect Samsung from injury during the 60-day Presidential review period. (StaffCQ at 45-47; *see* AppleCQ at 71-73.) Samsung’s claim that Apple withheld relevant model-specific U.S. sales data (SSCQ at 78 & n.27) is both spurious—the cited deposition testimony very clearly established that the allegedly withheld reports in fact present data on a world-wide basis, and do not contain model-specific data on U.S. sales (*see* APostHB at 174; JX-0041C [Lancaster Dep.] at 60:8-61:3)—and otherwise rejected by the ALJ, who found that Samsung sat on its hands and failed to pursue further discovery or an order to compel. (RD at 6 (“Samsung had an affirmative obligation to obtain the evidence it needs to support its proposed remedy”).) Moreover, as Samsung now acknowledges, it had Apple’s price lists with model-specific pricing (SSCQ at 78), but it made no attempt to compare those prices to its own pricing data (which it reported REDACTED, *see* ApplePostHRB at 174 & n. 97; JX-0026C [Pendleton Dep.] at 58:6-10). Samsung cannot simply claim that a price comparison is “impracticable” in order to obtain a higher bonding rate. *See Certain Personal Data Devices, supra*, Inv. No. 337-TA-710, Comm’n Op. at 85. Samsung has not shown entitlement either to the arbitrary 100% rate it sought before the ALJ, nor to the 4.25% rate it now seeks based on newly-produced, untested data. No bond should be required.

Dated: December 10, 2012

Respectfully submitted,
Apple Inc.

By its counsel,

/s/ James L. Quarles III
William F. Lee
Peter M. Dichiara

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In the Matter of CERTAIN MOBILE ELECTRONIC DEVICES, INCLUDING WIRELESS COMMUNICATION DEVICES, PORTABLE MUSIC AND DATA PROCESSING DEVICES, AND TABLET COMPUTERS

Inv. No. 337-TA-794

U.S. International Trade Commission; Before the Honorable E. James Gildea

CERTIFICATE OF SERVICE

I, Lanta M. Chase, hereby certify that copies of the foregoing document, **RESPONDENT APPLE INC.'S REPLY SUBMISSION REGARDING THE COMMISSION'S QUESTIONS ON THE ISSUES UNDER REVIEW, AND ON REMEDY, BONDING, AND THE PUBLIC INTEREST (PUBLIC VERSION)**, were served upon the following parties as indicated below on this 10th day of December, 2012.

The Honorable Lisa R. Barton Acting Secretary U.S. International Trade Commission 500 E Street, S.W., Room 112 Washington, D.C. 20436	<input type="checkbox"/> Via Hand Delivery (Original + 2 Copies) <input checked="" type="checkbox"/> Via Electronic Filing (EDIS) <input type="checkbox"/> Via Overnight Delivery
The Honorable E. James Gildea Administrative Law Judge U.S. International Trade Commission 500 E Street, S.W., Room 317-E Washington, D.C. 20436	<input type="checkbox"/> Via Hand Delivery <input checked="" type="checkbox"/> Via Overnight Delivery <input type="checkbox"/> Via Facsimile <input checked="" type="checkbox"/> Via Electronic Mail Sarah.zimmerman@usitc.gov
Lisa Murray Office of Unfair Import Investigations U.S. International Trade Commission 500 E Street S.W., Room 401 Washington, DC 20436	<input type="checkbox"/> Via Hand Delivery (1 Copy) <input type="checkbox"/> Via Overnight Delivery <input type="checkbox"/> Via Facsimile <input checked="" type="checkbox"/> Via Electronic Mail Lisa.Murray@usitc.gov

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/s/ Lanta M. Chase
Lanta M. Chase

EXHIBIT 1

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

CERTAIN ELECTRONIC DEVICES,
INCLUDING WIRELESS COMMUNICATION
DEVICES, PORTABLE MUSIC AND DATA
PROCESSING DEVICES, AND TABLET
COMPUTERS

Investigation No. 337-TA-794

**DECLARATION OF PROFESSOR JANUSZ A. ORDOVER
IN SUPPORT OF APPLE'S SUBMISSION ON THE PUBLIC INTEREST**

DECEMBER 10, 2012

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I. QUALIFICATIONS, ASSIGNMENT, AND SUMMARY OF CONCLUSIONS

1. My name is Janusz A. Ordover. I am Professor of Economics and former Director of the Masters in Economics Program at New York University, where I have taught since 1973. I am a Special Consultant at Compass Lexecon, an economic consulting firm that is a wholly owned subsidiary of FTI Consulting, Inc. During 1991-1992, I served as Deputy Assistant Attorney General for Economics at the Antitrust Division of the United States Department of Justice. As the chief economist for the Antitrust Division, I was responsible for formulating and implementing the economic aspects of antitrust policy and enforcement of the United States, including co-drafting the 1992 U.S. Department of Justice and the Federal Trade Commission Horizontal Merger Guidelines. I also had ultimate responsibility for all of the economic analyses conducted by the Department of Justice in connection with its antitrust investigations and litigation.

2. My areas of specialization include industrial organization, antitrust, and regulation economics. I have served as an advisor on antitrust and regulatory issues to many organizations, including the American Bar Association, the World Bank, the Organization for Economic Cooperation and Development, the Inter-American Development Bank, and the governments of Poland, Hungary, Russia, the Czech Republic, Australia, and other countries. I have provided economic testimony in policy hearings conducted by the Department of Justice, the Federal Trade Commission and the United States Senate. I have also consulted and testified in a wide range of antitrust and intellectual property litigation matters. In February 2011, I was the recipient of Global Competition Review's Economist of the Year award. I also have served as a Member of the Economics Task Force of the American Bar Association's Antitrust Section. I have consulted extensively on antitrust and regulatory issues in telecommunications and computer industries, as well as on economic issues related to intellectual property and standard setting. My cv is attached as Exhibit 1 to this declaration.

3. In this matter, Samsung seeks to force Apple Inc. ("Apple") to cease selling certain of its handsets and tablets in the United States because Samsung alleges that the products infringe patents it claims ETSI has included in the UMTS telecommunications standard, and for which Apple has not been licensed. I have been asked by counsel for Apple to analyze the impact of

allowing a holder of a declared standard-essential patent (SEP)¹ to be granted an exclusion order under the public interest factors that the ITC is required to consider as part of its deliberation. In addition, Apple has asked me to review and respond to the analysis contained in the Declaration of Dr. Anne Layne-Farrar in support of Samsung's Statement on the Public Interest submitted to the Commission on December 3, 2012 ("Declaration").²

4. In brief, my conclusions are as follows:

- ETSI and other standard-setting organizations (SSO) encourage FRAND commitments for SEPs to prevent SEP holders from taking advantage of patent holdup to extract possibly exorbitant royalties from implementers that are locked into industry standards, and thereby preserve the benefits from industry standard setting.
- To permit SEP holders to obtain exclusion orders on FRAND-encumbered patents would undermine the effectiveness of FRAND commitments and lead to the very patent holdup such commitments are designed to avoid.
- Allowing exclusion orders in a declared standards-essential patent case like this would be contrary to the Section 337 public interest factors, except in highly unusual circumstances not present in this proceeding.
- Dr. Layne-Farrar's analysis is flawed in many important respects.

5. The remainder of this declaration explains the economic reasoning behind my conclusions in more detail.

¹ I use "SEP" to refer to a patent that has been declared essential to an industry standard regardless of whether the patent is actually essential. SSO participants self-declare patents as essential, meaning that no independent entity reviews claimed-essential patents to determine whether they are, in fact, technically essential to comply with the standard. The cost and difficulty surrounding a determination as to whether thousands of patents declared essential to a standard are, in fact, essential means that a standard implementer -- that must satisfy the technical requirements of the standard -- cannot practically challenge each one.

² Declaration of Anne Layne-Farrar, Ph.D. in Support of Samsung's Statement on the Public Interest, *In the Matter of Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet Computers*, Investigation No. 337-TA-745, December 3, 2012 (hereinafter *Layne-Farrar Declaration*).

II. FRAND COMMITMENTS AS A MEANS TO PRESERVE THE BENEFITS OF STANDARDS

6. Before discussing the impact of exclusion orders on the public interest factors, I briefly describe the benefits of standards, the potential costs when the standard process is abused, and the efforts of SSOs such as ETSI to mitigate these costs by adopting rules governing the licensing behavior of SSO participants that have declared patents to be essential to a standard promulgated by the SSO.

A. BENEFITS OF STANDARDS³

7. Compatibility standards are commonly adopted in industries where complementary products or components, manufactured by different firms, must interoperate or communicate with each other. Compatibility standards generate a broad range of economic benefits for consumers and producers, as well as innovators. By establishing an accepted mode of interoperation, for example, standards prevent market fragmentation, thereby lowering costs due to scale economies and enlarging the overall market.^{4,5} In addition, the setting of a compatibility standard fosters product innovation and creates incentives for firms to differentiate their products based on non-standard-related dimensions. That differentiation is valuable to consumers and can

³ For a discussion of benefits and costs of standards, *see*, Carl Shapiro (2001), “Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting,” in Adam B. Jaffe, Josh Lerner, and Scott Stern, eds., *Innovation Policy and the Economy vol. 1*, Cambridge Mass. (The MIT Press), 119-150; Richard Gilbert (2011), “Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations,” *Antitrust Law Journal*, 77(3):855-888; and Daniel J. Gifford (2003), “Developing Models for a Coherent Treatment of Standard-Setting Issues Under the Patent, Copyright and Antitrust Laws,” *IDEA: The Journal of Law and Technology*, 43(3): 331-94; and David J. Teece and Edward F. Sherry (2003), “Standards Setting and Antitrust,” *Minnesota Law Review* 87:1913-94.

⁴ *See, e.g.*, David J. Teece and Edward F. Sherry (2003), “Standards Setting and Antitrust,” *Minnesota Law Review* 87:1913-94 at 1917. Closely related to this, in industries with network effects in which the value of a product to one consumer depends on the number of other consumers using the product, standards signal that other consumers will be buying the same or compatible products and that consumers will enjoy the benefits of network economies; standards thus can help overcome consumer resistance to committing to a durable component. (Carl Shapiro (2001), “Setting Compatibility Standards: Cooperation or Collusion?” in *Expanding the Bounds of Intellectual Property* (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman, and Harry First, eds.), Oxford University Press at 88.)

⁵ *See, e.g.*, Carl Shapiro (2001), “Setting Compatibility Standards: Cooperation or Collusion?” in *Expanding the Bounds of Intellectual Property* (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman, and Harry First, eds.), Oxford University Press at 88.

enhance consumer demand for the product.⁶ Importantly, standards allow any supplier – including new entrants – to compete in the downstream markets for products that implement the standard. The differentiation, competition, and follow-on innovation enabled by a standard ultimately benefits consumers. Finally, compatibility standards expand the set of products available to consumers since, without such standards, some products would not be feasible.⁷

B. COLLABORATIVELY SET STANDARDS MAY ALLOW SEP HOLDERS TO EXPLOIT MARKET POWER

8. Although collaborative standard setting offers clear benefits, it can also raise antitrust concerns and potentially harm consumers.⁸ In this proceeding, the most relevant harm is that collaborative standard-setting may empower a firm that claims to hold SEPs to block other firms from practicing a standard or raise significantly their costs of doing so. Owners of declared SEPs gain the power to exclude and exploit because the process of standardization transforms what may have been only a marginally valuable patent into an essential piece of intellectual property that is needed by all firms seeking to supply standard-compliant products.⁹ Once an SSO adopts a standard that includes a particular technology to perform a function in the standard, it generally becomes impossible or prohibitively difficult for standard implementers to use alternative technologies to perform that function.¹⁰ In addition, once a standard is set, and especially as manufacturers invest in and start making products that comply with the standard, it

⁶ See, e.g., Richard Gilbert (2011), “Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations,” *Antitrust Law Journal*, 77(3):855-888 at 855; Carl Shapiro (2001), “Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting,” in Adam B. Jaffe, Josh Lerner, and Scott Stern, eds., *Innovation Policy and the Economy vol. 1*, Cambridge Mass. (The MIT Press), 119-150 at 138;

⁷ See, e.g., Carl Shapiro (2001), “Setting Compatibility Standards: Cooperation or Collusion?” in *Expanding the Bounds of Intellectual Property* (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman, and Harry First, eds.), Oxford University Press at 89.

⁸ See generally, Carl Shapiro (2001), “Setting Compatibility Standards: Cooperation or Collusion?” in *Expanding the Bounds of Intellectual Property* (Rochelle Cooper Dreyfuss, Diane Leenheer Zimmerman, and Harry First, eds.), Oxford University Press; Daniel J. Gifford (2003), “Developing Models for a Coherent Treatment of Standard-Setting Issues Under the Patent, Copyright and Antitrust Laws,” *IDEA: The Journal of Law and Technology*, 43(3): 331-94.

⁹ See, Daniel G. Swanson and William J. Baumol (2005), “Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power,” *Antitrust Law Journal*, 73(1), 1-58 at 7-10; *Apple Inc. v. Motorola, Inc.*, --- F. Supp. 2d ---, 2012 WL 2376664, at *11 (N.D. Ill. June 22, 2012)..

¹⁰ David J. Teece and Edward F. Sherry (2003), “Standards Setting and Antitrust,” *Minnesota Law Review* 87:1913-94 at 1936-1937.

becomes infeasible to revise the standard to avoid a SEP or to drop the functionality performed by the technology that is covered by the SEP. Because standardization eliminates alternatives, it confers market power on SEP owners *ex post* (post-standardization), relative to the *ex ante* (pre-standardization) situation. That is because the SEP owners' licensing behavior is no longer constrained by alternative technologies in the same technology market(s) or the SSO's option of not standardizing the function covered by the SEP owner's technology and permitting various technologies to continue to compete to perform the function.¹¹ *Ex post*, the competitive constraints on the SEP owner's licensing behavior are typically eliminated.¹²

9. A SEP holder that exercises in upstream technology markets its incremental market power from the standardization of its technology harms competition in downstream markets for products that comply with the standard: such conduct can deter entry, dampen innovation incentives, and raise the prices of products in those downstream markets, thereby harming consumers in those markets. In addition, there is an entire "ecosystem" of complementary products built around a standard and a standard-compliant product. When a SEP owner exercises its incremental market power gained from the standardization process, it can adversely affect competition in the entire ecosystem, and inhibit the development, manufacture, and sale not only of standard-compliant products but also of the complementary products that are used with them. With less robust competition and higher prices in markets for standard-compliant products, the demand for such complementary products is dampened. Moreover, when implementers of a standard are not adequately protected against future holdup, the evolution of the standard itself may be distorted, with a patented technology being less likely to be included in the standard, regardless of merit, out of fear of the impact of granting market power to the technology's owner. Distortions in the standard will have detrimental effects on the evolution of the ecosystem surrounding the standard.

10. Absent rules constraining the exercise of market power acquired through standardization, SSOs would be inhibited in promulgating effective standards, firms' would have diminished

¹¹ To be precise, prior to standardization, the "SEP owner" is only a *potential* SEP owner because its technology has not yet been included.

¹² Joseph Farrell, John Hayes, Carl Shapiro, and Theresa Sullivan (2007), "Standard Setting, Patents and Hold-up," *Antitrust Law Journal*, 74(3): 603-670 at 607-608; David J. Teece and Edward F. Sherry (2003), "Standards Setting and Antitrust," *Minnesota Law Review* 87:1913-94 at 1938.

incentives to invest in innovation related to standards-compliant products, and end product prices would rise. Ultimately, such conduct harms consumers.

C. FRAND COMMITMENTS CAN CONSTRAIN THE EXERCISE OF MARKET POWER, PROTECT THE STANDARD SETTING PROCESS, AND PRESERVE THE BENEFITS OF STANDARDS

11. To constrain the exercise of market power conferred on the SEP owner by standardization and avoid the threat to effective standards that patent holdup presents, most SSOs secure commitments from standard-setting participants to license their SEPs under fair, reasonable, and nondiscriminatory (“FRAND”) terms.^{13, 14} I believe the primary purpose of these FRAND requirements is to mitigate the deleterious economic consequences of opportunistic behavior that can be facilitated by standard setting, while maintaining powerful incentives for firms to innovate and participate in the standard-setting process and promoting broad adoption of the standard. In particular, among other objectives, FRAND commitments keep SEP holders from exercising pricing power other than that attributable to the *ex ante* advantage of the technologies covered by the SEPs over *ex ante* alternatives. To allow a SEP holder to exploit market power conferred by standardization rather than the intrinsic, *ex ante* value of its technology would be inefficient and would distort innovation incentives because it would provide a private reward that exceeded the benefit of the invention relative to the next-best alternatives.

12. ETSI’s IPR Policy, to which Samsung has pledged to adhere, requires that the SSO request that ETSI members that have patents that are potentially essential for the practice of a standard promise to license those patents on FRAND terms and conditions to anyone practicing the standard:

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

¹³ For a discussion of FRAND licensing requirements as a response to the hold-up problem, *see*, Carl Shapiro (2001), “Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting,” in Adam B. Jaffe, Josh Lerner, and Scott Stern, eds., *Innovation Policy and the Economy vol. 1*, Cambridge Mass. (The MIT Press), 119-150 at 128; Daniel G. Swanson and William J. Baumol (2005), “Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power,” *Antitrust Law Journal*, 73(1), 1-58 at 10-25.

¹⁴ If SEP owners are not willing to give FRAND assurances, their proprietary technologies may be excluded from the standard.

grant irrevocable licences on fair, reasonable and non-discriminatory [FRAND] terms and conditions under such IPR...The above undertaking may be made subject to the condition that those who seek licences agree to reciprocate.^{15, 16}

13. Such FRAND commitments promote investment and innovation by assuring potential licensees that they will be able to acquire licenses to declared SEPs on FRAND terms and that declared SEP holders cannot block them from implementing the standard.

14. In principle, a negotiation between an IP owner and a potential licensee before the standard is set would result in a fair and reasonable royalty. Although the exact royalty would be determined by the bargaining process between the two parties,¹⁷ it would fall somewhere in the range between the minimum that a willing licensor would accept and the maximum that a willing licensee would be willing to pay *ex ante*. The minimum royalty is defined by the licensor's reservation price: the smallest amount the licensor would be willing to accept rather than have its patented technology excluded from the standard. The maximum royalty that a licensee would be willing to pay is the *ex ante* value of the patented technology relative to alternatives. A royalty demand exceeding this maximum would cause the potential licensee to turn to the next best alternative.¹⁸ Critically, the range of fair and reasonable royalties assumes that neither party is locked in by virtue of having expended sunk costs that weaken its bargaining power.¹⁹

¹⁵ *ETSI IPR Policy*, § 6.1.

¹⁶ Although the ETSI IPR Policy does not mention injunctions or exclusion orders explicitly, Dr. Michael Walker, former chairman of the board of ETSI, testified at trial that they are inconsistent with a FRAND commitment. *See* Hearing Tr. 1350:9-20 (“It does not explicitly say no injunction. What it does say, though, is that the ...way you do secure your IPR, protect your IPR within ETSI is to seek a license with anyone who wishes to implement the standard under FRAND terms. So it is all about seeking a license, not preventing use of IPR, which an injunction is at the end of the day.”).

¹⁷ For instance, if a licensee holds SEPs of its own, it will be able to negotiate a cross license because the ETSI policy requires reciprocation on SEPs. The explicit royalty paid will appear to be lower than it otherwise would, although taking into account the payment in kind that comes in the form of a cross license to its own SEPs the total consideration should still fall within the reasonable range in order to be considered FRAND.

¹⁸ This same analysis helps in understanding the SSO's decision of whether to include in the standard a technology that an SSO member has declared to be essential for that technology. If the royalty demand of the IP owner exceeds the *ex ante* value of the IP, then the SSO would turn to its next best alternative and exclude the “overpriced” IP from the standard.

¹⁹ The licensor can also be held-up when, for example, licensees *ex post* collectively insist on a rate that is below what the licensor could have gotten before committing its intellectual property to the

D. THE AVAILABILITY OF EXCLUSION ORDERS DISTORTS THE *EX POST* BARGAINING PROCESS AND IS INCONSISTENT WITH AND UNDERMINES FRAND COMMITMENTS

15. Although the *ex ante* negotiating construct is useful for framing the issues, negotiations over SEP royalties commonly occur long after a standard is set and alternatives are eliminated. In that case, seeking (or threatening to seek) an exclusion order to evict a standard implementer from the market fundamentally distorts the bargaining process between the SEP holder and the potential licensee. From an economic perspective, seeking or threatening to seek an exclusion order (except in narrow circumstances I discuss below) is incompatible with the premise of FRAND. This is because the threat of exclusionary relief gives the SEP owner tremendous incremental bargaining power that it can use to extract non-FRAND royalties from a potential licensee. As described above, if the SEP owner and potential licensee engage in an *ex ante* negotiation, the potential licensee would be willing to pay no more than the *ex ante* value of the patented technology relative to the next best alternative. But when an exclusion order is available *ex post*, the SEP holder obtains bargaining leverage far beyond what it would have had before the standard was set.

16. When exclusionary relief is available on FRAND-encumbered patents, after promulgation of the standard, the SEP holder's and potential licensee's risks and costs from failing to agree on license terms are highly asymmetric. If an exclusion order is granted, the SEP owner stands to suffer only the financial losses of foregone licensing revenues. By contrast, the potential licensee faces possibly huge losses if its products are excluded from the market, which cannot be recouped even if the licensee is ultimately able to start selling its products. In the simplest case, under threat of exclusionary relief, the maximum royalty that a potential licensee would be willing to pay is capped not by the value of the SEP relative to *ex ante* alternatives but by the level of profits that the potential licensee would lose if it were forced to exit the production or sale of standard-compliant products.²⁰ The increase in the licensee's maximum

standard and agreeing to FRAND terms. The issue before the Commission is not about this concern.

²⁰ In a more complicated setting where there are several SEP holders, one can conceive of a bargaining situation in which each of the SEP holders will be able to extract only a fraction of the available quasi-rent, which is the difference between the licensee's potential aggregate profits exclusive of any recovery of sunk costs. See, Anne Layne-Farrar, A. Jorge Padilla, and Richard Schmalensee (2007), "Pricing Patents for Licensing In Standard Setting Organizations: Making Sense of FRAND Commitments," *Antitrust Law Journal*, 74:671-706.

willingness to pay as a result of the exclusion threat typically endows the SEP owner with substantial incremental bargaining power that it would not have if exclusionary relief were unavailable. As a result of this shift in bargaining power, assuming that the parties agree on license terms, these terms will be worse for the licensee – i.e., entail higher royalty rates – as compared to what they would have been absent the exclusion threat. Higher royalties ultimately harm consumers.²¹ In effect, using threat of exclusion, the SEP holder is able to appropriate for itself a portion of the profits that the potential licensee will lose if it is prevented from bringing its product to market. It bears emphasis, moreover, that in the case of the UMTS standard, if exclusion orders were available, standard implementers would face this hold up threat from dozens of holders of declared SEPs for the UMTS standard alone, not to mention that products implementing the UMTS standard typically comply with many other standards as well.

17. Because the threat of an exclusion order dramatically shifts bargaining power from the alleged infringer to the SEP holder, it is in the latter's interest to declare an offer it has made as being FRAND and to seek exclusionary relief if the offer is not accepted. When this threat pertains to FRAND-encumbered SEPs that the SEP owner has committed to license, the SEP holder's exclusionary power is not limited to the intrinsic value of its patented technology relative to alternative technologies pre-standardization. Rather, the SEP owner's enhanced exclusionary power reflects the market power that flows from the inclusion of its SEPs in the standard, i.e., the very incremental market power that the SEP owner agreed to forego when it made the FRAND commitment. Inclusion in the standard carries with it certain benefits and also costs: the obligation to license and concomitant curtailment of the right to seek exclusionary relief is one such cost, but that cost is entirely consistent with the overarching objectives of wide adoption of the standard while fostering innovation incentives for licensors and licensees.²²

18. Thus, a SEP holder's threat to use a potential licensee's refusal to pay the demanded royalty to prevent the potential licensee from practicing the standard is inherently inconsistent with a FRAND commitment from an economic perspective. The requirement to license all on FRAND terms would be meaningless if the SEP holder were allowed to obtain an exclusion

²¹ Consumers may be harmed even if higher royalties are not actually paid and passed through to them; if the potential licensee is evicted from the market, the consumers may be harmed by the loss of downstream competition.

²² Of course, with cross-licensing, a firm can be both a licensor and a licensee.

order evicting a potential infringer from the market based on a SEP owner's unilateral determination that the terms refused by the infringer were FRAND.

III. THE SECTION 337 PUBLIC INTEREST FACTORS MANDATE AGAINST EXCLUSIONARY ORDERS ON FRAND-COMMITTED PATENTS

19. In this section, I address from an economic perspective the issue raised in the Commission's Question 1, namely "which (if any) of the 337 (d)(1) public interest factors preclude issuance of ...an [exclusion] order" based on an infringement of a patent (or patents) that are subject to FRAND undertakings.

20. I understand that there are four public interest factors bearing on the question whether an exclusion order is appropriate. These four factors are: (1) "the public health and welfare"; (2) "competitive conditions in the United States economy"; (3) "the production of like or directly competitive articles in the United States"; (4) effects on "United States consumers." Economic analysis of these factors mandates against imposing exclusion orders on products that have that have been found to infringe FRAND-committed patents. The only possible exceptions, which I note below, do not apply in this proceeding.

21. At bottom, the fundamental rationale for this conclusion is that FRAND-encumbered patents are in relevant respects different from patents that are not subject to FRAND commitments. In particular, an owner of intellectual property that is subject to a FRAND commitment has voluntarily committed to restrict its intellectual property rights by agreeing to license to all standard implementers on fair, reasonable, and non-discriminatory terms – and to forego any right to exclude it might otherwise have had. This is in contradistinction to an owner of an unencumbered patent who is under no obligation to license its intellectual property and has the right to extract as high a royalty as the market will bear.

22. There are sound economic reasons why the FRAND commitment must be construed to bar exclusionary relief. First, including a patent in the standard typically dramatically changes the economic value of the patent. As I explained above, a patent covering technology offering only a minor technological benefit – and therefore of minor value to implementers relative to alternatives – becomes highly valuable once it is included in the standard (and technology alternatives have been eliminated). Standard-setting organizations have developed rules, such as the call for FRAND commitments, that aim to foster the development and broad acceptance of

the standard while affording the implementers protection from the dangers and adverse economic consequences of patent hold up that aims to extract incremental value attributable to standardization itself, while still allowing innovators to obtain compensation for the innate, *ex ante* value of their invention.

23. Second, the licensor has voluntarily agreed to declare its IP essential to the standard and voluntarily accepted the limitations on its licensing rights; that is, it has agreed to license to all implementers of the standard on fair, reasonable, and nondiscriminatory terms. Standard implementers, in turn, rely on that commitment and make investments in new and innovative products on the understanding that they will be entitled to a FRAND license and the declared SEP holder will not be able to prevent them from bringing their products to market. For a patent that is not FRAND-encumbered, by contrast, a product supplier makes its investment decisions without any expectation that the patent owner must license on FRAND terms and may not seek to exclude the supplier's products.

24. Third, in return for the FRAND limitation on its licensing rights, the patentee receives potentially highly valuable benefits from having its patents included in the standard. The patentee obtains the right to collect (FRAND) royalties on every sale of a product that implements the standard – which in the case of UMTS and many other standards represents a huge base of sales on which to obtain royalties. In addition, by participating in the standard-setting process, the patentee enjoys increased influence on the evolution of the standard in ways that may benefit its portfolio of patents. Furthermore, the patentee may receive a valuable “first-mover” advantage because it is positioned to commercialize quickly downstream products that incorporate its (now standardized) technology. It is because it receives these and other benefits that industry participants are willing voluntarily to participate in the standard setting process and submit their technology for inclusion in industry standards. In doing so, the would-be SEP holder willingly accepts that its compensation from standard implementers will be limited to FRAND royalties and that it will have no right to keep innovators from bringing to market products that practice the standard (and hence its patents).

25. Let me now point to substantial errors in Dr. Layne-Farrar's economic analysis that lead her wrongly to conclude that exclusion orders based on infringement of FRAND-encumbered

patents can be consistent with the public interest factors.²³ In supporting her stance, Dr. Layne-Farrar relies heavily on her concerns about “reverse hold-up.” As she defines it, reverse hold-up occurs when a potential licensee refuses to accept a license offered at FRAND rates, forcing the SEP owner to accept final royalty rates that are below FRAND. (Recall that the usual concern is that the licensee will be forced to accept rates that are potentially significantly above the FRAND benchmark.) Dr. Layne-Farrar describes the risk of reverse holdup as “equally significant” as the risk of patent holdup by a SEP holder, and opines that exclusion orders are an “important tool” to give SEP holders some recourse against recalcitrant potential licensees. But Dr. Layne-Farrar both overstates the harms and understates the efficacy of the remedies available to a SEP holder.

26. Much of Dr. Layne-Farrar’s analysis is grounded in drawing a false equivalence between the bargaining dynamics of the licensing of SEPs and non-SEPs. Unlike in the case of SEPs, where industry and implementers are locked in to the standardized technology, royalties for unencumbered patents are constrained by the implementer’s option to design around the patent and use an alternative technology or drop a feature altogether without risking the loss of standards-compliance.” Dr. Layne-Farrar’s analysis of “reverse hold-up” totally misses the mark in ignoring the fact that some or all of the hold-up value of the SEP stems from its inclusion in the standard and not from any intrinsic value of the relevant intellectual property. Where non-SEPs are involved, market forces can still constrain the patent owner’s hold-up power. For SEPs, however, neither easy design-around, nor switching to an alternative technology, nor dropping the feature is readily feasible. As a result, relative to non-SEPs, an SEP owner has more leverage from threatening exclusion *and* the firm implementing the patent has a weaker resistance point. Because the hold-up power of a SEP is linked to the sunk costs²⁴ incurred by the implementer and other industry participants, in effect, the conversion of an ordinary patent into a SEP can vastly increase the costs associated with avoiding practicing the infringing IP from the cost of designing-around to the cost of exiting.²⁵

²³ I do not attempt to comment here on every flaw in Dr. Layne-Farrar’s analysis, only those that undermine her conclusions most significantly.

²⁴ “Sunk costs are entry or exit costs that cannot be recovered outside the relevant market.” U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines* at 16 (Aug. 19, 2010).

²⁵ This point can best be illustrated with an example. Assume that the SEP at issue covers a technology that can be easily removed from the device. The one-time cost of removing the

27. Dr. Layne-Farrar’s conclusions also rely on her “layman’s understanding of patent licensing negotiations and patent enforcement” for SEPs. But her understanding is wrong in critical respects that further undermine her attempt to equate SEPs and non-SEPs. For example, she claims that the fact standard implementers can sue over alleged non-FRAND offers “provides real teeth to FRAND commitments.”²⁶ But the right to litigate, of course, does nothing to remove or mitigate the hold-up power that the SEP holder can exercise by threatening to exclude the implementer’s products. And an implementer that sues a declared SEP holder must assume potentially very substantial litigation expenses, not to mention the risk of a court setting a higher rate than it could have negotiated before the trial. Second, she claims that implementers have the option to “invent around” a SEP.²⁷ But a SEP, by definition, is a patent that an implementer must practice to implement a standard and cannot typically be designed around (if it could ever be designed around at all). Third, Dr. Layne-Farrar claims that an implementer can omit a patented feature if it is commercially unimportant.²⁸ But it generally is not possible to omit technology covered by a SEP from standard-compliant products because such products must interoperate with other products and networks that incorporate the technology; even if the product would be interoperable without the SEP, the commercial success of non-standard-compliant products is highly doubtful. Fourth, she claims that unlicensed implementers lack substantial sunk costs in their products.²⁹ But implementers, of course, typically incur large sunk costs in designing and marketing standard-compliant products. There is no reason to assume that these costs cannot be much higher than the sunk R&D expenditures of the patent owner on development of the technology at issue.

technology and replacing it with another technology is \$1 million. This puts a limit on the hold-up power in a typical, non-SEP setting. Now, because the technology is part of the standard, the associated intellectual property is a SEP. As a result, an infringer would have to forgo the net present value of profits from the device if it does not gain the license and is forced to exit since it simply cannot avoid infringing the SEP while still implementing the standard. Hence the costs of refusing a license are now elevated to the level of profits that would be lost (gross of license fees) if the firm were to exit. This figure could vastly exceed the \$1 million in redesign and replacement costs instanced earlier. As a result, the hold-up power of the identical patent – which represents the same innate invention value – is vastly elevated by inclusion in the standard.

²⁶ *Layne-Farrar Declaration*, ¶ 35.

²⁷ *Layne-Farrar Declaration*, ¶ 39.

²⁸ *Layne-Farrar Declaration*, ¶ 39.

²⁹ *Layne-Farrar Declaration*, ¶ 39.

28. In addition, Dr. Layne-Farrar argues that, absent exclusionary relief, there are “litigation asymmetries” that favor the potential licensee.³⁰ But as Judge Posner's recent decision in *Apple Inc. v. Motorola Inc.* correctly explains, absent the threat of exclusionary relief there are no such asymmetries. (Rather, as I have explained, it is the availability of such exclusionary relief that creates bargaining asymmetries.) To use Judge Posner’s example, suppose that the maximum FRAND royalty for a particular SEP would be \$10 million. If the patentee had to sue to obtain that \$10 million, it would incur substantial litigation costs. Thus, absent the threat of an injunction, a potential licensee might agree to pay \$10 million less anticipated litigation costs.³¹ “Of course litigation would also be costly for [the licensee], and this might induce it to pay the \$10 million rather than fight.”³² And in the litigation, the licensee risks incurring not only costs, but also a higher royalty than it could have bargained for without litigation.³³ Thus, absent the threat of exclusionary relief both the SEP holder and the potential licensee have strong incentives to reach agreement on FRAND terms, and there is no simply reason to believe that potential licensee enjoys a superior bargaining position.

29. Moreover, contrary to Dr. Layne-Farrar’s contention, a potential licensee that obtains an unfavorable ruling on a FRAND rate may suffer harm going forward that extends beyond its royalty rate for the patents at issue. Notwithstanding Professor Layne-Farrar’s assertion, it is not typically possible to invent around SEPs in response to an unfavorable ruling. In any case, I and others have proposed that an implementer who refuses to pay FRAND royalties as set by a court could be subject to an exclusion order – so the SEP holder has recourse once a court (not just the SEP holder) has declared a royalty rate to be FRAND. In addition, other SEP holders might try to use the unfavorable FRAND determination against the potential licensee in future disputes over FRAND royalties by arguing that the determination sets a favorable benchmark to support a high royalty rate for their own SEPs.

30. Finally, Dr. Layne-Farrar argues that exclusion orders should be broadly available for FRAND-encumbered patents because “an exclusion order must be deemed warranted [under the

³⁰ *Layne-Farrar Declaration*, ¶¶ 37-42.

³¹ *Apple Inc. v. Motorola, Inc.*, F. Supp. 2d, 2012 WL 2376664, at *12-13 (N.D. Ill. June 22, 2012).

³² *Id.* at *13.

³³ *Id.* at *12.

public interest factors] before it will be granted.”³⁴ But Dr. Layne-Farrar’s conception of when an exclusion order might be warranted misapprehends the proper role of such orders. She argues throughout her declaration that exclusion orders must be available to constrain the “reverse holdup” that would otherwise result in SEP holders receiving unreasonably low royalties for their FRAND-encumbered patents. But under *eBay* (on which Dr. Layne-Farrar relies), as far as I understand, the purpose of exclusionary relief is *not* to arm the patentee with bargaining leverage – but to provide the patentee adequate relief when an award of (properly calculated) damages cannot accomplish that objective (and other requirements are satisfied). As Judge Posner points out, U.S. courts do not grant injunctions to give parties additional bargaining power to enforce a claimed right: “You can’t obtain an injunction for a simple breach of contract on the ground that you need the injunction to pressure the defendant to settle your damages claim on terms more advantageous to you than if there were no such pressure.”³⁵

31. At bottom, Dr. Layne-Farrar’s proposal to allow exclusion orders would grant a SEP holder the right to exercise market power conferred through the standardization process and extract more than the rate that is consistent with the intrinsic value of the intellectual property contributed to the standard. That intrinsic value is best gauged by what the parties would have negotiated before the intellectual property is “baked into” the standard. Dr. Layne-Farrar proposes that exclusion orders only be allowed—not that they be automatic. But just the threat of an exclusion order, as I described above, dramatically alters the bargaining positions of the SEP holder and the potential licensee and facilitates the successful exercise of market power. Even if the matter never ends up in litigation, the threat of an exclusion order is sufficient to result in competitive harm if it leads to a rate that is not consistent with FRAND principles.

32. Although Dr. Layne-Farrar posits that reverse holdup is a serious and otherwise irremediable problem, but for the ability to seek and obtain an exclusion order, as I have explained, the SEP holder in fact has the right to litigate against a reluctant licensee and to

³⁴ *Layne-Farrar Declaration*, ¶ 50. Dr. Layne-Farrar also claims that exclusion orders can be appropriate because “[e]xclusion orders can be stayed” and “the presence of a pending injunction can be a force for a reasonable settlement with an otherwise unwilling licensee.” (*Id.* at 50.) But a SEP owner’s use of a stayed exclusion as a tool for bargaining leveraging is, of course, no less contrary to the public interest than the use of the threat of an exclusion order to gain bargaining leverage.

³⁵ *Apple Inc. v. Motorola, Inc.*, F. Supp. 2d, 2012 WL 2376664, at *12-13 (N.D. Ill. June 22, 2012).

thereby obtain precisely what it is owed: a FRAND royalty as determined by the Court, but not more than that. Dr. Layne-Farrar cautions that, “We must be careful not to ‘solve’ one potential problem by increasing the odds that another potential problem occurs.” I agree. And in this matter, Dr. Layne-Farrar’s proposal to “solve” the reverse holdup problem by allowing a SEP holder to remove the constraints of the FRAND commitment is a fine example of what she cautions against.

33. I now analyze why imposing exclusion orders on FRAND-encumbered would contravene the public interest factors defined in Section 337 of the Act. To be clear, I am not arguing that such exclusion orders should never be allowed. I believe that exclusion orders may be appropriate when the potential licensee is unwilling to pay a royalty that a court or arbitrator has determined to be FRAND or possibly when a US court would lack jurisdiction over an infringer of a SEP. Other than in these limited circumstances, exclusion orders for SEPs are inconsistent with the public interest factors.

A. PUBLIC INTEREST FACTOR 2: “COMPETITIVE CONDITIONS IN THE U.S.”

34. The interests of the United States are served by fostering a competitive market place in products that implement the standard as well as an environment that is conducive to innovation of all kinds. This interest is obviously relevant with respect to extant products that exclusion orders may evict from the market. Even if there are other products in the U.S. market, there is a real danger that the exclusion order removes from the market a firm that is innovative and that generates significant benefits to consumers in the form of innovative products developed on top of the standard. At least as important, however, are the longer-term harms to the U.S. marketplace from granting exclusionary orders based on FRAND-committed patents. As I have discussed, industry standards greatly enhance firms’ incentives to invest in proprietary features and designs for standard-compliant products and lead to very substantial dynamic competition that benefits U.S. consumers. Indeed, this type of innovation is the driver behind the fast-growing telecommunications and mobile computing markets.

35. If firms cannot develop standards-compliant products free from the threat that declared SEP owners will be able to exclude their products from the market, however, that will reduce their incentives to innovate. Potential innovators will face the prospect that their new products will be subject to taxation from (often dozens) of declared-essential patent holders that can

threaten to exclude their products and thereby extort non-FRAND royalties. The mere threat of the availability of exclusion orders through the Section 337 process will undermine firms' incentives to invest in research and development, to the great detriment of the U.S. marketplace and consumers. U.S. consumers will suffer because the available products are less innovative, cost more, and offer lower quality and less variety than would have been otherwise available to them.

36. Dr. Layne-Farrar wrongly asserts that if SEP holders are unable to obtain exclusionary relief, innovative firms may be reluctant to join SSOs and may be reluctant to invest in new technologies that would enhance the value of the current standard and/or advance the development of the next generation of the standard. Her concerns are unfounded in my view. First, there are standards organizations that require that owners of SEPs license them for free. (This implies that they have to monetize their innovations through other means, such as by offering superior products that embody the standard.) There is no evidence that I am aware of that technological progress has suffered in the markets and industries linked to these standard-setting organizations. Moreover, as I explained above, ETSI and other SSOs have functioned very well and produced great benefits to industry with rules that required SEP holders to accept FRAND royalties as their only compensation for the practice of their patents.

37. Second, just because exclusion orders would not be allowed (absent extraordinary circumstances inapplicable here) does not mean that innovators will not be able to earn a reasonable rate of return on their innovations and thus will be dis-incentivized from further investments in technology. Indeed, there are many different strategies for "monetizing" the return on investment in R&D, such as through sales of products or FRAND license fees. As I have discussed, when a technology is incorporated into a widely-adopted industry standard (like UMTS), holders of declared SEPs gain an extremely broad base of standard-compliant products on which to assess FRAND royalties. That provides very strong incentives to participate in standard setting and produce inventions that get included in industry standards.

38. Third, and perhaps most important, prohibition of exclusion orders simply means that these SEP holders will not be able to earn incremental returns on their investments from U.S. firms and consumers that are not attributable to the innovative value of their patents but, rather, are attributable to the ability to hold up the implementers for supra-competitive license fees. Stated another way, Dr. Layne-Farrar does not explain why U.S. licensees and consumers should

be taxed with excessive rates so as to deliver above-competitive returns to innovators who have voluntarily agreed to license their innovations on FRAND rates in the first place. A prohibition on exclusion orders does not deprive the innovators of the return that is consistent with the economic value of their contribution to the standard. On the contrary, properly developed FRAND rates aim to ensure such a return.

39. It is also important to recognize that, for vertically-integrated declared SEP holders like Samsung, the excessive, non-FRAND returns from availability of exclusionary orders would not be limited to hold-up value in patent licensing negotiations. Samsung would also receive the margins on the incremental sales of Samsung devices that would now be facing less competition in the U.S. marketplace were Apple's products to be excluded. In fact, it is well-known in industrial organization economics that a vertically integrated firm – such as Samsung – may have incentives to disadvantage its rival (or rivals) that require the firm's component(s). In the instant case, the relevant component is not a physical item but rather access to the patent that is claimed to be essential to a standard. Thus, besides trying to extract above-FRAND rates for its self-declared SEPs, Samsung has additional reasons to exclude Apple's devices from the U.S. market, namely, to capture the benefit from diversion of Apple's sales to Samsung's competing devices. These increased margins and the resulting downstream price increases – which come at the expense of U.S. consumers – are another critical form of harm to U.S. competitive conditions that would come in this case from granting Samsung an exclusion order based on declared SEPs.

40. Finally, the owner of FRAND-encumbered SEPs, armed with the ability to obtain an exclusion order, can also use that threat to try to gain access to proprietary, differentiating innovation held by the (alleged) infringer. This is a relevant consideration because, when assessing whether the offer to license is consistent with FRAND, it is not necessarily sufficient to examine only the level of the demanded license fee – it is also important to consider other elements of the offer, such as whether the license offer is conditioned on access to the potential licensee's proprietary, differentiating patents. These patents are different from SEPs inasmuch as their owner is under no compulsion to license them to anyone, especially not to a competitor. In contradistinction, the owner of a SEP has made an irrevocable commitment to license its IP to all firms, including actual and potential competitors. Extracting access to differentiating IP can have detrimental consequences on the ability of firms to compete effectively against owners of the FRAND-encumbered SEPs. Given that one purpose of a standard is to create a common

platform on which rivals can build their standard-compliant but differentiated products, when the ability to sustain differentiation is undermined, the competitive advantage can be lost, possibly irreparably. Once again, this will diminish incentives for innovators to invest in new products that bring massive benefits to consumers and thereby harm competitive conditions in the United States.

B. PUBLIC INTEREST FACTOR 3: “THE PRODUCTION OF LIKE AND DIRECTLY COMPETITIVE PRODUCTS IN THE UNITED STATES”

41. An exclusion order can have potentially devastating impact on the manufacture and sale of directly competitive products in the U.S. As discussed with respect to Public Interest Factor (2), an exclusion order would undermine the FRAND licensing regime and severely damage incentives to innovate for products that comply with industry standards. Permitting declared SEP holders to use threats of product exclusion based on U.S. patents to extract non-FRAND royalties will lead to lower levels of R&D surrounding and production of wireless devices in the United States. Although an exclusion order might be in the public interest if the SEP holder were likely to suffer an irreparable damage if the infringing products are not stopped from coming into the country rapidly, such irreparable damage is not plausible in the case of SEPs. The reason is simple: by agreeing to license its patents on FRAND terms, the declared SEP holder has willingly agreed to accept a FRAND license fee as full compensation for use of the its intellectual property by other firms – rivals or not. Consequently, the damage (if any) from an infringement can be readily converted into a dollar award. By its own admission, nothing more is required to make the SEP holder completely whole for the use of its patents by a standard implementer.

C. PUBLIC INTEREST FACTOR 4: EFFECTS ON “UNITED STATES CONSUMERS”

42. The effects on U.S. consumers from an exclusion order against Apple’s products would be plainly negative for at least two reasons. First, as noted, there is a potential for prices to increase following a removal from the marketplace of desirable products, like Apple’s. Second, even if prices do not increase, the range of choices would be narrowed as a consequence of the exclusion of Apple’s products.

43. Moreover, in my view, it is appropriate to consider not only the short-term impact from granting an exclusion order but also a long-term impact on consumers that accounts for the reduced incentives of firms to develop new intellectual property and products. I already

indicated that an exclusion order is likely to have adverse effects on the economic incentives of the alleged infringer and other innovators, especially if it forces them to accept rates (and other terms) that are not consistent with FRAND principles and which include a mark-up for the exclusionary market power embodied in a SEP. In my view, there is no reason why a negotiation between a licensor and a licensee free of the threat of market eviction should lead to a license fee that does not recognize the full economic value of the invention before the standard is set. If the rate is set by an impartial tribunal, the resulting rate should (on average) also reflect the FRAND principles and thus not leave the licensor undercompensated.³⁶ In sum, it is wrong to conclude that licensors of FRAND-encumbered SEPs need the threat of exclusion order (or injunctive relief) to obtain rates that compensate them fairly for their net economic contribution to the standard.

IV. CONCLUSION

44. Collaborative standard setting offers potentially great benefits, but also can endow SSO participants with market power that is attributable to the fact of standardization itself, not to the intrinsic value of their inventions. If unconstrained, this market power may be exercised to the detriment of consumers and innovators. ETSI (and other SSOs) encourage FRAND commitments as a means of restraining SEP declarants from exercising the incremental market power conferred by standardization, thereby securing the benefits from their standard-setting efforts. Actions that weaken or undermine FRAND commitments (that SSO participants voluntarily undertook) threaten the public interest by leading to increased prices and/or excluding from the market products that consumers highly value and diminishing incentives to engage in innovation in the United States and elsewhere. Exclusion orders not only would weaken or undermine FRAND commitments by increasing dramatically the bargaining power of SEP holders in negotiations with potential licensees, but also are unnecessary for the SEP holder to obtain the royalty that it has already acknowledged is acceptable and full compensation for its contribution to the standard, namely, a FRAND royalty. Allowing exclusion orders would lead to the very patent holdup that FRAND commitments are designed to avoid, harming consumers and damaging innovation incentives, and thus is inconsistent with the public interest.

³⁶ As I explained above, Dr. Layne-Farrar overstates the ability of potential licensees to design around or avoid SEPs, which undermines her argument that even if courts get the FRAND rate right “on average,” SEP holders can be harmed by court-determination of FRAND rates.

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Exhibit 1: Curriculum Vitae of Janusz A. Ordover

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EDUCATION

- 1968-1973 Columbia University, New York, New York
Graduate Department of Economics and European Institute of the School of International Affairs
Doctoral Dissertation: Three Essays on Economic Theory (May 1973). Ph.D 1973.
- 1967-1968 McGill University, Montreal, Canada
Departments of Economics and Political Science
- 1963-1966 Warsaw University, Warsaw, Poland
Department of Political Economy. B.A. (equiv.), 1966.

HONORS

- 2011 "The Economist of the Year 2010" voted by the Global Competition Review
- 1973 Columbia University: Highest distinction for the doctoral dissertation
- 1971-1972 Columbia University: Honorary President's Fellow
- 1969-1971 Columbia University: President's Fellow
- 1967-1968 McGill University: Honors Student
- 1964, 1965 Warsaw University: Award for Academic Achievement, Department of Political Economy
- Who's Who in the World
Who's Who in America
Who's Who in the East

PROFESSIONAL EXPERIENCE

- June 1982 - present Professor of Economics
Department of Economics, New York University, New York, New York
- Sept. 1996 - Aug. 2001 Director of Masters in Economics Program
Department of Economics, New York University, New York, New York

Summer 1996-2000 Lecturer
International Program on Privatization and Reform
Institute for International Development, Harvard University, Cambridge, Massachusetts

Aug. 1991 - Deputy Assistant Attorney General for Economics
Oct. 1992 Antitrust Division
United States Department of Justice, Washington, D.C.

Sept. 1989 - Visiting Professor of Economics
July 1990 School of Management, Yale University, New Haven, Connecticut

Lecturer in Law
Yale Law School

Mar. 1984 - Visiting Professor of Economics
June 1988 Universita Commerciale "Luigi Bocconi", Milan, Italy

June 1982 - Director of Graduate Studies
Feb. 1985 Department of Economics, New York University

Sept. 1982 - Adjunct Professor of Law (part-time)
June 1986 Columbia University Law School, New York, New York

Feb. 1982 - Acting Director of Graduate Studies
June 1982 Department of Economics, New York University

June 1978 - Associate Professor of Economics
June 1982 Department of Economics, New York University

Sept. 1979 - Lecturer in Economics and Antitrust
May 1990 New York University Law School

Sept. 1977 - Member, Technical Staff
June 1978 Bell Laboratories, Holmdel, New Jersey

Associate Professor of Economics
Columbia University

Visiting Research Scholar
Center for Law and Economics, University of Miami, Miami, Florida

Sept. 1973 - Assistant Professor of Economics
Aug. 1977 New York University

Summer 1976 Fellow, Legal Institute for Economists,
Center for Law and Economics, University of Miami

Summer 1976 Visiting Researcher Bell Laboratories, Holmdel, New Jersey

OTHER PROFESSIONAL ACTIVITIES

2011 Organizer, Session on the 2010 Agencies Horizontal Merger Guidelines, 2011 Spring Meetings, Antitrust Section, American Bar Association, Washington DC

2010 – present Member, ABA Section of Antitrust Law, Economics Task Force

2006 - present Special Consultant, Compass Lexecon (formerly Compass)/FTI Company, Washington, D.C.

2003 - 2006 Director, Competition Policy Associates, Inc. ("Compass"), Washington, D.C.

1997 - 1999 Consultant, Inter-American Development Bank, Washington, D.C.

1997 - 2009 Board of Editors, *Antitrust Report*

1995 - 2001 Consultant, The World Bank, Washington, D.C.

1998 - 2004 Senior Consultant
Applied Economic Solutions, Inc., San Francisco, California

1995 - 2000 Senior Affiliate
Cornerstone Research, Inc., Palo Alto, California

various Testimony at Hearings of the Federal Trade Commission

1994 - 1996 Senior Affiliate
Law and Economics Consulting Group, Emoryville, California

1994 - 2000 Senior Affiliate
Consultants in Industry Economics, LLC, Princeton, New Jersey

1993 - 1994 Director
Consultants in Industry Economics, Inc., Princeton, New Jersey

1992 - 1993 Vice-Chair (*pro tempore*)
Economics Committee, American Bar Association, Chicago, Illinois

1990 - 1991 Senior Consultant
1992 - 1995 Organization for Economic Cooperation and Development, Paris, France

1991 Member
Ad hoc Working Group on Bulgaria's Draft Antitrust Law
The Central and East European Law Initiative
American Bar Association

1990 - 1991 Advisor
Polish Ministry of Finance and Anti-Monopoly Office
Warsaw, Poland

1990 - 1991 Member
Special Committee on Antitrust
Section of Antitrust Law, American Bar Association

1990 - 1991 Director and Senior Advisor
Putnam, Hayes & Bartlett, Inc., Washington, D.C.

1990 - 1996 Member
Predatory Pricing Monograph Task Force
Section of Antitrust Law, American Bar Association

1989 Hearings on Competitive Issues in the Cable TV Industry
Subcommittee on Monopolies and Business Rights of the Senate Judiciary Committee
Washington, D.C.

1989	Member EEC Merger Control Task Force, American Bar Association
1988 - present	Associate Member American Bar Association
1987 - 1989	Adjunct Member Antitrust and Trade Regulation Committee, The Association of the Bar of the City of New York
1984	Speaker, "Industrial and Intellectual Property: The Antitrust Interface" National Institutes, American Bar Association, Philadelphia, Pennsylvania
1983 - 1990	Director Consultants in Industry Economics, Inc
1982	Member Organizing Committee Tenth Annual Telecommunications Policy Research Conference, Annapolis, Maryland
1981	Member Section 7 Clayton Act Committee, Project on Revising Merger Guidelines American Bar Association
1980	Organizer Invited Session on Law and Economics American Economic Association Meetings, Denver, Colorado
1978 - 1979	Member Department of Commerce Technical Advisory Board Scientific and Technical Information Economics and Pricing Subgroup
1978 – present	Referee for numerous scholarly journals, publishers, and the National Science Foundation

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Economic Association
American Bar Association

PUBLICATIONS

A. Journal Articles

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"Costly Litigation and the Tort Law: Single Activity Accidents," *Journal of Legal Studies*, June 1978, 243-261.

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B. Books and Monographs

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Obstacles to Trade and Competition, with L. Goldberg, OECD, Paris, 1993.

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C. Book Chapters

"Coordinated Effects," chap. 27, in *Issues in Competition Law and Policy*, vol. 2, American Bar Association, 2008, 1359-1384.

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"Sustainable Privatization of Latin American Infrastructure: The Role of Law and Regulatory Institutions," with Evamaria Uribe, Chap. 1 in F. Basanes, E. Uribe, R. D. Willig (eds.), *Can Privatization Deliver? Infrastructure for Latin America*, The Johns Hopkins U. P. for Inter-American Development Bank, 1999, 9-32.

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"Competition Policies for Natural Monopolies in a Developing Market Economy," with Russell Pittman, *Butterworth's Trade and Finance in Central and Eastern Europe*, Butterworth Law Publishers Ltd., 1993, 78-88, Reprinted in *Journal for Shareholders* (published by the Russian Union of Shareholder), Moscow, January 1993, 33-36; *Versenyfelügyeleti Ertesito* (Bulletin of Competition Supervision), Budapest, vol. 3, no. 1-2, January 1993, 30-41; *Narodni Hospodarstvi* (National Economy), Prague; *ICE: Revista de Economia*, No. 736 (December 1994) (in Spanish), 69-90.

"Antitrust: Source of Dynamic and Static Inefficiencies?" with W.J. Baumol, in T. Jorde and D. Teece (eds.), *Antitrust, Innovation, and Competitiveness*, Oxford University Press, 1992, 82-97. Reprinted in "The Journal of Reprints for Antitrust Law and Economics," vol. 26, no. 1, 1996.

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"The Department of Justice 1988 Guidelines for International Operations: An Economic Assessment," with A.O. Sykes, in B. Hawk (ed.), *European/American Antitrust and Trade Laws*, Matthew Bender, 1989, 4.1-4.18.

"Predation, Monopolization, and Antitrust," with G. Saloner, in R. Schmalensee and R.D. Willig (eds.), *Handbook of Industrial Organization*, vol. 1, North Holland, 1989, 538-596.

"Supervision Technology, Firm Structure, and Employees' Welfare," in *Prices, Competition and Equilibrium*, M. Peston and R.E. Quandt (eds.), Philip Allan Publishers, Ltd., 1986, 142-163.

"Perspectives on Mergers and World Competition," with R.D. Willig, in *Antitrust and Regulation*, R. Grieson (ed.), Lexington Books, 1986, 201-218.

"Transnational Antitrust and Economics," in *Antitrust and Trade Policies in International Trade*, B. Hawk (ed.), Matthew Bender, 1985, 233-248.

"Pricing of Interexchange Access: Some Thoughts on the Third Report and Order in FCC Docket No. 78-72," in *Proceedings of the Eleventh Annual Telecommunications Policy Research Conference*, Vincent Mosco (ed.), ABLEX Publishers, 1984, 145-161.

"Non-Price Anticompetitive Behavior by Dominant Firms Toward the Producers of Complementary Products," with A.O. Sykes and R.D. Willig, in *Antitrust and Regulation: Essays in Memory of John McGowan*, F. Fisher (ed.), MIT Press, 1985, 315-330.

"Local Telephone Pricing in a Competitive Environment," with R.D. Willig, in *Regulating New Telecommunication Networks*, E. Noam (ed.), Harcourt Brace Jovanovich, 1983, 267-289.

"An Economic Definition of Predatory Product Innovation," with R.D. Willig, in *Strategy, Predation and Antitrust Analysis*, S. Salop (ed.), Federal Trade Commission, 1981, 301-396.

"Marginal Cost," in *Encyclopedia of Economics*, D. Greenwald (ed.), McGraw-Hill, 2nd ed. 1994, 627-630.

"Understanding Economic Justice: Some Recent Development in Pure and Applied Welfare Economics," in *Economic Perspectives*, M. Ballabon (ed.) Harwood Academic Publishers, vol. 1, 1979, 51-72.

"Problems of Political Equilibrium in the Soviet Proposals for a European Security Conference," in *Columbia Essays in International Affairs*, Andrew W. Cordier (ed.) Columbia University Press, New York, 1971, 1951-197

D. Other Publications

"Editorial: Thinking about coordinated effects," with Jith Jayaratne, *Concurrences 3-2012*, forthcoming.

"The 2010 Horizontal Merger Guidelines: A Static Compass in a Dynamic World," with Jay Ezrielev, *Antitrust Source*, October 2010, available at www.antitrustsource.com

"The Economics of Price Discrimination," with Doug Fontaine and Greg Shaffer, in *The Economics of the Internet, The Vodafone Policy Paper Series*, No. 11, April 11, 2010, 27-51.

"How Loyalty Discounts Can Perversely Discourage Discounting: Comment," with Assaf Eilat, et al, *The CPI Antitrust Journal*, April 2010 (1).

"Economic Analysis in Antitrust Class Certification: *Hydrogen Peroxide*," with Paul Godek, *Antitrust Magazine*, vol. 24, No. 1, Fall 2009, pp. 62-65.

"Comments on Evans & Schmalensee's 'The Industrial Organization of Markets with Two-Sided Platforms', *Competition Policy International*, vol. 3(1), Spring 2007, 181-90.

"Safer Than A Known Way? A Critique of the FTC's Report on Competition and Patent Law and Policy," with I. Simmons and D. A. Applebaum, *Antitrust Magazine*, Spring 2004, 39-43.

"Predatory Pricing," in Peter Newman (ed.), *The New Palgrave Dictionary of Economics and the Law*, Grove Dictionaries, New York, 1999. Revised in *The New Palgrave Dictionary of Economics*, 2nd edition, S. Durlauf and L. Blume (editors) (forthcoming 2007).

Book review of L. Philips, *Competition Policy: A Game Theoretic Perspective*, reviewed in *Journal of Economic Literature*, vol. 35, No.3, September 1997, 1408-9.

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EXHIBIT 2

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

APPLE INC., A CALIFORNIA CORPORATION,)	C-11-01846 LHK
)	
)	SAN JOSE, CALIFORNIA
PLAINTIFF,)	
)	AUGUST 16, 2012
VS.)	
)	VOLUME 10
SAMSUNG ELECTRONICS CO., LTD., A KOREAN BUSINESS ENTITY; SAMSUNG ELECTRONICS AMERICA, INC., A NEW YORK CORPORATION; SAMSUNG TELECOMMUNICATIONS AMERICA, LLC, A DELAWARE LIMITED LIABILITY COMPANY,)	PAGES 2966-3386
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DEFENDANTS.)	

TRANSCRIPT OF PROCEEDINGS
BEFORE THE HONORABLE LUCY H. KOH
UNITED STATES DISTRICT JUDGE

APPEARANCES ON NEXT PAGE

OFFICIAL COURT REPORTER: LEE-ANNE SHORTRIDGE, CSR, CRR
CERTIFICATE NUMBER 9595
IRENE RODRIGUEZ, CSR, CRR
CERTIFICATE NUMBER 8074

1 A P P E A R A N C E S :

2 FOR PLAINTIFF MORRISON & FOERSTER
APPLE: BY: HAROLD J. MCELHINNY
3 MICHAEL A. JACOBS
 RACHEL KREVANS
4 425 MARKET STREET
 SAN FRANCISCO, CALIFORNIA 94105

5
6 FOR COUNTERCLAIMANT WILMER, CUTLER, PICKERING,
APPLE: HALE AND DORR
7 BY: WILLIAM F. LEE
 60 STATE STREET
8 BOSTON, MASSACHUSETTS 02109

9 BY: MARK D. SELWYN
10 950 PAGE MILL ROAD
 PALO ALTO, CALIFORNIA 94304

11 FOR THE DEFENDANT: QUINN, EMANUEL, URQUHART,
 OLIVER & HEDGES
12 BY: CHARLES K. VERHOEVEN
 50 CALIFORNIA STREET, 22ND FLOOR
13 SAN FRANCISCO, CALIFORNIA 94111

14 BY: VICTORIA F. MAROULIS
 KEVIN P.B. JOHNSON
15 555 TWIN DOLPHIN DRIVE
 SUITE 560
16 REDWOOD SHORES, CALIFORNIA 94065

17 BY: MICHAEL T. ZELLER
 WILLIAM C. PRICE
18 865 SOUTH FIGUEROA STREET
 10TH FLOOR
19 LOS ANGELES, CALIFORNIA 90017

20

21

22

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1 IF THERE'S ANYTHING LIKE THAT, WE'LL FIX IT.

2 Q SIR, THE ERROR OCCURRED BECAUSE YOU DID NOT
3 PERFORM YOUR USUAL QUALITY CONTROL PROCEDURES FOR
4 THE REPORT; CORRECT?

5 A RIGHT. WE WERE UNABLE TO DO THAT BECAUSE OF
6 THE LATE PRODUCTION OF APPLE.

7 Q WELL, ISN'T IT TRUE, SIR, THAT THE REASON YOU
8 DID NOT CONDUCT YOUR USUAL QUALITY CONTROL
9 PROCEDURE IS BECAUSE YOU RAN OUT OF TIME AND HAD
10 OTHER COMMITMENTS?

11 A THAT'S THE -- THAT'S EXACTLY WHAT I JUST SAID.

12 MR. SELWYN: THANK YOU, SIR. NO FURTHER
13 QUESTIONS.

14 THE COURT: ALL RIGHT. THE TIME IS 1133.
15 ANY REDIRECT.

16 MS. MAROULIS: NO REDIRECT. YOUR HONOR,
17 WE CALL DR. DAVID TEECE AS OUR NEXT WITNESS.

18 THE COURT: ALL RIGHT. HE'S EXCUSED NOT
19 SUBJECT TO RECALL.

20 MS. MAROULIS: CORRECT, NOT SUBJECT TO
21 RECALL.

22 THE COURT: OKAY. YOU'RE EXCUSED.

23 THE CLERK: PLEASE RAISE YOUR RIGHT HAND.

24 **DAVID TEECE,**

25 BEING CALLED AS A WITNESS ON BEHALF OF THE

1 DEFENDANT, HAVING BEEN FIRST DULY SWORN, WAS
2 EXAMINED AND TESTIFIED AS FOLLOWS:

3 THE WITNESS: I DO.

4 THE CLERK: THANK YOU. PLEASE BE SEATED.

5 THE COURT: TIME IS NOW 11:34. GO AHEAD,
6 PLEASE.

7 THE CLERK: PLEASE STATE JURY FULL NAME
8 AND SPELL IT FOR THE RECORD.

9 **DIRECT EXAMINATION**

10 BY MS. MAROULIS:

11 Q GOOD MORNING, DR. TEECE. CAN YOU STATE YOUR
12 FULL NAME FOR THE RECORD?

13 A YES, DAVID JOHN TEECE.

14 Q CAN YOU PLEASE TELL THE JURY WHAT YOU DO FOR A
15 LIVING?

16 A I'M A CHAIRED PROFESSOR AT THE UNIVERSITY OF
17 CALIFORNIA AT BERKELEY WHERE I ALSO DIRECT THE
18 INSTITUTE FOR INNOVATION, AND I'M ALSO CHAIRMAN OF
19 THE BERKELEY RESEARCH GROUP.

20 Q WHAT ARE THE SUBJECTS OF YOUR TEACHING AND
21 RESEARCH?

22 A PRIMARY FOCUS IS ON INNOVATION AND
23 TECHNOLOGICAL CHANGE. BIG EMPHASIS ON LICENSING
24 AND PUBLIC POLICY, INCLUDING COMPETITION POLICY.

25 Q COULD YOU PLEASE SUMMARIZE BRIEFLY YOUR FORMAL

1 EDUCATION?

2 A YES. I HAVE A PH.D. IN ECONOMICS FROM THE
3 UNIVERSITY OF PENNSYLVANIA. I TAUGHT AT STANFORD
4 FOR FIVE YEARS, AND CAME TO BERKELEY IN '82, AND
5 I'VE BEEN AN ACTIVE SCHOLAR.

6 Q HAVE YOU PUBLISHED ANY PUBLICATIONS IN YOUR
7 FIELD?

8 A YES. I HAVE OVER 200 ARTICLES AND MORE THAN A
9 DOZEN BOOKS, MANY OF WHICH FOCUS ON INNOVATION,
10 TECHNOLOGICAL CHANGE, AND COMPETITION, HOW FIRMS
11 BUILD COMPETITIVE ADVANTAGE IN A CHANGING GLOBAL
12 ECONOMY.

13 Q SIR, HAVE YOU PREVIOUSLY SERVED AS AN EXPERT
14 IN THE FIELD OF ECONOMIC ANALYSIS AND COMPUTATION
15 OF DAMAGES?

16 A YES, I HAVE.

17 Q HOW MANY TIMES APPROXIMATELY?

18 A OH, AT LEAST 50.

19 MS. MAROULIS: YOUR HONOR, I TENDER
20 DR. TEECE AS AN EXPERT IN ECONOMIC ANALYSIS AND
21 COMPUTATION OF PATENT DAMAGES.

22 MR. MUELLER: NO OBJECTION.

23 THE COURT: OKAY. SO CERTIFIED.

24 BY MS. MAROULIS:

25 Q DR. TEECE, WHAT WAS YOUR ASSIGNMENT IN THIS

1 CASE?

2 A I WAS ASKED TO COMPUTE THE REASONABLE ROYALTY
3 DAMAGES DUE SAMSUNG FROM APPLE FOR USE OF ITS UMTS
4 PATENTS.

5 Q AND THOSE ARE '941 AND '516 PATENTS?

6 A THAT IS CORRECT.

7 Q HAVE YOU PREPARED A SLIDE TO SUMMARIZE YOUR
8 CALCULATION?

9 A I HAVE.

10 Q LET'S TAKE A LOOK AT SDX 3963.005.

11 DR. TEECE, WHAT DOES THIS SLIDE
12 ILLUSTRATE?

13 A THE HIGHLIGHTED YELLOW IS THE REASONABLE
14 ROYALTY RATES THAT I HAVE DETERMINED ARE
15 APPLICABLE. IT'S A RANGE. AT A MINIMUM END IT'S 2
16 PERCENT. AT THE UPPER END IS 2.75 PERCENT OF NET
17 SALES.

18 ON THE LEFT I HAVE THE INFRINGING SALES
19 OF IPHONES AND IPADS, 12.23 BILLION OF IPHONES, AND
20 2.29 BILLION OF IPADS.

21 AND THAT LEADS ME TO A TOTAL DAMAGES
22 NUMBER ON THE FAR RIGHT WHICH RANGES FROM, AT THE
23 LOW END, 290 MILLION, AT THE RIGHT HAND, 399
24 MILLION.

25 Q SIR, HOW DO YOU CALCULATE THESE REASONABLE

1 ROYALTY AMOUNTS THAT ARE LISTED ON THIS CHART?

2 A WELL, I -- SINCE THERE WAS NO LICENSE ENTERED
3 INTO BETWEEN APPLE AND SAMSUNG, I HAD TO GO THROUGH
4 AN EXERCISE TO FIGURE OUT WHAT THEY MIGHT HAVE
5 AGREED UPON IF THERE WAS A NEGOTIATION BACK AT
6 ABOUT THE TIME OF FIRST INFRINGEMENT.

7 SO I SET UP SOMETHING CALLED THE
8 HYPOTHETICAL NEGOTIATION AS A FRAMEWORK FOR
9 DETERMINING WHAT THE REASONABLE ROYALTIES BASE
10 WOULD BE.

11 Q AND WHAT IS THE BASE THAT YOU HAVE USED FOR
12 THE PURPOSES OF THIS ANALYSIS.

13 A YES, THE ROYALTY BASE, BECAUSE IF YOU HAVE A
14 RATE, IT'S NO GOOD TO YOU WITHOUT A BASE, THE BASE
15 IS THE NET SALES OF THE INFRINGING PRODUCTS, AND
16 THE NET SALES ARE BASICALLY THE SALES NUMBERS MINUS
17 A FEW RETURNS. SO IT'S BASICALLY THE SALES OR
18 REVENUE NUMBERS FOR THE PRODUCTS IN QUESTION.

19 Q WHAT PERIOD OF TIME DID YOU ASSUME FOR THE
20 PURPOSES OF THIS ANALYSIS IN CALCULATING THE
21 ROYALTY BASE?

22 A THE DATES ARE AT THE TOP THERE FOR. FOR THE
23 IPHONE, IT WAS POST SEPTEMBER 9TH, 2010. FOR THE
24 IPADS, IT WAS POST APRIL 27TH, 2011.

25 Q SIR, LET'S TAKE THESE COMPONENTS ONE AT A

1 TIME .

2 TURNING TO THE ROYALTY BASE , HOW DID YOU
3 DETERMINE THE NET SALES PRICE OF A PRODUCT WAS THE
4 APPROPRIATE ROYALTY BASE?

5 A WELL , I LOOKED AT TWO THINGS . ONE IS INDUSTRY
6 PRACTICE . IT'S VERY COMMON TO STATE A LICENSE AS A
7 PERIOD OF TIME OF THE SALES PRICE OF THE PRODUCT .

8 SECONDLY , IN THIS CASE I LOOKED AT UMTS
9 TECHNOLOGY AND HOW IT IMPACTED SALES OF THE PRODUCT
10 AND TOOK THAT INTO ACCOUNT AS WELL .

11 Q DID YOU PREPARE ANY SLIDES TO ILLUSTRATE THE
12 VALUE CONFERRED BY THE UMTS TECHNOLOGY?

13 A I DID .

14 Q LET'S TAKE A LOOK AT SDX 3963.006 , PLEASE .

15 CAN YOU PLEASE DESCRIBE FOR THE JURY WHAT
16 THESE SLIDES ILLUSTRATE .

17 A YES . I TRIED TO GET A CONTROL OR AN
18 EXPERIMENT AFTER EXPERIMENT , IF YOU WILL , FOR
19 WHAT'S REALLY THE VALUE OF UMTS TECHNOLOGIES
20 EMBEDDED IN THE APPLE PRODUCTS .

21 AND FORTUNATELY THE IPOD TOUCH IS A
22 PRODUCT IN THE MARKET THAT HAS MOST OF THE FEATURES
23 IN THE IPHONE BUT WITHOUT THE PHONE FEATURE AND
24 WITHOUT THE CONNECTIVITY ASSOCIATED WITH UMTS
25 TECHNOLOGY .

1 AND AS YOU CAN SEE, THERE'S A SIGNIFICANT
2 PRICE PREMIUM BETWEEN THE IPOD AND THE IPHONE. IN
3 FACT, FOR THE TWO DIFFERENT MODELS I LOOKED AT,
4 IT'S EXACTLY 400, THAT'S APPLE'S PRICING, THAT'S
5 NOT TAKING INTO ACCOUNT ANY SERVICE DISCOUNTS OR
6 DISCOUNTS YOU MAY GET THROUGH A SERVICE PROVIDER.

7 BUT THERE'S A VERY SUBSTANTIAL PRICE
8 PREMIUM ASSOCIATED WITH THE UMTS TECHNOLOGY WHICH I
9 THINK IS WELL CAPTURED BY LOOKING AT THAT PRICE
10 DIFFERENTIAL.

11 Q AND HAVE YOU PREPARED ANY ADDITIONAL SLIDES
12 WITH RESPECT TO THE IPAD PRODUCT?

13 A YES. SO I'VE DONE A SIMILAR COMPARISON WITH
14 RESPECT TO THE IPAD.

15 Q LET'S TAKE A LOOK AT 3963.07.

16 A YES. THE PRICE DIFFERENCE IS NOT QUITE AS
17 GREAT, BUT IF YOU LOOK AT AN IPAD THAT'S JUST GOT
18 THE WI-FI FEATURES OR THE ONE WITH UMTS, THEN
19 THERE'S A \$177 OR \$180 DIFFERENCE IN PRICE BY
20 HAVING THAT EXTRA FUNCTIONALITY ASSOCIATED WITH THE
21 UMTS TECHNOLOGY.

22 Q THANK YOU, SIR.

23 TURNING NOW TO ROYALTY RATES, HOW DID YOU
24 DETERMINE THAT THE ROYALTY RATES SHOULD BE BETWEEN
25 2 PERCENT AND TWO AND THREE QUARTERS PERCENT?

1 A AS AN ECONOMIST, I LIKE TO LOOK AT MARKET
2 TRANSACTIONS. THAT'S USUALLY THE BEST MEASURE OF
3 VALUE. SO I LOOKED AT LICENSING AGREEMENTS THAT I
4 FOUND IN THE RECORD OF THE CASE TO SEE WHAT I COULD
5 GLEAN FROM THOSE IN TERMS OF WHAT A REASONABLE
6 ROYALTY MIGHT BE.

7 Q SIR, I'M NOW GOING TO TURN YOUR ATTENTION TO
8 AN EXHIBIT THAT IS ONLY GOING TO BE SHOWN TO THE
9 JURY AND THE COURT AND YOURSELF. IT HAS HIGHLY
10 CONFIDENTIAL INFORMATION OF THIRD PARTIES.

11 PLEASE TURN TO EXHIBIT DX 630 IN YOUR
12 BINDER.

13 A OKAY.

14 Q WHAT IS EXHIBIT DX 630?

15 A I'M THERE.

16 Q HAVE YOU PREPARED THIS EXHIBIT?

17 A I HAVE.

18 Q WHAT DOES IT SUMMARIZE?

19 A IT SUMMARIZES THE NUMBER OF LICENSING
20 AGREEMENTS, IN THIS CASE I'M LOOKING AT THE SAMSUNG
21 LICENSING AGREEMENTS THAT I WAS ABLE TO FIND
22 INFORMATION ON, THAT I COULD ACTUALLY GET AHOLD OF
23 THE LICENSE AGREEMENT AND DISTILL CERTAIN
24 INFORMATION FROM IT.

25 MS. MAROULIS: YOUR HONOR, I MOVE EXHIBIT

1 DX 630 INTO EVIDENCE.

2 THE COURT: ANY OBJECTION?

3 MR. MUELLER: NO OBJECTION.

4 THE COURT: IT'S ADMITTED.

5 (WHEREUPON, DEFENDANT'S EXHIBIT NUMBER
6 630, HAVING BEEN PREVIOUSLY MARKED FOR
7 IDENTIFICATION, WAS ADMITTED INTO
8 EVIDENCE.)

9 BY MS. MAROULIS:

10 Q SIR, TURNING YOUR ATTENTION TO ROW 12 OF
11 CONFIDENTIAL EXHIBIT DX 630, HAVE YOU CONSIDERED
12 THIS LICENSE THAT I'M POINTING YOU TO IN YOUR
13 ANALYSIS?

14 A YES, I HAVE.

15 Q WHEN DID THE PARTIES ENTER INTO THIS LICENSE?

16 A THIS ONE WAS ENTERED INTO IN 2004.

17 Q WHAT IS BEING LICENSED HERE?

18 A A NUMBER OF TECHNOLOGIES, INCLUDING UMTS
19 TECHNOLOGY.

20 Q AND WHERE DID THE JURY FIND THE FINANCIAL
21 TERMS OF THE AGREEMENT?

22 A IN THE COLUMN SECOND FROM THE RIGHT.

23 Q OKAY. DID THOSE TERMS SUPPORT YOUR CONCLUSION
24 THAT THE NET SALE PRICE IS THE APPROPRIATE ROYALTY
25 BASE FOR ASSESSING REASONABLE ROYALTY?

1 A YES, IT DOES. IT'S --

2 Q IT SUPPORT --

3 A UNDER THE PAYMENTS SECTION THERE, YES, YOU CAN
4 HIGHLIGHT IT ON THE TOP LINE, BUT IT'S A PERIOD OF
5 TIME OF NET SELLING PRICE THAT IS IDENTIFIED THERE
6 THAT GIVES ME A CLUE, AT LEAST WITH RESPECT TO THAT
7 PARTICULAR PROVIDER OF UMTS TECHNOLOGY, AS TO WHAT
8 A REASONABLE ROYALTY RATE IS. IT'S EXPRESSED AS A
9 PERIOD OF TIME OF NET SALES.

10 Q AND DOES IT SUPPORT YOUR ROYALTY RATE AS WELL?

11 A YES. IT'S ABOVE THE ROYALTY RATE RANGE THAT I
12 HAVE CHOSEN, BUT IT CERTAINLY IS CONSISTENT WITH
13 THE HIGH END OF IT.

14 Q PLEASE TAKE A LOOK AT ROW 29 OF DX 630. HAVE
15 YOU CONSIDERED THIS LICENSE IN SUPPORTING YOUR
16 ANALYSIS?

17 A YES, I HAVE.

18 Q HOW DOES THIS LICENSE SUPPORT YOUR
19 DETERMINATION OF ROYALTY BASE AND ROYALTY RATE?

20 A WELL, ONCE AGAIN, IF YOU LOOK AT THE PAYMENTS
21 SECTION, THERE IS A REASONABLE -- OR THERE IS A
22 ROYALTY RATE AS A PERIOD OF TIME OF SALES IT'S
23 SPECIFIED.

24 MAYBE YOU CAN HIGHLIGHT THAT. AND IT IS
25 WITHIN THE RANGE, THERE'S A NUMBER IN THE MIDDLE,

1 THERE'S A PERCENTAGE. IT'S A PERCENTAGE OF NET
2 SALES. THERE'S A NUMBER THERE THAT IS WITHIN MY
3 RANGE THAT I DESCRIBED EARLIER TO THE JURY.

4 Q OKAY. YOU CAN TAKE DOWN THE EXHIBIT.

5 DOES THIS EXHIBIT SET FORTH THE ROYALTY
6 RATE FOR SAMSUNG'S ESSENTIAL PATENTS?

7 A NO, IT DOESN'T. THESE ARE WHAT SAMSUNG HAS
8 PAID FOR THE USE OF OTHER PEOPLE'S TS TECHNOLOGY,
9 SO IT'S NOT IDEAL, BUT I THINK IT'S INDICATIVE.

10 Q CAN YOU DESCRIBE HOW IT'S NONETHELESS RELEVANT
11 TO YOUR ANALYSIS?

12 A HOW IT IS RELEVANT TO MY ANALYSIS?

13 Q YES.

14 A YES, I MEAN, THERE'S A GENERAL MARKETPLACE OUT
15 THERE FOR TECHNOLOGY, AND WHETHER YOU'RE THE BUYER
16 OR THE SELLER FOR UMTS TECHNOLOGY, THEY TEND TO GO
17 DOWN IN APPROXIMATELY THE SAME RANGE.

18 Q SO HOW MANY SAMSUNG CROSS-LICENSES HAVE YOU
19 ANALYZED IN THIS CASE?

20 A WELL, I WAS ABLE TO GET SOME INFORMATION ON
21 TWO SAMSUNG CROSS-LICENSES WHERE SAMSUNG WAS
22 LICENSING OUT ITS UMTS TECHNOLOGY. THE ONES I
23 LOOKED AT, THOSE WERE LICENSING IN. BUT I WAS ABLE
24 TO GET INFORMATION ON TWO LICENSES WHERE SAMSUNG
25 WAS LICENSING OUT ITS UMTS.

1 Q WE'RE GOING TO SHOW TO THE JURY NOW THE
2 CONFIDENTIAL DEMONSTRATIVE 3963.019. ONCE THE JURY
3 SEES THAT, AND WE CANNOT SHOW IT TO THE REST OF THE
4 WORLD, CAN YOU PLEASE EXPLAIN THIS SLIDE TO THE
5 JURY?

6 A YES. THE FIRST POINT I'VE GOT TO GET ACROSS
7 IS THAT MOST LICENSES ARE, IN FACT, CROSS-LICENSES,
8 BY WHICH I MEAN ONE PARTY WILL LICENSE OUT
9 TECHNOLOGY AND THEY WILL LICENSE BACK IN
10 TECHNOLOGY.

11 MONEY IS USED AS A BALANCING PAYMENT, BUT
12 THE PRIMARY CONSIDERATION IN GOING BACK AND FORTH
13 ISN'T MONEY. IT'S INTELLECTUAL PROPERTY RIGHTS.
14 IT'S CALLED A CROSS-LICENSE.

15 SO THE CHALLENGE HERE IS FOR ME TO FIGURE
16 OUT, BECAUSE I'M LOOKING AT CALCULATING DAMAGES,
17 WHAT APPLE WOULD PAY SAMSUNG FOR ONE LICENSE, I'VE
18 GOT TO TRY AND FIGURE OUT FROM THE CROSS-LICENSE
19 WHAT THE VALUE OF THE ONE-WAY LICENSE WOULD BE. SO
20 THERE'S A SIMPLE EQUATION HERE.

21 Q SIR, IF I MAY REMIND YOU NOT TO MENTION THE
22 NUMBERS PUBLICLY?

23 A OKAY.

24 Q THERE'S SOME THIRD PARTIES IN THE AUDIENCE?

25 A OKAY.

1 Q GO AHEAD.

2 A BASICALLY IF I KNOW THE ROYALTY BASE, WHICH I
3 DO IN THIS CASE, AND IF I KNOW WHAT THE STANDARD
4 ROYALTY RATE IS FOR THE OTHER PARTY, I CAN ESTIMATE
5 WHAT SAMSUNG'S RATE IS IF I ALSO KNOW WHAT THE
6 BALANCING PAYMENT IS.

7 SO IN THIS CASE, I'VE JUST SET UP THE
8 PROBLEM. I'M TRYING TO FIGURE OUT WHAT SAMSUNG'S
9 IMPLIED RATE IS, AND THAT'S A SIMPLE EQUATION THAT
10 I LOOKED AT, AND THE NEXT SLIDE GIVES THE ANSWER.

11 Q LET'S TAKE A LOOK AT THE NEXT CONFIDENTIAL
12 SLIDE, 3963.020. DOES THIS SLIDE SHOW THE ROYALTY
13 RATE THAT YOU ANALYZED?

14 A YES, THAT IS THE IMPLIED OR ESTIMATED RATE
15 THAT I GET FROM THAT PIECE OF ANALYSIS, THREE
16 PERCENTAGE POINTS OF NET SALES, WHICH IS SLIGHTLY
17 ABOVE MY RANGE OF 2 TO 2.75.

18 Q IS THIS NUMBER CONSISTENT WITH THE INDUSTRY
19 LICENSES YOU LOOKED AT EARLIER?

20 A IT IS.

21 Q SIR, HAVE YOU PREPARED A SLIDE SHOWING WHAT
22 SAMSUNG PROVIDED TO THE -- IN THE CROSS-LICENSE TO
23 THE OTHER SIDE?

24 A YES.

25 Q AND IS THAT THE SLIDE, CONFIDENTIAL SLIDE

1 3963.022?

2 A YES.

3 Q CAN YOU PLEASE EXPLAIN TO THE JURY WHAT YOU
4 EXPRESSED IN THIS SLIDE WITHOUT MENTIONING THE
5 NUMBERS?

6 A YES, THIS ANALYTICAL FRAMEWORK ALSO ENABLES ME
7 TO VALUE THE LICENSING RIGHTS THAT ARE TRADED AND
8 TO SHOW IT IN COMPARISON TO THE BALANCING PAYMENTS.

9 AND AS YOU CAN SEE, THE PAYMENT IN KIND,
10 IF YOU WILL, OF INTELLECTUAL PROPERTY RIGHTS IS WAY
11 GREATER THAN THE BALANCING PAYMENTS.

12 SO I OFTEN SPEAK OF THE BALANCING
13 PAYMENT, THE CASH AMOUNT THAT TRADES HANDS HERE AS
14 JUST THE TIP OF THE ICEBERG.

15 MY CHALLENGE, OF COURSE, HERE IS TO
16 FIGURE OUT THE VALUE OF THE ICEBERG, NOT JUST THE
17 TIP.

18 Q WHAT IS THE PRIMARY VALUE THAT SAMSUNG WAS
19 PROVIDING TO ITS COUNTER PARTIES IN ITS LICENSING
20 AGREEMENT?

21 A THE PRIMARY VALUE IN A CROSS-LICENSE, AND
22 CERTAINLY IN THE CASE OF SAMSUNG'S CROSS-LICENSES,
23 I BELIEVE WAS THE LICENSING RIGHT.

24 Q AND HOW DOES THE BALANCING RATE COMPARE TO THE
25 VALUE OF THE PATENT RIGHTS PROVIDED BY SAMSUNG?

1 A IT'S LOW IN COMPARISON.

2 Q DID YOU PREPARE, SIR, EXHIBIT DX 631 TO
3 EXPLAIN YOUR ANALYSIS?

4 A YES.

5 Q CAN YOU PLEASE CONFIRM IN YOUR BINDER THAT DX
6 631, CONFIDENTIAL EXHIBIT, IS WHAT YOU PREPARED.

7 A YES.

8 MS. MAROULIS: YOUR HONOR, WE MOVE DX 631
9 UNDER SEAL, REDACTED, INTO EVIDENCE.

10 THE COURT: ANY OBJECTION?

11 MR. MUELLER: NO OBJECTION, YOUR HONOR.

12 THE COURT: ALL RIGHT. IT'S ADMITTED.

13 (WHEREUPON, DEFENDANT'S EXHIBIT NUMBER
14 631, HAVING BEEN PREVIOUSLY MARKED FOR
15 IDENTIFICATION, WAS ADMITTED INTO
16 EVIDENCE.)

17 BY MS. MAROULIS:

18 Q SIR, DID YOU PREPARE ANOTHER SLIDE TO
19 ILLUSTRATE A DIFFERENT CROSS-LICENSE AT 3963.024?

20 A I DID.

21 Q LET'S TAKE A LOOK, JUST FOR THE JURY, AT THIS
22 SLIDE. CAN YOU PLEASE EXPLAIN, WITHOUT REFERENCE
23 TO THE NUMBERS, WHAT IS DEPICTED THERE?

24 A YES. THIS IS A CROSS-LICENSE WITH ANOTHER
25 PARTY WHERE I WAS LIKEWISE ABLE TO DETERMINE THE

1 ROYALTY BASE, AND I WAS ALSO ABLE TO DETERMINE THE
2 STANDARD RATE FOR THE OTHER PARTY, AS WELL AS THE
3 BALANCING PAYMENT, AND TOOK IN MATHEMATICALLY FOR
4 THIS TO GET AN ESTIMATE OF SAMSUNG'S RIGHT RATE.

5 Q LET'S TURN TO THE NEXT CONTENTION SLIDE. IS
6 THAT THE ROYALTY RATES THAT YOU ANALYZED?

7 A YES. YOU NEED TO CHANGE THE SLIDE THERE, I
8 THINK.

9 Q IT'S 3963.021. IT'S 025. I'M SORRY.

10 A YES. SO THE ESTIMATED RATE THERE IS 1.74,
11 WHICH IS SLIGHTLY BELOW THE LOW END OF MY 2 TO 2.75
12 RANGE.

13 Q OKAY. THANK YOU, RYAN.

14 WE CAN TAKE THOSE DOWN.

15 DR. TEECE, HOW DID YOU ACCOUNT FOR THE
16 FACT THAT THERE ARE TWO PATENTS AT ISSUE HERE AND
17 THESE AGREEMENTS COVER MORE THAN TWO PATENTS?

18 A YES, I'M COGNIZANT OF THE FACT THAT THIS
19 HYPOTHETICAL LICENSE WOULD BE FOR TWO PATENTS, AND
20 TYPICALLY WITH A CROSS-LICENSE, YOU'RE LICENSING A
21 MUCH LARGER PORTFOLIO. BUT WHAT STUDIES SHOW IS
22 THAT THE VOLUME OF ANY PORTFOLIO, OR GROUPING OF
23 LICENSES USUALLY COMES DOWN TO THE VALUE OF ONE,
24 TWO, OR THREE OR A HANDFUL SO THAT A SMALL
25 PERCENTAGE OF THE PATENTS IN A LICENSE ARE REALLY

1 WHAT DRIVES VALUE IN MOST INSTANCES.

2 Q LET'S TAKE A LOOK AT SLIDE 3963.027. DOES
3 THIS SLIDE SUMMARIZE WHAT YOU JUST EXPLAINED ABOUT
4 THE VALUE?

5 A YES. WHAT I'M DOING IN THIS CHART IS LOOKING
6 AT SOME WHAT ARE CALLED PLUS FACTORS OR MINUS
7 FACTORS, THINGS THAT WOULD TEND TO PRESS THE RATE
8 DOWNWARDS OR RAISE IT UPWARDS.

9 AND IF I BEGIN AT THE BOTTOM THERE, I'M
10 COMPARING A BENCHMARK OF A MARKETPLACE LICENSE AND
11 I'M SAYING, OKAY, HOW DOES THAT INFORM ME WITH
12 RESPECT TO WHAT THE DAMAGES RATE WOULD BE HERE,
13 WHAT THE REASONABLE ROYALTY RATE WOULD BE AND I'M
14 SAYING SINCE THIS IS NOT A FULL PORTFOLIO, THIS
15 WOULD BE SOME DISCOUNT. THAT'S WHY THERE'S THE RED
16 MINUS SIGN. BUT AT THE SAME TIME THERE'S TWO
17 OFFSETS FACTORS THAT I THINK FULLY ACCOUNT FOR THAT
18 DISCOUNT OR ESSENTIALLY NEUTRALIZE IT.

19 Q THANK YOU, SIR. YOU HEARD DR. O'BRIEN HERE
20 TESTIFYING ABOUT GEORGIA PACIFIC ANALYSIS. DID YOU
21 DO ONE AS WELL?

22 A I DID. BUT CAN I FIRST EXPLAIN THESE OTHER
23 FACTORS.

24 Q YES, GO AHEAD.

25 A OKAY. THE OTHER FACTORS, HERE I'M REQUIRED TO

1 ASSUME THE PATENTS ARE VALID AND INFRINGED.
2 TECHNICALLY WHEN THERE'S A MARKET TRANSACTION, YOU
3 DON'T KNOW FOR SURE IF THE PATENTS ARE VALID AND
4 INFRINGED, SO LICENSES, WHAT YOU OBSERVE IN THE
5 BUSINESS WORLD ARE DISCOUNTED RATES BECAUSE YOU'RE
6 UNCLEAR ABOUT VALIDITY AND INFRINGEMENT.

7 HERE IN THE COURTROOM, WE KNOW THE
8 ANSWER. SO THAT WOULD BE A PLUS FACTOR.

9 AND THEN ALSO THE LICENSING QUESTION
10 WOULD BE A U.S. ONLY LICENSE, AND THEY TYPICALLY
11 COMMAND A PREMIUM OVER A WORLDWIDE LICENSE BECAUSE
12 THE ROYALTY BASE WILL BE SMALLER.

13 Q THANK YOU, SIR. TURNING TO MY QUESTION OF
14 GEORGIA PACIFIC ANALYSIS, DID YOU CONDUCT ONE AS
15 WELL?

16 A YES, I DID.

17 Q AND DID CONDUCTING GEORGIA PACIFIC ANALYSIS
18 CONFIRM YOUR FINDINGS THROUGH THE MARKET DATA
19 RESEARCH THAT YOU PERFORMED?

20 A YES, THE GENERAL FRAMEWORK I'M USING IS
21 GEORGIA PACIFIC, BUT I DID LOOK AT SOME OTHER
22 FACTORS SUGGESTED IN THE FRAMEWORK, AND I DO
23 BELIEVE THAT THEY'RE CONFIRMATORY.

24 Q CAN YOU GIVE US A FEW FACTORS THAT YOU LOOKED
25 AT AND BRIEFLY SUMMARIZE THEM FOR THE JURY?

1 THE WITNESS.

2 THE COURT: OKAY. IT IS NOW 11:54. GO
3 AHEAD, PLEASE.

4 **CROSS-EXAMINATION**

5 BY MR. MUELLER:

6 Q GOOD MORNING, DR. TEECE.

7 A GOOD MORNING.

8 Q MY NAME IS JOE MUELLER. I'M GOING TO ASK YOU
9 A FEW QUESTIONS.

10 A CERTAINLY.

11 Q THE FIRST QUESTION IS YOU HAVE NEVER
12 NEGOTIATED A PATENT LICENSE AS A PRINCIPAL
13 NEGOTIATOR; CORRECT?

14 A THAT'S CORRECT.

15 Q NOW, YOU'RE HERE TODAY TO DISCUSS TWO PATENTS;
16 CORRECT?

17 A YES.

18 Q I NOTICED DURING YOUR DIRECT EXAMINATION YOU
19 DIDN'T USE THE WORD "FRAND;" CORRECT?

20 A CORRECT.

21 Q YOU KNOW WHAT THAT WORD MEANS?

22 A YES, I DO.

23 Q IT MEANS FAIR, REASONABLE, AND
24 NON-DISCRIMINATORY LICENSING; CORRECT?

25 A THAT'S RIGHT.

1 Q IS THAT RIGHT?

2 A THAT'S RIGHT. THE MIDDLE WORD, THE SECOND
3 LETTER IS R, REASONABLE, WHICH IS WHAT I'VE DONE.

4 Q AND FRAND PATENTS ARE A SPECIAL CATEGORY OF
5 PATENTS; CORRECT?

6 A WELL, FRAND LICENSING ARRANGEMENTS ARE -- CAN
7 BE, YES.

8 Q AND COMPANIES MAKE FRAND COMMITMENTS AS PART
9 OF A SPECIAL PROCESS CALLED STANDARDS SETTING;
10 CORRECT.

11 A THAT'S CORRECT.

12 MS. MAROULIS: OBJECTION, YOUR HONOR.
13 THIS IS A DIFFERENT PART OF THE CASE THAT HASN'T
14 STARTED YET.

15 MR. MUELLER: YOUR HONOR, IT'S NOT.
16 THESE ARE TWO FRAND PATENTS, THE EXACT ISSUE HE
17 TESTIFIED ON.

18 THE COURT: I'LL ALLOW LIMITED
19 QUESTIONING, BUT THIS SHOULD BE SAVED FOR YOUR
20 CASE.

21 BY MR. MUELLER:

22 Q DR. TEECE, LET'S BE CLEAR. YOU'RE HERE TO
23 TESTIFY ON TWO PATENTS; CORRECT?

24 A CORRECT.

25 Q AND SAMSUNG HAS MADE A FRAND COMMITMENT FOR

1 BOTH; CORRECT?

2 A A COMMITMENT TO LICENSE ON REASONABLE TERMS,
3 THAT'S CORRECT.

4 Q AND THAT FRAND COMMITMENT MUST BE CONSIDERED
5 AS PART OF ANALYZING DAMAGES FOR THOSE TWO PATENTS;
6 CORRECT?

7 A YES.

8 Q SO THE FRAND COMMITMENT IS PRECISELY RELEVANT
9 TO THE ISSUES YOU JUST TESTIFIED ABOUT; CORRECT?

10 A IN PARTICULAR WHAT FRAND DOES IS REQUIRE YOU
11 TO LICENSE, SO, YES, I'M ACTUALLY VALUING A
12 LICENSE. I'M ASSUMING THAT THERE'S A LICENSE.

13 Q BUT, SIR, YOU AGREE IT'S RELEVANT; CORRECT?

14 A YES.

15 Q AND YOU DIDN'T MENTION IT; CORRECT?

16 A I -- I MENTIONED THE WORD REASONABLE, WHICH IS
17 THE SAME AS IN THE FRAND CONCEPT IN MY VIEW.

18 Q SIR, YOU DIDN'T USE THE WORD FRAND?

19 A CORRECT.

20 Q NOW, YOU'RE NOT HERE TO DISCUSS DESIGN
21 PATENTS; CORRECT?

22 A CORRECT.

23 Q YOU'RE NOT HERE TO DISCUSS TRADE DRESS;
24 CORRECT?

25 A CORRECT.

1 Q LET'S TURN IN YOUR BINDER, IF WE COULD, TO PX
2 80, WHICH I BELIEVE IS TAB 5.

3 MS. MAROULIS: COUNSEL, CAN I HAVE A
4 BINDER.

5 MR. MUELLER: I'M SORRY. I THOUGHT YOU
6 HAD IT.

7 THE WITNESS: OKAY.

8 BY MR. MUELLER:

9 Q YOU'VE SEEN THIS BEFORE; CORRECT?

10 A YES.

11 Q THIS IS A LETTER FROM SAMSUNG TO APPLE;
12 CORRECT?

13 A YES.

14 Q DATED JULY 25TH, 2011; CORRECT?

15 A THAT'S RIGHT.

16 MR. MUELLER: YOUR HONOR, I OFFER IT.

17 THE COURT: ANY OBJECTION?

18 MS. MAROULIS: AGAIN, SAME OBJECTION,
19 THIS IS A DIFFERENT PART OF THE CASE.

20 THE COURT: IT'S ADMITTED.

21 (WHEREUPON, PLAINTIFF'S EXHIBIT NUMBER
22 80, HAVING BEEN PREVIOUSLY MARKED FOR
23 IDENTIFICATION, WAS ADMITTED INTO
24 EVIDENCE.)

25 BY MR. MUELLER:

1 Q DR. TEECE, IN THIS LETTER, SAMSUNG, WHICH
2 WE'LL PUT ON THE SCREEN, SAMSUNG PROPOSED TERMS, OR
3 REQUESTED TERMS FROM APPLE FOR ITS FRAND PATENT
4 PORTFOLIO FOR UMTS; CORRECT?

5 A YES.

6 Q AND THAT'S OFFERED COVERING THE ENTIRE
7 PORTFOLIO; CORRECT?

8 A OF THE UMTS, QUESTION.

9 Q AND YOU'VE ESTIMATED THAT PORTFOLIO AS 86
10 PATENTS; CORRECT?

11 A SOMETHING IN THAT ORDER, YES.

12 Q AND SAMSUNG PROPOSED TO APPLE A 2.4 PERCENT
13 ROYALTY; CORRECT?

14 A THAT'S RIGHT.

15 Q FOR THE ENTIRE PORTFOLIO; CORRECT?

16 A YES.

17 Q AND YOU'RE HERE TODAY ON TWO; CORRECT?

18 A YES, ON A GEORGIA PACIFIC ANALYSIS, I WANT TO
19 BE CLEAR, IT'S NOT QUITE FRAND, BECAUSE WITH FRAND
20 YOU DON'T KNOW FOR SURE IF THE PATENTS ARE VALID
21 AND INFRINGED; WITH GEORGIA PACIFIC, YOU DO.

22 Q SIR, SAMSUNG MADE FRAND COMMITMENTS FOR THE
23 VERY TWO PATENTS THAT YOU'RE HERE TODAY TO TALK
24 ABOUT; CORRECT?

25 A CORRECT.

1 Q AND THOSE TWO PATENTS ARE WITHIN THE SCOPE OF
2 THE PORTFOLIO PROPOSED THAT SAMSUNG MADE; CORRECT?

3 A THAT IS RIGHT.

4 Q ALONG WITH 84 OTHERS; CORRECT?

5 A THAT IS RIGHT.

6 Q THIS LETTER WAS SENT IN JULY OF 2011; CORRECT?

7 A YES.

8 Q THAT'S THE FIRST TIME YOU'VE SEEN SAMSUNG
9 PROPOSE TERMS FOR ITS UMTS PATENT TO SAMSUNG;
10 CORRECT?

11 A THAT'S RIGHT.

12 Q NOT IN 2010; CORRECT?

13 A CORRECT, YES.

14 Q NOT IN 2009; CORRECT?

15 A THAT IS CORRECT.

16 Q NOT IN 2008; CORRECT?

17 A THAT IS CORRECT.

18 Q NOT IN 2007; CORRECT?

19 A CORRECT.

20 Q FIRST TIME WAS JULY OF 2011; CORRECT?

21 A I BELIEVE SO.

22 Q AFTER THIS LITIGATION BEGAN; CORRECT?

23 A YES.

24 MR. MUELLER: YOUR HONOR, THIS MIGHT BE A
25 GOOD TIME TO BREAK FOR LUNCH.

1 THE COURT: ARE YOU DONE OR DO YOU --

2 MR. MUELLER: I WANT TO CHANGE SUBJECTS.

3 I HAVE ABOUT TEN MORE MINUTES.

4 THE COURT: OH. WHY DON'T YOU GO ANOTHER

5 MINUTE OR TWO.

6 MR. MUELLER: SURE.

7 Q NOW, YOU HAVE NO INFORMATION AS TO HOW THE

8 SAMSUNG 2.4 PERCENT WAS CALCULATED; CORRECT?

9 A YOU MEAN THE -- THIS NUMBER MENTIONED IN 24

10 LETTER HERE?

11 Q THAT'S EXACTLY RIGHT, SIR?

12 A THAT'S CORRECT.

13 Q AND SAMSUNG HAS NEVER HAD A PUBLISHED UMTS

14 RATE; CORRECT?

15 A I THINK THAT'S RIGHT.

16 Q YOU DON'T KNOW WHETHER SAMSUNG OFFERED ANYONE

17 ELSE, OR REQUESTED FROM ANYONE ELSE, 2.4 PERCENT;

18 CORRECT?

19 A I DON'T KNOW FOR SURE.

20 Q YOU DON'T KNOW, YOU'VE SEEN NO EVIDENCE TO

21 SUGGEST THAT SAMSUNG HAS ASKED ANY OTHER COMPANY,

22 BESIDES APPLE, FOR THIS 2.4 PERCENT ROYALTY;

23 CORRECT?

24 A THAT'S CORRECT.

25 Q IN FACT, ASIDE FROM THIS LETTER, YOU HAVEN'T

1 SEEN A SHRED OF PAPER CONNECTING THE 2.4 PERCENT
2 ROYALTY TO THE SAMSUNG UMTS FRAND PORTFOLIO;
3 CORRECT?

4 A I DON'T THINK SO.

5 Q YOU DON'T THINK YOU HAVE; CORRECT?

6 A WHEN YOU SAY CONNECTING IT TO THE PORTFOLIO,
7 WHAT DO YOU MEAN BY THAT?

8 Q YOU'VE SEEN NOT A SHRED OF PAPER FROM SAMSUNG
9 FILES CONNECTING THE 2.4 PERCENT; CORRECT?

10 MS. MAROULIS: OBJECTION, VAGUE.

11 THE WITNESS: I'M NOT QUITE SURE WHAT YOU
12 MEAN.

13 BY MR MUELLER:

14 Q SIR, HAVE YOU EVER SEEN A DOCUMENT FROM
15 SAMSUNG THAT SAYS OUR PORTFOLIO IS WORTH 2.4
16 PERCENT?

17 A NO.

18 Q WHAT YOU DID IN THIS CASE YOU LOOKED AT THE
19 SAMSUNG LICENSES; CORRECT?

20 A YES.

21 Q AND YOU APPLIED THAT EQUATION WHICH YOU SHOWED
22 THE JURY ON THEIR SCREENS; CORRECT?

23 A I DID.

24 Q AND USING THAT EQUATION, YOU ATTEMPTED TO
25 ESTIMATE HOW MUCH SAMSUNG LICENSE RIGHTS THAT IT

1 HAD CONVEYED WERE WORTH; CORRECT?

2 A YES.

3 Q NOW, YOU NEVER CHECKED WITH SAMSUNG TO SEE IF
4 THAT WAS ACTUALLY CONSISTENT WITH THE REAL
5 NEGOTIATIONS; CORRECT?

6 A CORRECT.

7 Q USING YOUR EQUATION, YOU DERIVED NUMBERS, YOU
8 SHOWED THEM TO THE JURY ON THEIR SCREENS FOR WHAT
9 THE MONETARY VALUE OF THOSE LICENSES WAS; CORRECT?

10 A WHEN YOU SAY, "THE MONETARY VALUE," IF YOU HAD
11 TO CONVERT A CROSS-LICENSE INTO A UNILATERAL
12 LICENSE, YES, I'VE DERIVED A REASONABLE ROYALTY
13 RATE.

14 Q WE CAN AGREE ON THIS --

15 THE COURT: IT'S 12:01. LET'S GO AHEAD.

16 MR. MUELLER: NO PROBLEM, YOUR HONOR.

17 THE COURT: 12:01. WE'RE GOING TO BREAK
18 FOR LUNCH FOR ONE HOUR. PLEASE DO NOT TALK TO
19 ANYONE, PLEASE KEEP AN OPEN MIND, AND DO NOT DO ANY
20 RESEARCH ABOUT THE CASE. OKAY. THANK YOU. PLEASE
21 LEAVE YOUR BINDERS IN THE JURY ROOM.

22 (WHEREUPON, THE FOLLOWING PROCEEDINGS
23 WERE HELD OUT OF THE PRESENCE OF THE JURY:)

24 THE COURT: ALL RIGHT. THANK YOU ALL.
25 WE'LL SEE YOU BACK AT 1:00 O'CLOCK.

1 MS. MAROULIS: WE'LL FILE IT AS A PROFFER
2 FOR APPELLATE PURPOSES.

3 THE COURT: I THINK IN RE: CATS, I WILL
4 BE UPHELD FOR TIME LIMITS. I'M NOT CONCERNED.

5 MR. LEE: WE'RE NOT, EITHER.

6 MS. MAROULIS: THANK YOU.

7 THE COURT: THANK YOU VERY MUCH. PLEASE
8 TAKE A SEAT. OKAY.

9 (WHEREUPON, THE FOLLOWING PROCEEDINGS
10 WERE HELD IN THE PRESENCE OF THE JURY:)

11 THE COURT: PLEASE TAKE A SEAT. IT'S
12 1:05.

13 MR. MUELLER: MAY I PROCEED, YOUR HONOR?

14 THE COURT: PLEASE, GO AHEAD.

15 BY MR. MUELLER:

16 Q GOOD AFTERNOON, DR. TEECE.

17 A GOOD AFTERNOON.

18 Q DR. TEECE, FOR YOUR WORK ON THIS CASE YOU
19 LOOKED AT OVER 30 SAMSUNG LICENSES; IS THAT
20 CORRECT?

21 A THAT'S CORRECT.

22 Q AND AS YOU EXPLAINED TO THE JURY, YOU APPLIED
23 YOUR EQUATIONS TO TWO; CORRECT?

24 A THAT IS CORRECT.

25 Q NOW, OUT OF ALL THOSE OVER 30 LICENSES, WE CAN

1 AGREE ON THIS: NO ONE HAS PAID SAMSUNG A PENNY IN
2 MONEY PAYMENTS FOR ITS FRAND PATENTS; CORRECT?

3 A MOST OF THEM ARE CROSS-LICENCES, SO THE
4 PAYMENT IS INCOMING IN OTHER INTELLECTUAL PROPERTY
5 RIGHTS.

6 Q BUT, SIR, IN TERMS OF MONEY PAYMENTS, NO ONE
7 HAS PAID SAMSUNG A PENNY?

8 A THAT'S CORRECT.

9 Q NOW, YOU SHOWED THE JURY A SLIDE EARLIER IN
10 WHICH YOU ATTEMPTED TO PUT A VALUE ON UMTS. DO YOU
11 RECALL THAT?

12 A WHICH ONE HAVE YOU GOT IN MIND?

13 Q SURE. IF YOU CAN PUT UP SDX 3963.006.

14 DO YOU RECALL THIS DOCUMENT?

15 A YES.

16 Q AND ALSO 007?

17 A THAT'S RIGHT.

18 Q AND IN THESE TWO SLIDES, YOU ATTEMPTED TO
19 DETERMINE THE PREMIUM, AS YOU PUT IT, FOR UMTS;
20 CORRECT?

21 A YES, TO GIVE SOME INSIGHT INTO THAT.

22 Q AND UMTS IS A STANDARD; CORRECT?

23 A YES.

24 Q NOW, UMTS WAS DEVELOPED BY DOZENS OF
25 COMPANIES; CORRECT?

1 A THAT'S CORRECT.

2 Q AND THOSE COMPANIES HAVE DECLARED THOUSANDS OF
3 PATENTS THAT ARE ESSENTIAL TO UMTS; CORRECT?

4 A YES. THERE'S A LOT OF PATENTS THERE.

5 Q YOU'RE HERE ON TWO; CORRECT?

6 A YES, THAT'S RIGHT.

7 Q NOW, FROM A TECHNICAL PERSPECTIVE, YOU HAVE NO
8 IDEA HOW VALUABLE THOSE TWO ARE; CORRECT?

9 A I UNDERSTAND FROM THE TECHNICAL EXPERTS THAT
10 THEY'RE IMPORTANT, AND, IN FACT, I'VE CALCULATED
11 WHAT I THINK A REASONABLE ROYALTY RATE IS FOR THEM.

12 Q BUT YOU YOURSELF DON'T KNOW HOW VALUABLE THEY
13 ARE; CORRECT?

14 A I'M NOT A TECHNICAL EXPERT.

15 Q AND YOU HAVE NO IDEA IF THEY'RE A BIG PART OF
16 UMTS; CORRECT?

17 A I UNDERSTAND THAT THEY ARE AT LEAST DECLARED
18 ESSENTIAL.

19 Q NOW, DECLARED ESSENTIAL MEANS DECLARED BY THE
20 OWNER; CORRECT?

21 A THAT'S RIGHT.

22 Q IN THIS CASE DECLARED BY SAMSUNG; CORRECT?

23 A THAT'S CORRECT.

24 Q NO ONE HAS TESTED THAT PROPOSITION WHETHER
25 THEY'RE TRULY ESSENTIAL UNTIL THE LADIES AND

1 GENTLEMEN OF THE JURY DO; CORRECT?

2 A I DON'T UNDERSTAND THAT ANYONE HAS SUBMITTED
3 AROUND THEM. AS FAR AS I KNOW, THERE'S NO EVIDENCE
4 OF WORK AROUND.

5 Q SIR, MY QUESTION WAS, NO ONE HAS MADE A
6 DETERMINATION AS TO WHETHER THESE TWO PATENTS ARE,
7 IN FACT, ESSENTIAL UNTIL THE JURY DOES; CORRECT?

8 A AND THAT WILL BE CORRECT.

9 Q AND YOU DON'T KNOW ONE WAY OR THE OTHER IF
10 THEY'RE ESSENTIAL; CORRECT?

11 A THEY'RE DECLARED ESSENTIAL.

12 Q SIR, YOU DON'T KNOW YOURSELF IF THEY'RE TRULY
13 ESSENTIAL?

14 A THAT IS RIGHT.

15 Q NOW, APPLE BROUGHT, TO SPEAK TO THE JURY,
16 THEIR DIRECTOR OF LICENSING AND HIS NAME IS
17 BORIS TEKSLER; RIGHT?

18 A I BELIEVE SO.

19 Q AND SAMSUNG HAS ITS OWN LICENSING EXECUTIVES;
20 CORRECT?

21 A THAT'S RIGHT.

22 Q NOT ONE OF THEM HAS SAID A WORD TO THIS JURY;
23 CORRECT?

24 A I HAVEN'T MONITORED EVERYTHING. I DON'T KNOW
25 FOR SURE.

1 Q YOU'VE SEEN NO EVIDENCE OF THAT; CORRECT?

2 A THAT'S RIGHT.

3 Q AND YOU YOURSELF HAVE SAID NOT A WORD TO THEM
4 EITHER; CORRECT?

5 A THAT IS CORRECT.

6 Q NOW, LET'S TURN ON THE ELMO, IF WE COULD.

7 SIR, WE LOOKED AT THE SAMSUNG PORTFOLIO,
8 REQUEST TO APPLE FROM JULY OF 2011; CORRECT?

9 A THAT'S RIGHT.

10 Q AND BASED ON YOUR ESTIMATE, THAT COVERED A
11 PORTFOLIO OF 86 PATENTS; CORRECT?

12 A I BELIEVE THAT'S RIGHT.

13 Q SO I'M GOING TO WRITE THE NUMBER 86. NOW,
14 THAT 86 INCLUDED THE TWO IN THIS CASE; CORRECT?

15 A THAT'S RIGHT.

16 Q SO I'M GOING TO WRITE 84 PLUS 2.

17 NOW, IN RETURN, SAMSUNG REQUESTED 2.4
18 PERCENT OF THE ENTIRE PRICE OF EACH IPHONE AND IPAD
19 COVERED BY THE PROPOSAL; CORRECT?

20 A THAT WAS AN OPENING POSITION, YES.

21 Q WHEN YOU SAY IT WAS AN OPENING POSITION, THAT
22 WAS THE ONLY POSITION THAT SAMSUNG HAS TAKEN;
23 CORRECT?

24 A WELL, THEN THERE'S NEGOTIATION IN MY
25 UNDERSTANDING. BUT THERE ALWAYS HAS TO BE A

1 STARTING PLACE.

2 Q SIR, THERE'S NEVER BEEN ANOTHER OFFER;
3 CORRECT?

4 A THAT'S MY UNDERSTANDING.

5 Q 2.4 PERCENT OF THE SALES PRICE OF THE ENTIRE
6 DEVICE; CORRECT?

7 A YES, NET SALES PRICE.

8 Q FOR 86 PATENTS, INCLUDING THESE TWO; CORRECT?

9 A YES.

10 Q AND IN THIS CASE, YOU'RE HERE ON ONLY TWO;
11 CORRECT?

12 A THAT'S RIGHT.

13 Q YET, YOU'VE TOLD THIS JURY THE APPROPRIATE
14 ROYALTY IS 2.4 PERCENT; CORRECT?

15 A IT'S A RANGE BETWEEN, FOR DAMAGES PURPOSES,
16 WHICH WHAT I'M LOOKING AT, BETWEEN 2 AND 2.75.

17 Q FAIR ENOUGH. 2 TO 2.75; CORRECT?

18 A FOR PATENTS PROVEN TO BE VALID AND INFRINGED,
19 YES.

20 Q ON THE HIGH END, THAT'S ACTUALLY HIGHER THAN
21 THE PORTFOLIO RATE THAT SAMSUNG PROPOSED; CORRECT?

22 A ON THE HIGH END, CORRECT.

23 Q NOW, YOU'VE ACTUALLY SAID THAT IF THIS JURY
24 FINDS ONLY ONE PATENT, ONE PATENT TO BE TRULY
25 ESSENTIAL, THE RATE WOULD BE THE SAME; CORRECT?

1 A YES. THAT'S OFTEN THE CASE BECAUSE, AS I
2 SAID, THE VOLUME OF THE PORTFOLIO IS VERY MUCH A
3 FUNCTION OF ONE OR TWO IMPORTANT PATENTS.

4 Q AND BOTH SAMSUNG'S ORIGINAL PORTFOLIO PROPOSAL
5 AND YOUR OPINION TODAY IS BASED ON THE ENTIRE PRICE
6 OF THE DEVICE; CORRECT?

7 A WELL, IT REFERENCES THE ENTIRE PRICE. IT
8 TAKES THAT INTO ACCOUNT. IF IT WAS A SMALLER
9 NUMBER, THEN YOU WOULD USE A HIGHER ROYALTY RATE.

10 Q BUT YOU'RE SAYING 2 TO 2.75 PERCENT OF THE
11 ENTIRE PRICE; CORRECT?

12 A YES.

13 Q NOT JUST THE PRICE OF THE BASEBAND PROCESSOR;
14 CORRECT?

15 A THAT IS CORRECT.

16 Q AND YOU UNDERSTAND THAT ONLY COSTS TEN BUCKS;
17 CORRECT?

18 A IF YOU DON'T COUNT THE I.P. IN IT, WHICH IS A
19 BIG ERROR IN MY VIEW, BUT IF YOU LEAVE THE I.P.
20 ALONGSIDE --

21 Q SIR, APPLE PAYS ABOUT TEN BUCKS; RIGHT?

22 A NO. THEY PAY A LOT MORE BECAUSE IT HAS PAY
23 MILLIONS OF DOLLARS TO GET ACCESS TO OTHER PEOPLE'S
24 TECHNOLOGY.

25 Q WE'LL SOON HEAR FROM AN APPLE WITNESS NAMED

1 TONY BLEVINS WHO'S GOING TO EXPLAIN THAT TO THE
2 JURY.

3 FOR RIGHT NOW, SIR, YOUR OPINION OF 2 TO
4 2.75 OF THE ENTIRE PRICE IS WHAT YOU'RE
5 RECOMMENDING TO THIS JURY FOR EVEN JUST ONE PATENT;
6 CORRECT?

7 A YES.

8 Q NOW, IF WE COMPARE THAT TO THE ORIGINAL
9 PORTFOLIO REQUEST, THE NUMBER OF PATENTS HAS GONE
10 DOWN; CORRECT?

11 A YES.

12 Q WE'VE GONE FROM 86 TO 1; CORRECT?

13 A YES.

14 Q AND 85 HAVE BEEN TAKEN AWAY; CORRECT?

15 A YES.

16 Q YET, ON THE HIGH END, YOUR ROYALTY WENT UP;
17 CORRECT?

18 A WENT UP FROM WHAT?

19 Q 2.4 PERCENT IS LESS THAN 2.7; CORRECT?

20 A YES, I CERTAINLY AGREE WITH THAT.

21 Q SO YOUR OPINION -- UNDER YOUR OPINION, APPLE
22 WOULD BE PAYING MORE FOR 85 FEWER PATENTS; CORRECT?

23 A IF IT WAS PAYING AT THE HIGH END. IF IT WAS
24 PAYING AT THE LOW END, IT WOULD BE PAYING LESS.

25 Q SIR, ON THE HIGH END, APPLE WOULD BE PAYING

1 MORE IN ROYALTIES FOR 85 FEWER PATENTS; CORRECT?

2 A I ALREADY SAID YES.

3 Q AND THAT'S YOUR BEST JUDGMENT AS TO WHAT'S
4 FAIR AND REASONABLE; CORRECT?

5 A GIVEN THAT WE'RE TALKING ABOUT PATENTS THAT
6 ARE PROVEN TO BE VALID AND INFRINGED, THEY'RE NOT
7 JUST ORDINARY PATENTS. THEY'RE ONES PROVEN VALID
8 AND INFRINGED FOR A U.S. ONLY LICENSE, WHICH
9 COMMANDS A PREMIUM.

10 Q SIR, THAT'S YOUR BEST JUDGMENT; CORRECT?

11 A IT IS.

12 MR. MUELLER: NO FURTHER QUESTIONS.

13 THE COURT: ALL RIGHT.

14 MS. MAROULIS: NO REDIRECT, YOUR HONOR.

15 THE COURT: ALL RIGHT. TIME IS NOW 1:13.

16 ALL RIGHT. IS THIS WITNESS EXCUSED AND
17 IS IT SUBJECT TO RECALL OR NOT?

18 MS. MAROULIS: HE'S SUBJECT TO RECALL.

19 THE COURT: OH, OKAY.

20 MR. MUELLER: YES.

21 THE COURT: OH, OKAY. THEN YOU ARE
22 EXCUSED SUBJECT TO RECALL.

23 THE WITNESS: THANK YOU.

24 MR. VERHOEVEN: YOUR HONOR, AT THIS POINT
25 THE SAMSUNG ENTITIES REST WITH THREE RESERVATIONS.