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

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION,	§	
Plaintiff,	§	**Case No. 6:11-cv-343**
v.	§	
CISCO SYSTEMS, INC.,	§	
Defendant.	§	

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This case involves a dispute over the appropriate damages owed by Cisco Systems, Inc. ("Cisco") to Commonwealth Scientific and Industrial Research Organisation ("CSIRO") for Cisco Systems, Inc.'s ("Cisco") alleged infringement of U.S. Patent No. 5,487,069 ("the '069 Patent"). The case was tried on the merits without a jury and was taken under submission. The Court has considered the testimony, exhibits, arguments of counsel, and supporting memoranda, and details its Findings of Fact and Conclusions of Law below pursuant to Federal Rule of Civil Procedure 52(a).[1] Also before the Court are CSIRO's Rule 52(c) Motion for Judgment on Cisco's RAND Affirmative Defense (Docket No. 308) and Cisco's Post-Trial Brief and Rule 52(c) Motion (Docket No. 318). The Court has considered the arguments advanced in each Motion. Because neither Motion seeks relief not addressed by this Order, both Motions are **DENIED AS MOOT**.

[1] To the extent that any conclusion of law is deemed to be a finding of fact, it is adopted as such; likewise, any finding of fact that is deemed to be a conclusion of law is so adopted.

BACKGROUND

The ’069 Patent has been the subject of litigation in this Court for almost a decade. CSIRO filed its first suit in this Court regarding the ’069 Patent in 2005 and has consistently been a party to an action involving this patent since that time. CSIRO is the principal scientific research organization of the Australian Federal Government and conducts scientific research to benefit Australia and the public at large. The ’069 Patent, filed on November 23, 1993, was issued to CSIRO on January 23, 1996. An *ex parte* reexamination certificate was issued on March 15, 2011. The ’069 Patent discloses a wireless LAN incorporating forward error correction, frequency-domain interleaving, and multi-carrier modulation, among other techniques to solve challenges to indoor wireless networking known as the “multipath” problem.[2] In 1999, the Institute of Electrical and Electronics Engineers (“IEEE”) ratified the 802.11a standard, which this Court has previously held embodies the core technology of the ’069 Patent. *Buffalo*, 492 F. Supp. 2d at 602. In 2003, the IEEE ratified the 802.11g standard, which also embodies the technology of the ’069 Patent. *Id.*

CSIRO filed this suit against Cisco on July 1, 2011 asserting infringement of the ’069 Patent. On March 19, 2013, the Court approved a joint stipulation by the parties to try this case solely as to damages, because liability would not be argued or contested. Docket No. 127 at 1–2. The parties further agreed the scope of accused products would be all products that practice any of the IEEE’s 802.11a, 802.11g, 802.11 draft-n, 802.11n, 802.11 draft-ac, or 802.11ac standards, made in, used in, sold in, offered for sale in, or imported into the United States by Cisco or its subsidiaries, and that did not incorporate a “Licensed Wi-Fi Chip.”[3] *Id.* at 2. Linksys products

[2] For a more detailed background on CSIRO and the ’069 Patent, *see Commonwealth Scientific & Indus. Research Org. v. Buffalo Tech. Inc.*, 492 F. Supp. 2d 600, 601–02 (E.D. Tex. 2007).

[3] The parties defined Licensed Wi-Fi Chips to include RM11a and Richfield chips (based on a previous settlement agreement between CSIRO and Cisco) and any chips supplied to Cisco by other parties that had entered settlement

are included in the accused products because of Cisco's acquisition of Linksys in 2003. Although both parties initially demanded a jury trial, in January 2014 the parties consented to a bench trial. Docket No. 237 at 1. Beginning on February 3, 2014, the Court conducted a four-day bench trial on the issues of appropriate damages and Cisco's affirmative defense of estoppel.

APPLICABLE LAW

A patentee is entitled to damages for infringement under 35 U.S.C. § 284. The burden of proving damages falls on the patentee. *Dow Chem. Co. v. Mee Indus., Inc.*, 341 F.3d 1370, 1381 (Fed. Cir. 2003). There are two alternative categories of monetary relief: the patentee's lost profits, and the reasonable royalty the patentee would have received through arms-length bargaining. *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009). To ascertain the reasonable royalty, patentees commonly consider a hypothetical negotiation, in which the asserted patent claims are assumed valid, enforceable, and infringed, and attempt to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began. *Id.* at 1324–25; *see also Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1554 n.13 (Fed. Cir. 1995) (en banc). Calculation of a reasonable royalty requires determination of two separate and distinct amounts: 1) the royalty base, or the revenue pool implicated by the infringement; and 2) the royalty rate, or the percentage of that pool "adequate to compensate" the plaintiff for the infringement. *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 286 (N.D.N.Y. 2009).

District courts frequently look to *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y.) for guidance on reasonable royalty damages assessment. *See Rite-Hite*, 56 F.3d at 1555, 1567, 1577 (approving the *Georgia-Pacific* analysis for determining reasonable

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agreements with CSIRO, including Intel Corp., Broadcom Corp., Marvell International Ltd., and Qualcomm Atheros Inc. Docket No. 125 at 5.

royalty damages). The *Georgia-Pacific* Court established fifteen factors to be considered in determining a reasonable royalty based on a hypothetical negotiation. 318 F. Supp. at 1120. The factors are: (1) "[t]he royalties received by the patentee for licensing of the patent-in-suit"; (2) royalties paid for other patents comparable to the asserted patents; (3) "[t]he nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold; (4) [t]he licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly; (5) [t]he commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter; (6) [t]he effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his nonpatented items; and the extent of such derivative or convoyed sales; (7) [t]he duration of the patent and the term of the license; (8) [t]he established profitability of the product made under the patent; its commercial success; and its current popularity; (9) [t]he utility and advantages of the [patented invention] over the old modes or devices, if many, that had been used for working out similar results; (10) [t]he nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention"; (11) the extent of the licensee's use of the patented invention "and any evidence probative of the value of that use; (12) [t]he portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions; (13) [t]he portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing

process, business risks, or significant features or improvements added by the infringer; (14) [t]he opinion testimony of qualified experts; and (15) [t]he amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license." *Id.* Despite these guiding principles, a reasonable royalty analysis "necessarily involves an element of approximation and uncertainty." *Unisplay, S.A. v. Am. Elec. Sign Co.*, 69 F.3d 512, 517 (Fed. Cir. 1995). Nevertheless, the trier of fact's conclusion must be supported by substantial evidence. *Lucent Techs.*, 580 F.3d at 1335.

ANALYSIS

Cisco's Estoppel Affirmative Defenses

Although the parties stipulated to try this case as to damages only, Cisco raised the affirmative defenses of legal and equitable estoppel, which could impact the damages determination. To establish a defense of equitable estoppel, Cisco must demonstrate that: (1) CSIRO communicated something in a misleading way by words, conduct, or silence; (2) Cisco relied upon that communication; and (3) Cisco would be materially harmed if CSIRO is allowed to assert any claim inconsistent with its earlier communication. *See A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1041 (Fed. Cir. 1992) (en banc). Legal estoppel requires that CSIRO granted Cisco certain rights, received consideration for those rights, and then sought

to derogate from the rights granted. *See Wang Labs, Inc. v. Mitsubishi Elecs. Am., Inc.*, 103 F.3d 1571, 1581 (Fed. Cir. 1997).

Cisco argues that CSIRO made a commitment to the IEEE to license the '069 Patent on reasonable and non-discriminatory ("RAND") terms if that patent was essential to practice the IEEE 802.11 standard. Docket No. 48 at 7–8. According to Cisco, CSIRO's RAND commitment estops CSIRO from seeking damages at a royalty rate above the rate set forth in the Technology License Agreement ("TLA") between CSIRO and Radiata Communications PTY, Ltd. ("Radiata") entered on February 23, 1998. *Id.* at 4.

CSIRO's RAND Commitment Regarding 802.11a

CSIRO's RAND commitment to the IEEE and its members with regard to the 802.11a standard is largely undisputed. In October 1998, prior to the ratification of the 802.11a standard, the IEEE requested a letter of assurance from CSIRO concerning the '069 Patent. DTX-54 at 1. On December 4, 1998, CSIRO assured the IEEE that if the '069 Patent was essential to practicing 802.11a, upon written request, CSIRO would grant any party a nonexclusive license to the '069 Patent on reasonable terms and at then-current royalty rates. DTX-55. Based on the bylaws of the IEEE, letters of assurance to the organization constitute binding contractual commitments to the IEEE and its members. *See, e.g., Apple, Inc. v. Motorola Mobility, Inc.*, 886 F. Supp. 2d 1061, 1083 (W.D. Wis. 2012); *Microsoft Corp. v. Motorola, Inc.*, 854 F. Supp. 2d 993, 999 (W.D. Wash. 2012). Neither party contests this.

CSIRO argues its 802.11a RAND commitment does not extend to Cisco because Cisco never made a written request for such a license, as required by CSIRO's letter of assurance to the IEEE. 02/06/2014 Trial Tr. at 52:25–53:7; 60:2–6. Cisco contends that due to its existing course of business with CSIRO, a formal written request was unnecessary and that Cisco's existing

payments to CSIRO under the TLA and ongoing discussions between the parties met or obviated any such requirement.[4] 02/05/2014 AM Trial Tr. at 19:9–21.

As this Court has previously held and as was demonstrated in this case, products that comply with the 802.11a standard practice the technology disclosed by the '069 Patent. *Buffalo*, 492 F. Supp. 2d at 602; 02/03/2014 PM Trial Tr. at 77:23–78:16. Accordingly, the '069 Patent is essential to practice the 802.11a standard. Further, due to the existing relationship and course of dealings between Cisco and CSIRO around the time of the hypothetical negotiations, Cisco met the requirement for a written request to invoke CSIRO's RAND obligation. Due to Cisco's 2001 acquisition of Radiata, Cisco was already paying CSIRO royalties under the TLA. 02/05/2014 AM Trial Tr. at 19:13. At the relevant time period, the two companies were already engaged in discussions concerning licensing the '069 Patent. *Id.* at 11–21. Additionally, CSIRO sent letters to several wireless industry companies, including Linksys, offering to license the '069 Patent on RAND terms, based on its commitment to the IEEE, essentially waiving any written request requirement. DTX-108; DTX-109; DTX-117. Therefore, at the time of the hypothetical negotiation, CSIRO was bound to offer Cisco a license on RAND terms for 802.11a products. Each party would have been aware of this obligation and it would have been a factor in the hypothetical negotiation.[5]

CSIRO's RAND Obligation Regarding Later 802.11 Revisions

CSIRO's RAND obligation regarding later amendments to the IEEE 802.11 standard, namely 802.11g, 802.11n, and 802.11ac is contested. CSIRO argues it never made a RAND commitment regarding the 802.11g or 802.11n amendments. 02/03/2014 AM Trial Tr. at 31:2–4. The IEEE requested letters of assurance from CSIRO concerning the '069 Patent before

[4] As discussed later, Cisco acquired Radiata in 2001 and became a party to the TLA agreement. *See infra* at 17.
[5] The effect of this factor is discussed later in this Opinion. *See infra* at 24–25.

adopting and ratifying the 802.11g and 802.11n amendments, however, CSIRO declined to grant such letters. 02/04/2014 PM Trial Tr. at 53:8–22; PTX-201; PTX-022 at 20136.

Cisco claims that based on letters sent to wireless industry participants in April and September of 2003, including Linksys, CSIRO agreed to license the '069 Patent on RAND terms as to 802.11g products. *See* DTX-109. Such letters stated: "The CSIRO patents cover products and methods for wireless networks which comply with at least IEEE Standards 802.11(a) and 802.11(g). The IEEE is aware of our patents, and we have agreed with the IEEE that we will grant licenses under the patents on a reasonable non-discriminatory basis." *Id.* Cisco contends these letters to industry participants indicate CSIRO believed it had a RAND commitment regarding all 802.11 standards and intended to offer licenses on RAND terms for 802.11 products infringing the '069 Patent. 02/03/201 AM Trial Tr. at 49:22–50:12. Based on this perceived commitment, Cisco now argues that it is entitled to a RAND rate for all 802.11g, 802.11n, and 802.11ac products.

The evidence shows that CSIRO made no RAND commitment to the IEEE or its members regarding 802.11g or later revisions to the 802.11 standard. 02/04/2014 PM Trial Tr. at 53:8–22; PTX-201; PTX-022 at 20136. Therefore, while CSIRO was free to offer licenses on RAND terms as to products practicing these revisions, it was not contractually obligated to do so. CSIRO's letters indicate its willingness to license on RAND terms and even a contractual offer to do so. However, it is a fundamental tenant of contract law that acceptance of an offer is required to create a contract. 2 Williston on Contracts § 6:1. Prior to litigation, no participant in the wireless industry sought a license from CSIRO, effectively rejecting the offer. Further, after its initial letters offering to license 802.11g products on RAND terms, CSIRO later clarified to recipients that it did not have any RAND obligation to those products. 02/03/2014 PM Trial Tr.

at 55:4–56:16; PTX-140; PTX-245. Because CSIRO provided no letter of assurance creating a binding RAND obligation, and because any voluntary offer by CSIRO to license the '069 Patent technology on RAND terms was rejected, was withdrawn, or lapsed, CSIRO has no RAND obligation to Cisco as to 802.11g, 802.11n, or 802.11ac products. Regardless of CSIRO's RAND commitment, at the hypothetical negotiations the parties would have sought a royalty that each believed accurately valued the '069 Patent.

Reasonable Royalty

Infringement and validity having been stipulated here, the Court must determine the proper damages to be awarded. The parties agree on many factors concerning the appropriate damages model in this case. The damages period for which Cisco is liable runs from July 1, 2005, six years before suit was filed, until November 22, 2013, the date the '069 Patent expired.[6] 35 U.S.C. § 286. They agree that a reasonable royalty is the best approach to determine damages here. The scope of accused products was agreed upon when the parties stipulated to a damages trial. Docket No. 125 at 4–6; *see supra* note 3. Additionally, although the parties disagree on whether end products or wireless LAN chips are the appropriate royalty base, they essentially agree that the total number of accused products is approximately 18,073,797 Linksys products and 1,471,319 Cisco products.[7] PTX-133-1. The parties also agree that a hypothetical negotiation would have occurred in May 2002 between Linksys and CSIRO and in October 2003 between Cisco and CSIRO. 02/04/2014 AM Trial Tr. at 29:4–10 (CSIRO's expert, James Malackowski); 02/06/2014 Trial Tr. at 9:12–10:3 (Cisco's expert, Christopher Bakewell).

[6] CSIRO asserted that the damages period should be extended 97 days—to begin March 27, 2005—due to a previous agreement between the parties. The date to begin the damages period was subject to a motion *in limine* and the Court ruled that the damages period was not extended by the agreement. 01/23/2014 Pretrial Tr. at 62:4–67:4 (Docket No. 295).

[7] Cisco bases its damages model on the total number of wireless LAN chips sold. Because some of the accused products contain more than one wireless chip, its total royalty base is higher: 24,775,816 wireless chips sold by Linksys and 1,471,308 for Cisco. DTX-179, Exs. 3.3, 4.3.

Further, both parties agree that at the hypothetical negotiation, the parties would have negotiated a reasonable royalty based on a tiered structure, with the royalty decreasing as sales volume increased. *See* 02/06/2014 Trial Tr. at 12:18–20.

CSIRO's Damages Model

CSIRO proposes a reasonable royalty of $30,182,922, calculated by applying a flat fee to each end product unit sold. CSIRO argues that Cisco and Linksys end products—that is, wireless network interface cards ("NICs"), routers, access points, and other wireless network devices—are the smallest saleable patent practicing unit ("SSPPU") because the end product is the only marketable unit which includes a baseband, radio chip, and antenna, all of which are required to practice the asserted claims. 02/04/2014 AM Trial Tr. at 9:17–11:1; *see also* 02/03/2014 PM Trial Tr. at 98:22–99:1. Based on this view, CSIRO calculates damages by attempting to determine the value added to these end products by the technology embodied in the '069 Patent. CSIRO relies on the report and testimony of its expert, Mr. James Malackowski, to perform this calculation and establish what CSIRO asserts is a reasonable royalty.

Central to CSIRO's model is its contention that the improved benefits of 802.11a and 802.11g over 802.11b products are primarily attributable to the technology of the '069 Patent. 02/03/2014 PM Trial Tr. at 100:2–6. CSIRO argues that functions of wireless devices not attributable to the '069 Patent, such as the MAC layer functionality, the network setup and configuration layer, and security features, are basically the same between the accused 802.11a, 802.11g, 802.11ab, and 802.11ag products and 802.11b products, which are not accused. *Id.* at 99:14–23. Based on this claim, CSIRO contends that the difference in profit Cisco captured between accused 802.11a and 802.11g products and unaccused 802.11b products largely represents the value attributable to the '069 Patent. 02/04/2014 AM Trial Tr. at 33:2–20.

To determine this value, Mr. Malackowski began his economic analysis by considering the historical prices of 802.11b, 802.11a, 802.11g, 802.11ab, and 802.11ag products around the time of the hypothetical negotiations. 02/04/2014 AM Trial Tr. at 32:11–15. He compared the profitability of accused 802.11a, 802.11g, 802.11ab, and 802.11ag products, such as wireless NICs and access points, to similar 802.11b products at a similar point in time. *Id.* at 33:2–8. Because the products had the same brand, manufacturing risks, packaging, security, and warranty, Mr. Malackowski argued, the only meaningful difference between the products he compared was the fact that one implemented the unaccused 802.11b standard and the other implemented either the accused 802.11a or 802.11g standard—the primary benefits of which are attributable to the '069 Patent. *Id.* at 33:9–20. Mr. Malackowski conducted his profit premium analysis separately for Linksys and Cisco products. *Id.* at 33:21–23. For each brand he separately compared accused 802.11a, 802.11g, 802.11ab, and 802.11ag end products to equivalent 802.11b products. *Id.* at 34:15–22. For Linksys products, Mr. Malackowski determined that the profit premium ranged from $6.12 to $89.93. *Id.* For Cisco products, the range was $14.00 to $224.00. *Id.* at 23–25.

Having conducted this first apportionment focused on *Georgia-Pacific* factors 9, 10, and 11, Mr. Malackowski then claims to have performed a second apportionment based on *Georgia-Pacific* factors 8, 12, 13, and a portion of factor 1. *Id.* at 37:16–38:2. For this apportionment, he looked for comparable license agreements and found none. *Id.* at 38:19–39:6. He then considered the commercial success and popularity of the accused products and determined that demand for 802.11g products quickly outstripped demand for 802.11b products, which virtually disappeared from the marketplace shortly after 802.11g products were introduced. *Id.* at 39:11–40:3. Under *Georgia-Pacific* factor 13, Mr. Malackowski focused on royalty stacking and

argued that at the time of the hypothetical negotiation Cisco believed the '069 Patent was the only significant patent it needed to consider with regard to royalties, therefore minimizing any risk of royalty stacking. *Id.* at 40:18–42:20.

Mr. Malackowski then turned to the remaining *Georgia-Pacific* factors: 2, 3, 4, 5, 6, 7, 14, and the balance of factor 1, which he testified were qualitative rather than based on hard data. *Id.* at 45:17–21. He argued factors 4 and 5 favored Cisco and Linksys, indicating a lower royalty, and that factors 8, 9, 10, and 11 would favor CSIRO, suggesting a higher royalty. *Id.* at 45:22–46:3. Factors 1, 2, 3, 6, 7, 12, 13, and 14 were neutral according to Mr. Malackowski, having no effect on the royalty. *Id.* at 46:3–6. Based on all the factors and the analysis he conducted, Mr. Malackowski then relied on his professional experience to determine the final royalty rates, which he concludes would be a volume-tiered rate table ranging from $1.35 to $2.25 per end product sold:

Total Units Sold	**Per Unit Royalty**
0 – 1 million units	$2.25
1 – 2 million units	$2.07
2 – 5 million units	$1.89
5 – 10 million units	$1.71
10 – 20 million units	$1.53
> 20 million units	$1.35

Id. at 46:17–47:5; PTX-133, Ex. 2. To determine actual damages, Mr. Malackowski multiplied the total number of Linksys products and Cisco products sold by the appropriate per unit royalty based on sales volume and determined that total damages are $27,974,493 for Linksys products and $2,208,429 for Cisco products, for a total of $30,182,922. PTX-133, Ex. 2.

Unfortunately, while some portions of Mr. Malackowski's report are informative, it suffers from several fatal flaws that greatly limit its utility to the Court in determining the

appropriate damages in this case. The problems with Mr. Malackowski's report extend to both his methodology and analysis.

First, Mr. Malackowski utilizes an inadequate sample size to perform his profit premium analysis. For Linksys products, Mr. Malackowski concludes that the initial profit premium range is from $6.12 to $89.93. *See* PTX-133. To arrive at this conclusion, he compares Linksys's profit on 802.11a, 802.11g, 802.11ab, and 802.11ag products against 802.11b products. The first step in calculating Linksys's profit for each type of product is examining the retail price of the products and then discounting that by retailer gross profit margins. PTX-133, Ex. 7. The problem here is that, according to Mr. Malackowski's report, he considered only a single product from each category of products compared, from a single retailer, at a single point in time. PTX-225. The exhibits included with Mr. Malackowski's report indicate that he used the "Wayback Machine" Internet archive website to research the prices of the various 802.11 products he used in his analysis on the CompUSA website in August 2003. *Id.* In order to draw reliable conclusions concerning the prices of 802.11 products based on a statistical sample, the sample size must be large enough to support those conclusions. Here, a single price point, from a single retailer, at a single point in time is insufficient to support the profit premium outcomes Mr. Malackowski uses as the basis for his analysis. Further, since CSIRO's argument for its proposed royalty is based largely on consumer demand for the improvements provided to 802.11 products by the '069 Patent, price is a critical component of CSIRO's model, and one not adequately evaluated in the evidence CSIRO has presented.[8]

An additional problem arises with Mr. Malackowski's use of retailers' gross profit margins. PTX-133, Ex. 7. To determine Linksys's price premium, he discounts the retail price

[8] For example, one exhibit submitted indicates that CompUSA was offering a $10.00 mail-in rebate in August 2003. PTX-225-F. Although the price considered by Mr. Malackowksi is the pre-rebate price of $79.99, the end price for a savvy consumer was only $69.99 after redeeming the rebate. *Id.*

by the retailer's gross profit margin. *Id.* As discussed above, Mr. Malackowski considered the retail price of products on the CompUSA website in August 2003. However, in determining the retailer gross profit margin he averages the 2001-2003 average gross margins of Amazon, Office Depot, Circuit City, Staples, and Best Buy. PTX-133, Ex. 7.5. Since Mr. Malackowski used CompUSA's prices in his analysis, it stands to reason that CompUSA's profit margin would be the most relevant; however, it is not even considered in his analysis.

A more fundamental problem with Mr. Malackowski's methodology becomes obvious simply by considering the initial profit premiums. For Linksys products, Mr. Malackowski's initial profit premium for accused products versus unaccused products ranges from $6.12 to $89.93, a range of over $83. PTX-133, Ex. 8. For Cisco products, the disparity is even greater, with a range of $14.27 to $224.25, or almost $210. *Id.* Although these ranges are only Mr. Malackowski's starting point, the broad disparities indicate the inherent unreliability of this method. With such broad ranges, it is impossible to reliably determine where the value of the patented technology lies.

Significantly compounding these problems is the arbitrary nature of the final apportionment. As Mr. Malackowski testified, with no hard data to consider for *Georgia-Pacific* factors 1, 2, 3, 4, 5, 6, 7, and 14, he can consider these factors only qualitatively. 02/04/2014 AM Trial Tr. at 45:17–21. To arrive at his final royalty rates, Mr. Malackowski "leverages [his] experience in teaching licensing courses and conducting licensing negotiations and having evaluated damages hundreds of times" to reduce his initial ranges of $6.12 to $89.93 for Linksys products and $14.27 to $224.25 for Cisco products to a final royalty range of $1.35 and $2.25. *Id.* at 46:17–47:5. A reliable expert opinion must "carefully tie proof of damages to the claimed invention's footprint in the market place." *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292,

1317 (Fed. Cir. 2011). Although Mr. Malackowski purports to do this, his drastic final apportionment is arbitrary, capricious, and supported by no sound economic methodology.

The lack of economic rigor in Mr. Malackowski's second apportionment is evident in his failure to quantify and fully consider differences not attributable to the '069 Patent when comparing 802.11a, 802.11g, 802.11ab, and 802.11ag products to 802.11b products. For example, 802.11g is backwards compatible with 802.11b, a feature not specifically attributable to the '069 Patent, but which adds value to the consumer. 02/04/2014 PM Trial Tr. at 20:1–4. Products practicing 802.11a operate on a 5 GHz frequency while 802.11b products operate at 2.4 GHz, a factor which decreases range, but allows for less interference. *Id.* at 21:11–22:6. Security and encryption, the MAC layer, and radio functionality all improved over time as newer revisions of the 802.11 standard were implemented. *Id.* at 8:24–9:5. When pressed about how he accounted for these changes—none of which are attributable to the '069 Patent—Mr. Malackowski was unable to cite any quantitative analysis from his report. *Id.* at 9:9–12:23. As Mr. Malackowski testified, "I didn't make . . . specific percentage calculations. That isn't part of my analysis as a math exercise." *Id.* at 11:25–12:3. While Mr. Malackowski explained that these factors were accounted for in his analysis qualitatively, he was unable to cite any objective data in his report that apportions these non-patented features. *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 69 (Fed. Cir. 2012) (rejecting expert's apportionment factor that appeared to have been "plucked out of thin air based on vague qualitative notions of the relative importance" of the patented technology).

Finally, the fact that Mr. Malackowski's final rates are higher than rates offered to the wireless industry by CSIRO shortly after the hypothetical negotiation dates in this case further undermine the reliability of his report. By at least June 2004, CSIRO had developed its

Voluntary Licensing Program, through which it offered licenses to the '069 Patent to wireless industry companies. PTX-206. In June 2004, CSIRO contacted Cisco with an offer to license the patent on the terms it had developed as part of this program. PTX-143. The royalty proposed under that license was a flat-fee royalty, charged per end product unit sold, with discounts based on the cumulative volume of units sold. *Id.*, Ex. A. CSIRO also offered discounts based on how quickly Cisco accepted the offer, with the largest discount available if it was accepted within 90 days of the offer, decreasing to a very little discount if it was accepted later than 180 days after the offer. *Id.* This was CSIRO's proposed royalty structure at that time:

	Royalty per product sold				
Days from offer to acceptance:	< 90	< 120	< 150	< 180	> 180
Sales Volume					
0 – 1 million	$1.90	$2.38	$2.85	$3.33	$3.80
1 – 2 million	$1.80	$2.25	$2.70	$3.15	$3.60
2 – 5 million	$1.70	$2.13	$2.55	$2.98	$3.40
5 – 10 million	$1.60	$2.00	$2.40	$2.80	$3.20
10 – 20 million	$1.50	$1.88	$2.25	$2.63	$3.00
> 20 million	$1.40	$1.75	$2.10	$2.45	$2.80

Id. at ex. A. Including the discount for early acceptance, the rates CSIRO offered ranged from $1.40 to $1.90 per end unit.[9] *Id.* CSIRO's Voluntary Licensing Program indicates that CSIRO would have readily accepted rates in that range for a license to the '069 Patent very shortly after the hypothetical negotiation dates here. Yet, Mr. Malackowski proposes that at the time of the hypothetical negotiations the parties would have agreed to rates ranging from $1.35 to $2.25 per unit. PTX-133, Ex. 2. Illogically, Mr. Malackowksi proposes that at the hypothetical negotiations CSIRO and Cisco would have agreed to prices higher than CSIRO's asking price.

[9] It is reasonable to infer that if Cisco had begun good faith negotiations with CSIRO within 90 days of the offer, CSIRO would have continued to offer the lowest rates past this deadline due to Cisco's market position and the ongoing relationship between CSIRO and Cisco.

The numerous shortfalls in Mr. Malackowski's report render CSIRO's damages model unreliable for purposes of calculating damages here. There are methodological problems with the profit premium analysis that form the basis of the report, including inadequate sample size and vast initial ranges. Compounding these methodological errors are analytical problems, most especially the failure to adequately apportion, in a quantifiable manner, differences between the accused and unaccused products based on factors not attributable to the '069 Patent. Accordingly, the Court attributes little weight to the damages model proposed by CSIRO in this case.

Cisco's Damages Model

Cisco proposes a damages model with a royalty based on a percentage of wireless LAN chip prices for each chip sold, with the percentage rates capped at the royalty rates included in the Technology License Agreement ("TLA") entered by CSIRO and Radiata on February 23, 1998. 02/06/2014 Trial Tr. at 14:1–8; *see also* PTX-10. Essentially adopting the rates of the TLA, Cisco proposes total damages of no more than $1,100,000, based on the total chips sold in accused Linksys and Cisco products. 02/06/2014 Trial Tr., Sealed Portion 11, at 18:20–22; *see also* Docket No. 250-1, Bakewell Second Supplemental Report, Exs. 3.3, 4.3.

The 1998 TLA included a license to the '069 Patent and established royalty rates Radiata paid CSIRO based on a percentage of the chip price for each chip that Radiata sold. PTX-10 at 12. The rates included a tiered volume discount which decreased the royalty percentage as the volume of chips sold increased. *Id.* The TLA rates for "Derivative Chips"—i.e., chips not based on pre-existing designs provided to Radiata by CSIRO—were:

Sales Volume	**Percentage of Chip Price**
1 – 100,000	5.0%
100,001 – 400,000	4.0%
400,001 – 1,000,000	3.0%
1,000,001 – 3,000,000	1.0%
> 3,000,001	0.5%

Id. In 2001, Cisco acquired Radiata and began making royalty payments to CSIRO under the terms of that agreement.[10] Cisco argues that the TLA is an actual, real-world license, negotiated at arm's length, not clouded by litigation, and occurring prior to inclusion of the '069 Patent in any 802.11 standard and prior to the hypothetical negotiations. 02/03/2014 AM Trial Tr. at 42:9–43:19; *see also* 02/06/2014 Trial Tr. at 15:16–16:3. According to Cisco, these factors isolate the value of the patented technology. 02/06/2014 Trial Tr. at 16:4–7.

Cisco further contends that the royalty rates established by the TLA were reaffirmed in the period leading up to the hypothetical negotiation, and therefore the TLA is the best evidence of what CSIRO and Cisco would have agreed to at their hypothetical negotiations. 02/06/2014 Trial Tr. at 14:3–6. In February 2001, the TLA was amended to make Cisco a party to the agreement after Cisco acquired Radiata. *Id.* at 22:17–23:2. Cisco emphasizes that despite the renegotiation that occurred during these amendments, the use of the chip as the royalty base, the royalty structure, and the royalty rates did not change. *Id.* at 23:1–6. The agreement was amended again in 2003 when Cisco sublicensed the manufacturing of chips under the TLA to Marvell. PTX-50 at 3. Because neither CSIRO nor Cisco suggested changing the TLA royalty structure or rates in these amendments, Cisco argues both parties must have agreed that the rates were appropriate and properly compensated CSIRO for a license to the '069 Patent. Also, Cisco contends that because the inventive aspects of the '069 Patent are solely executed by the

[10] It is not contested that any Linksys or Cisco products containing chips licensed under the TLA are not accused in this case, since a royalty has already been paid on them.

physical, or PHY, layer of a baseband wireless chip, the chip is the unit most closely tied to the invention and thus chip price is the most appropriate royalty base. *E.g.*, 02/03/2014 AM Trial Tr. 40:20–41:9; 02/05/2014 PM Trial Tr. at 107:10–109:3; 02/06/2014 Trial Tr. 33:15–21.

Cisco's expert on damages, Christopher Bakewell, used the TLA royalty rates and volume discount tiers as the basis for his proposed royalty. Docket No. 250-1 at 176, 182, Bakewell Second Supplemental Exs. 3.5, 4.5. Mr. Bakewell first calculated the weighted average chip cost for both Linksys and Cisco products during the damages period. *Id.* at 190–91, 200, Exs. 5.3, 6.3. He did this by multiplying the number of each specific type of chip sold in Linksys and Cisco products during the relevant time period by the price per chip. *Id.* Mr. Bakewell then multiplied the weighted average chip cost plus antenna cost by the royalty rates from the TLA.[11] *Id.* at 176, 182, Exs. 3.5, 4.5. This provided Mr. Bakewell's royalty for each volume discount tier based on the weighted average chip cost. For Linksys, the royalty rates ranged from $0.04 to $0.37 per chip. *Id.* The rates for Cisco ranged from $0.03 - $0.33 per chip. *Id.* These effective royalty rates were then multiplied by the total chip sales over the damages period at the applicable volume discount rates. *Id.* at 174, 180, Exs. 3.3, 4.3.

Using this method, Mr. Bakewell proposed a maximum royalty of just over $900,000 for Linksys products and just over $150,000 for Cisco products. *Id.* Cisco argues these figures represent the highest royalty it could owe, and further contends there are strong justifications to discount these values. *See, e.g.*, Sealed Portion No. 11, Trial Tr. at 16:1–5 (Mr. Bakewell testifying that he included the cost of an antenna in his royalty despite the fact that the inventive aspects of the '069 Patent reside in the chip); 02/06/2014 Trial Tr. at 31:6–22 (Mr. Bakewell

[11] Mr. Bakewell included antenna cost in his analysis because the claims technically require an "antenna means" and a chip alone would not technically infringe the asserted claims. *See* 02/03/2014 PM Trial Tr. at 75:16–23; Sealed Portion 11, Trial Tr. at 15:32–16:18.

explaining that CSIRO agreed to pay Macquarie University 25% of the royalties from the TLA because only 75% of the royalties were attributable to the '069 Patent).

Unfortunately, as with Mr. Malackowski's report and CSIRO's damages model, Mr. Bakewell's report and Cisco's model is informative, but ultimately of limited use to the Court in determining the appropriate damages here. Cisco's model essentially adopts the royalty rates established in the TLA entered by CSIRO and Radiata in 1998, however Cisco's reliance on the TLA as a reasonable rate that CSIRO and Cisco would have negotiated in 2002 and 2003 is misplaced.

Although CSIRO and Cisco were both eventually parties to the TLA, the TLA is simply not comparable to the license CSIRO and Cisco would have negotiated for the bulk of Cisco's products. Radiata was specifically formed by Macquarie University professors David Skellern and David Weste, along with CSIRO scientist and '069 Patent inventor Terry Percival, to commercialize the technology of the '069 Patent. 02/03/2014 AM Trial Tr. at 89:14–90:1. During its life, various other CSIRO researchers and at least one other named inventor of the '069 Patent worked for Radiata. 02/03/2014 PM Trial Tr. at 7:8–12. CSIRO and Radiata had an ongoing relationship that included intellectual property rights, research and development contracts, and even Radiata's use of office and laboratory space at CSIRO. *Id.* at 10:12–11:3. CSIRO had an interest in commercializing the wireless LAN technology of the '069 Patent. *Id.* at 7:13–20. Radiata needed rights to CSIRO's intellectual property to help CSIRO accomplish that goal. *Id.* at 7:3–5. The connection between CSIRO and Radiata created a special relationship that belies the view that the negotiations leading to the TLA were purely disinterested business negotiations.

The terms of the TLA further indicate that the royalty it established was only one small part of the relationship created by the agreement. The TLA was a development contract and includes provisions dedicated to that purpose. For example, CSIRO did not merely grant Radiata a license to the '069 Patent, but provided Radiata with circuit diagrams, HDL code, and test suites for their chip design. PTX-10 at 12. Radiata was also entitled to a license to the technology of another wireless project CSIRO and Macquarie University were engaged in. *Id.*; 02/03/2014 PM Trial Tr. at 7:21–8:5. In addition to the royalty payments, Radiata had significant obligations to CSIRO, including disclosing its business plans concerning the patented technology, a requirement to use its best efforts to exploit the technology, and minimum performance obligations. PTX-10 at 4. CSIRO was also entitled to a royalty-free license to any improvements Radiata contributed to the technology and an assignment of all rights in those improvements upon termination of the TLA. *Id.* at 6.

Another obstacle to relying on the TLA rates is the timing of the agreement. The TLA was executed in 1998. PTX-10 at 2. The hypothetical negotiations in this case took place in 2002 and 2003. Drastic changes took place in the wireless marketplace during that time period. Commercial viability of the technology escalated sharply as the 802.11a revision was adopted in September 1999, over eighteen months after the TLA was signed, and received a greater boost when the 802.11g revision was ratified in June 2003.[12] The first commercially successful consumer wireless LAN access points and NICs were introduced in this interim. CSIRO and Cisco hypothetically negotiated in a very different wireless landscape than existed when the TLA was adopted in 1998.

[12] This is not an indication that the value of the '069 Patent increased solely because it was included in the standard. Rather, the wireless marketplace as a whole benefited from the adoption of standards.

Finally, the primary problem with Cisco's damages model is the fact that it bases royalties on chip prices. CSIRO did not invent a wireless chip. Although it is largely undisputed that the inventive aspect of the '069 Patent is carried out in the PHY layer of the wireless chip, the chip itself is not the invention. The '069 Patent is a combination of techniques that largely solved the multipath problem for indoor wireless data communication. The benefit of the patent lies in the idea, not in the small amount of silicon that happens to be where that idea is physically implemented. Compounding this problem is the depression of chip prices in the damages period resulting from rampant infringement which occurred in the wireless industry. 02/04/2014 AM Trial Tr. at 26:3–18. Prior to 2008, outside of the Radiata TLA, no company in the industry sought a license from CSIRO to the '069 Patent and CSIRO received no royalties whatsoever for that technology. 02/03/2014 PM Trial Tr. at 38:21–24; 02/03/2014 AM Trial Tr. at 46:14–21. It is simply illogical to attempt to value the contributions of the '069 Patent based on wireless chip prices that were artificially deflated because of pervasive infringement. Basing a royalty solely on chip price is like valuing a copyrighted book based only on the costs of the binding, paper, and ink needed to actually produce the physical product. While such a calculation captures the cost of the physical product, it provides no indication of its actual value.

Cisco's overreliance on the TLA discredits its entire damages model. Cisco and Radiata presented very different situations for CSIRO and there is no evidence that CSIRO would have entered an agreement similar to the TLA to cover all Cisco products. As with CSIRO's own model, the deficiencies in Cisco's damages model renders it unreliable for the purpose of calculating damages here.

Later CSIRO Licenses

Much of the testimony at trial concerned later license agreements between CSIRO and other parties. Both experts contended that because none of these license agreements were entered before 2008, they were not relevant to what the parties would have negotiated in 2002 and 2003. 02/06/2014 Trial Tr. at 62:15–63:4. The Court agrees. These licenses came much later in time. Most of them arose in the context of settling litigation. While some of these licenses were with end product manufacturers, others were with chip makers. Although here only U.S. sales are at issue, almost all of these later licenses were worldwide in scope and also included licenses to CSIRO intellectual property other than the '069 Patent. Finally, the volume of sales for each license varied widely, from 321 units to over 3 billion units. *See* DTX-192, DTX-193, DTX-194. In accordance with Federal Circuit precedent and due to a lack of any reasonable comparability to the hypothetical negotiation CSIRO and Cisco would have entered, the Court places no weight on these licenses for determining or validating a reasonable royalty.[13] *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 77–78 (Fed. Cir. 2012) (sharply questioning reliance on settlement agreements in establishing reasonably royalties, especially those entered several years after the hypothetical negotiation date).

Hypothetical Negotiation

Left with little guidance from the parties, the Court must evaluate the evidence to determine a viable damages calculation. The parties agree that the hypothetical negotiation would have taken place in May 2002 for Linksys and in October 2003 for Cisco. The Court adopts those dates. A hypothetical negotiation assumes the asserted patent claims are valid and

[13] The parties and their experts purported to use these licenses as a "reasonableness check." 02/04/2014 AM Trial Tr. Sealed Portion 5 at 3:9–11; 02/06/2014 Trial Tr. Sealed Portion 11 at 23:8–12. The vast difference in the conclusions each party's expert drew from the exact same license agreements belies their use even for that purpose. As shown by each expert's calculations, these license agreements can be manipulated to support almost any preconceived notion.

infringed. *Lucent Techs.*, 580 F.3d at 1325. Accordingly, the Court need not "discount" the hypothetical rate due to uncertainty regarding validity or infringement.

In a hypothetical negotiation between CSIRO and Cisco, the parties almost certainly would have based a royalty on the sales volume of end products. As previously discussed, shortly after the hypothetical negotiation dates, CSIRO developed its Voluntary Licensing Program. PTX-206. Thus, by June 2004, at the time of the hypothetical negotiations, CSIRO undoubtedly had already adopted many of the concepts behind this program. *Id.* Under the program, CSIRO's goal was to negotiate licenses to the '069 Patent based on finished 802.11 products, such as access points, NICs, and consumer electronics. *Id.* at 8. CSIRO did not believe that components, such as chips, directly infringed and it preferred not to deal with variable suppliers, such as chipset manufacturers. *Id.* at 8–9. Further, since 2009 CSIRO has entered into a number of license agreements for the '069 Patent. *See* DTX-235; DTX-236; DTX-237. While some of these licenses include a flat-rate royalty on end products, there is not a single example that explicitly requires a royalty on the number of chips sold or based on a percentage of chip price. *E.g.*, DTX-237(i); DTX-237(j); 237(k); 237(*l*) (each applying a flat fee royalty payment per end product unit sold). Although these licenses were entered post-hypothetical negotiation, they are indicative of how CSIRO prefers to license its intellectual property. *See Lucent Techs.*, 580 F.3d at 1333–34 (recognizing that courts may consider the "book of wisdom"—post-infringement evidence that may be probative under certain circumstances). Accordingly, a flat rate on each Linksys and Cisco end product sold is the most appropriate royalty and will be applied here.

Lacking reliable external market data, the most reasonable starting points for the royalty rates are based on data points from the parties as close to the hypothetical negotiation dates as

possible. *Id.* CSIRO's Voluntary Licensing Program offered willing licensees rates of $1.40 to $1.90 based on sales volume. PTX-206. Although this program was developed after the hypothetical negotiation dates, the rates were based on a valuation study CSIRO commissioned in 2003 and are indicative of the rates CSIRO would have asked for in 2002 and 2003. *See id.* In fact, CSIRO actually offered these exact rates to Cisco in June 2004. PTX-143. Similarly, in October 2005, Dan Lang of Cisco suggested to Denis Redfern of CSIRO—without making a formal offer—the possibility of Cisco paying CSIRO $0.90 in royalties per Cisco enterprise product. 02/04/2014 PM Trial Tr. 48:10–50:2; PTX-79. During this discussion, Mr. Lang mentioned that royalty rates on Linksys products would be discussed later. *Id.* Although not a formal offer, and again, occurring after the hypothetical negotiation dates, Mr. Lang's suggestion is the best evidence available of how Cisco valued the contribution of the '069 Patent near the relevant time period and is the best indicator of Cisco's possible bid price at the time of the hypothetical negotiations. *See id.* Based on these data points, a range of $0.90 to $1.90 is a reasonable starting point for negotiations between the parties in 2002 and 2003.

With these starting points in mind, the *Georgia-Pacific* factors determine what adjustments to these initial rates are appropriate. This is the most common approach applied by courts to determine a reasonable royalty and was used by both parties in developing their own damages models here. As previously discussed, CSIRO had a binding obligation to license the '069 Patent on RAND terms with regard to 802.11a products. *See supra* at 4–7. Although other courts have made specific adjustments to the *Georgia-Pacific* factors to take a RAND commitment into account, specific adjustments to the overall framework are not necessary here. *See, e.g.*, *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11-C-9308, 2013 WL 5593609, at *5–8 (N.D. Ill. Oct. 3, 2013); *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823,

2013 WL 2111217, at *18–20 (W.D. Wash. Apr. 25, 2013). In this case, 802.11a products make up an incredibly small percentage of the total products at issue. *See* Docket No. 250-1 (Bakewell Second Supplemental Report) at Exs. 5.1, 6.1 (listing sales of end products in the damages period and indicating that under 0.03% consisted of products practicing only 802.11a). Accordingly, a modified analysis as to only those products would have a *de minimis* impact on the overall royalty. Nonetheless, the parties would have been cognizant of CSIRO's RAND commitment regarding 802.11a at the time of the hypothetical negotiations. *See* 02/03/2014 PM Trial Tr. at 41:8–11. Therefore, the RAND commitment will be considered where appropriate throughout the analysis.

In this case, several of the factors are neutral and warrant little discussion. Both CSIRO's expert, Mr. Malackowski, and Cisco's expert, Mr. Bakewell, agree that Factors 1, 2, 6, 7, 12, and 13 are neutral. Docket No. 250-3 (Bakewell Expert Report) at 166, 167, 172–73, 173, 198, 205, 213; Docket No. 250-2 (Malackowski Expert Report) at 108, 111, 115, 116, 216, 230. Based on the evidence, the Court agrees these factors are neutral and no adjustment to the baseline royalty rate needs to be made in light of these factors.

Factor 3 considers the nature and scope of the license. Although not explicit, it is reasonable to infer that both Cisco's suggested royalty rate and CSIRO's Voluntary Licensing Program assumed a worldwide license. *See* PTX-79; PTX-206 at 4. Since the Court is considering damages only for infringing sales in the United States, this factor favors adjusting the baseline rates downward.

Factor 4 looks at the licensor's established policies and marketing programs. Here, CSIRO was very willing to license the patented technology, sending offer letters to many wireless industry firms. 02/03/2014 PM Trial Tr. at 25:1–26:3. Further, under its RAND

obligation, CSIRO had a binding commitment to license the ’069 Patent with regard to 802.11a products. The Court agrees with both experts that this factor favors a downward adjustment of the baseline rates.

Factor 5 focuses on the commercial relationship existing between CSIRO and Cisco. In this case, the parties are not competitors. CSIRO is a government organization focused on research and development. Cisco and Linksys engage in the marketing and sale of information technology products. CSIRO needed to license the ’069 Patent in order to commercialize and monetize it. Accordingly, this factor favors a downward adjustment of the rates.

Factor 8 considers the profitability of the product practicing the patent, its commercial success, and its current popularity. At the time of the hypothetical negotiations, the market for wireless products was growing rapidly, indicating increased commercial success. Docket No. 250-2 at 114. The technology of the ’069 Patent allowed for wireless data transmission at higher speeds and greater distances compared to existing technology. Although this was not the only factor contributing to the growth of 802.11g products, it was an important one. Further, the IEEE continued to rely on the methods espoused by the ’069 Patent in later 802.11 revisions, despite the fact that CSIRO declined to issue letters of assurance and in the face of ongoing litigation involving the patent. The ’069 Patent therefore played a significant role in the commercial success of 802.11 products. Accordingly, this factor favors an upward adjustment of the royalty rates.

Factors 9 and 10 are often considered together and take into account the utility and advantages of the patented product over older modes and devices and the nature of the patented intellectual property, the character of the commercial embodiment of the patent, and the benefits to those who have used the invention. In the ’069 Patent, CSIRO combined several existing

techniques and ideas in a novel way to solve the multipath problem of indoor wireless data transmission. 02/03/2014 AM Trial Tr. at 75:15–77:3; 02/03/2014 PM Trial Tr. at 68:4–11. This solution offered significant improvements to the state of the art, including higher speeds, increased capacity, lower power consumption, and improved scalability. 02/03/2014 PM Trial Tr. at 83:6–24. Alternative technologies in the wireless industry, such as PBCC, MBCK, and PPM, failed to achieve commercial success. *Id.* at 93:5–95:23. As previously discussed, despite several revisions to the 802.11 standard over a period of more than a decade, the core technology of the ’069 Patent has remained integral to the standard. Based on the clear benefits the patent has provided to the industry, this factor favors an upward adjustment of the baseline royalty rate.

Factor 11 examines the extent to which the infringer has made use of the invention and evidence probative of the value of the use. The patented technology here has been incorporated into every non-802.11b wireless product sold by Cisco. However, the evidence supporting the value of the use is largely accounted for in the baseline rates. The rate Cisco proposed indicated the value it attributed to the patented technology. Similarly, CSIRO’s asking price would have necessarily included the value it placed on the patent. Accordingly, this factor is neutral.

Factor 13 considers the portion of profit realizable that is creditable to the invention. Here, the ’069 Patent played a significant role in the profitability of wireless products, as has been discussed. However, Cisco’s role in that profitability should not be diminished. Cisco assumed the business risk associated with developing, testing, manufacturing, marketing, selling, and supporting the accused products. Further, all of the accused products contain many features and functions that are in no way attributable to the ’069 Patent. Therefore, the Court agrees with both experts that this factor is neutral. Docket No. 250-1 at 213; Docket No. 250-2 at 230.

Factor 14 looks to the opinion testimony of qualified experts. In this case, each party provided a qualified expert witness. Those experts examined the same set of evidence and came to vastly different conclusions. Due to flaws in each expert's analysis, the Court gives very little weight to either expert's conclusion. Accordingly, this factor is neutral.

Factor 15 is the outcome of the hypothetical negotiation. Here, factors 1, 2, 6, 7, 11, 12, and 13 are neutral. Factors 3 and 4 favor a downward adjustment, while factors 8, 9, and 10 favor an upward adjustment. With the sum of the factors essentially in equipoise, CSIRO and Cisco would have been in substantially equal bargaining positions at the hypothetical negotiations. Accordingly, no overall adjustment is needed to the baseline rates and a range of $0.90 to $1.90 is the appropriate outcome of the hypothetical negotiation here.

An additional adjustment is necessary for Linksys products. As previously discussed, Cisco's Dan Lang proposed a rate of $0.90 for Cisco products, with a rate for Linksys products to be discussed later. Because Linksys consumer products have a lower profit margin than Cisco enterprise products, it is reasonable to infer that Cisco would very likely have sought a lower royalty rate for Linksys products. The Wireless Network Business Unit of Cisco had a gross profit margin of 43.1% for fiscal year 2003. Docket No. 250-2, Ex. 14.1. Linksys's gross profit margin in 2002 was 31.1%. *Id.* at Ex. 14.2. A reduction in the royalty rates equal to the proportional difference in profit margin is appropriate. In light of Linksys's 27.4% lower profit margin, the appropriate range for Linksys products is therefore the Cisco range discounted by 27.4%, resulting in a range of $0.65 to $1.38.

CSIRO proposed discounts equally distributed across six volume-based tiers. *See supra* at 12. The Radiata TLA included a similar volume-discount structure, though at much lower volume levels. *See supra* at 17. Although Cisco proposed adopting the TLA volume tiers here,

due to Cisco's vastly different role in the wireless market than Radiata, the TLA volume tiers are not appropriate for Cisco. Combined Linksys and Cisco sales easily reached the TLA's highest volume discount tier of 3 million units by 2004, very shortly after the hypothetical negotiations and long before the expiration of the patent. *See* Docket No. 250-1 at Ex. 2.1; *see also* 02/04/2014 PM Trial Tr. at 28:5–29:18. Based on Cisco's much higher expected sales volume compared to Radiata, CSIRO's proposed volume discount tiers from its Voluntary Licensing Program are much more appropriate.

Using the tiers from CSIRO's Voluntary Licensing Program and applying the discount proportionally across the ranges adopted here, $0.65 to $1.38 for Linksys products and $0.90 to $1.90 for Cisco products, the following rate table results:

	Royalty per unit sold	
Sales Volume	**Linksys**	**Cisco**
0 – 1 million:	$1.38	$1.90
1 – 2 million:	$1.23	$1.70
2 – 5 million:	$1.09	$1.50
5 – 10 million:	$0.94	$1.30
10 – 20 million:	$0.80	$1.10
> 20 million:	$0.65	$0.90

Sales volume is not disputed and the volume discounts apply beginning at the time of the hypothetical negotiations. Therefore, the royalty calculations begin in 2004. Appendix A shows the total sales for Linksys and Cisco products beginning in 2004, split across the volume discount tiers of the royalty rate table.[14] By multiplying the appropriate royalty rate by the number of products sold in each volume tier, the total royalties Cisco would have paid from 2004 until patent expiration in 2013 equal $19,516,438 for Linksys products and $2,466,817 for Cisco products. *See* Appendix A. However, the statutory damages period began on July 1, 2005, six

[14] Following Mr. Malackowski's suggestion, Linksys and Cisco product sales are totaled for purposes of the volume sales tiers. 02/04/2014 AM Trial Tr. at 49:21–23.

years prior to the filing of this suit. 35 U.S.C. § 286; *see supra* at 8–9, n.5. Accordingly, damages owed on sales prior to July 1, 2005 must be subtracted from the total royalty amount to determine the proper damages. Royalties attributable to sales prior to July 1, 2005 equal $4,844,388 for Linksys products and $895,798 for Cisco products. Subtracting these pre-damage period royalties from the total royalties leaves damages owed of $14,672,050 for Linksys products and $1,571,019 for Cisco products. Total damages owed to CSIRO by Cisco are therefore $16,243,069.

CONCLUSION

Having considered all the evidence and for the reasons stated herein, a reasonable royalty based on hypothetical negotiations between CSIRO and Cisco would have resulted in a flat rate assessed per infringing end product unit sold with an increasing discount based on total volume of products sold. Applying this to the undisputed royalty base, the Court awards damages to CSIRO for Cisco's stipulated infringement of the '069 Patent in the amount of $16,243,067. Although CSIRO does have a RAND obligation to Cisco regarding 802.11a products, that obligation does not change the calculation of the damages awarded. Cisco is entitled to no further relief based on its affirmative defenses.

CSIRO is also entitled to prejudgment interest. The parties are **ORDERED** to meet and confer in good faith to determine the appropriate interest rate and amount within thirty days of this Order. If the parties reach agreement, they **SHALL** file notice with the Court within forty-five days of this Order. If no agreement is reached, the parties **SHALL** file a joint statement of up to fifteen pages outlining each party's position within forty-five days of this Order.

Also, after considering the parties' Rule 52(c) Motions, all relief requested in those Motions has been addressed herein. Accordingly, both Motions are **DENIED AS MOOT**.

So ORDERED and SIGNED this 23rd day of July, 2014.

LEONARD DAVIS
UNITED STATES DISTRICT JUDGE

Appendix A

[REDACTED]