

I. INTRODUCTION

Marvell's Reply Brief further betrays its motions as nothing more than a desperate attempt to avoid enhanced damages. Marvell (again) entirely ignores the JMOL and new trial standards under which the Court must review the jury's validity, infringement, and subjective willfulness findings. Instead, Marvell distorts the record in a futile effort to rehabilitate the unreasonable defenses it presented at trial and resorts to fanciful conjecture to shore up its argument that it infringed in "good faith." Marvell's baseless trial defenses do not excuse its objectively reckless disregard for CMU's patents. Marvell's invalidity and non-infringement motions should be denied, and the Court should find that Marvell's infringement was willful.

Marvell's motion for a new trial is equally meritless. Marvell cannot show extremely pervasive or egregious misconduct. It also fails to demonstrate that there is any reasonable probability that the diligent and carefully-instructed jury was influenced by allegedly improper (and stricken) statements during CMU's closing. This motion too should be denied.

II. ARGUMENT

A. Marvell Cannot Establish That The Validity And Infringement Verdicts Are Supported by Insufficient Evidence or Result in a Miscarriage of Justice

Marvell's argument that "CMU discounts key record evidence," Dkt. 851 at 1, belies its own failure to *even acknowledge* the JMOL and new trial standards, let alone establish that, when CMU is given every fair and reasonable inference, there is an insufficient evidentiary basis for the jury's findings or that the verdict "shocks the conscience" or results in a "miscarriage of justice." *See* Dkt. 827 at 2-3. As to both infringement and validity, the jury simply believed Dr. McLaughlin's testimony over that of Marvell's witnesses and was entitled to do so. *Id.*

Furthermore, as to validity, there is nothing "supposed" about Dr. Proakis's admission in a sworn declaration that Worstell does *not* teach a "set" of branch metric functions. Dkt. 793 at 11; Dkt. 750 at 4. Marvell also fails to explain Dr. Proakis's baffling opinion that the "constant" described in Worstell's patent refers to equation 20 when it plainly relates only to Worstell's "further modified metric." *See* Dkt. 850 at 2-3. Moreover, it is Marvell that ignores the record when it claims that CMU's invention was not commercially successful to try to save itself from

Dr. Proakis's failure to consider *any* secondary considerations of nonobviousness. *See id.* at 3.

Marvell's weak noninfringement position is revealed by its latest argument that the massive evidence of its own and its customers' use¹ should be excused because of an alleged "good-faith belief." Dkt. 851 at 1-2. Marvell admits that its '585 patent is *not an infringement defense*. *Id.* at 4. But it still pretends that its patent-savvy engineers believed in "good faith" that Marvell did not infringe claims they never bothered to investigate. In any event, Marvell's '585 patent cannot support its supposed "good faith" belief if one credits the part of Dr. Wu's conflicting testimony that the MNP does not practice that patent.² 12/12/12 Tr. at 67 ("it doesn't teach our exact implementation"); *also compare* DX-266 (*all* claims of the '585 patent require *computation* of path metrics using a non-linear noise model) *with* 12/12/12 Tr. at 53:4-9 (Dr. Wu testifying that the MNP *does not compute* path metrics).³ As to the NLD chips, Marvell's "good faith belief" excuse is even less credible because *no Marvell patents* relate to the NLD (because it is the "original structure that Kavcic proposed in his paper"). *See* P-366.⁴

Marvell ignores the record when it contends that Dr. Blahut "did not suggest" that the MNP "computed a 'branch metric.'" Dkt. 851 at 2.⁵ Dr. Blahut admitted in his expert report and deposition that the MNP computes path metrics (which he and Dr. McLaughlin both agree are

¹ *See, e.g.*, P-1913, P-1914, P-1915, P-1916, P-1917, P-1918, P-1920, P-1922.

² The '585 patent did not issue until 2005, so even accepting Marvell's flawed theory, the patent could not be a reasonable basis for any belief regarding infringement between 2001 and 2005.

³ Claim 1 of the '585 patent also says that the post-processor *computes* path metrics, *not the difference* of path metrics, which is what Dr. Wu said the MNP does in another part of his internally-conflicting testimony. 12/12/12 Tr. at 56:12-57:2.

⁴ Marvell contends that it rejected using the original Kavcic design for the NLD described in P-366, and instead moved the noise whitening out of the trellis. Dkt. 851 at 6. Marvell's later technical documents and deposition testimony, however, show that the eventual NLD circuit is, in fact, the original Kavcic design. *See, e.g.*, P-596 ("*NLD has noise whitening built into the branch metric (BM) calculation.*"); P-823; 12/3/12 Tr. at 136, 141, 148-149; P-DEMO 7 at 89.

⁵ Marvell argues that Mr. Burd's use of "BMV_{it}" in the KavcicPP simulation code "obviously" does not mean branch metric "within the meaning of the CMU patent." Dkt. 851 at 2. Marvell provides no reason why this is "obvious," especially since Mr. Burd's testimony was only that "BMV_{it}" does not stand for "branch metrics Viterbi" and included no reference to the Court's constructions or the claims he admitted he did not read. *See* 12/17/12 Tr. at 175, 178. Marvell's argument also ignores Mr. Burd's and Dr. Wu's earlier testimony that "BM" means "branch metrics." 12/17/12 Tr. at 159; 12/12/12 Tr. at 56.

the sum of *branch metrics*, (Dkt. 717 at 4-6; 12/13/12 Tr. at 269:4, 274-275), and he even drew a circle on the MNP circuit diagram to show that the path metric is computed right after the summation block—the same place that Dr. McLaughlin identified. *See* Dkt. 717 at 1-3; *also compare* P-DEMO 7 at 49 with P-925 at 59. Marvell also ignores Dr. Blahut’s admission that the MNP computes the difference between branch metrics. 12/13/12 Tr. at 288.

B. Marvell’s Infringement Was Objectively And Subjectively Willful

1. The Record Demonstrates That Marvell Was Objectively Willful

Marvell asks the Court to hold it harmless from its prelitigation conduct and consider solely defenses manufactured for trial in determining whether it “acted despite an objectively high likelihood that its actions constituted infringement of a valid patent.” Dkt. 851 at 3.

Marvell’s position cannot be reconciled with the Federal Circuit’s en banc statement that “*in ordinary circumstances, willfulness will depend on an infringer’s prelitigation conduct.*” *In re Seagate, LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc) (emphasis added).⁶ Even if the law were as Marvell contends (it is not), the record still demonstrates Marvell’s objective

⁶ Marvell mischaracterizes CMU’s position as one requiring “special proof” and conflating the tests for subjective and objective willfulness. Dkt. 851 at 3. Not true. CMU argues that a reasonable, objective defendant would not have acted as Marvell did—*i.e.*, completely ignore the patents—and because Marvell took *no action* to investigate the patents, it could not (and did not) have any defenses for its reckless conduct. The Federal Circuit has not held that prelitigation conduct is irrelevant to the objective prong. *See, e.g., Seagate*, 497 F.3d at 1374; *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1310 (Fed. Cir. 2011) (no evidence “showing why Microsoft, *at the time it began infringement*, could not have reasonably determined” its products did not infringe); *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 860 (Fed. Cir. 2010) (considering evidence of prelitigation conduct in affirming that the objective prong was met); *Univ. of Pittsburgh of Com. Sys. of Higher Educ. v. Varian Med. Sys., Inc.*, 877 F. Supp. 2d 294, 300-301, 306-307 (W.D. Pa. 2012); *CSB-Sys. Int’l Inc. v. SAP Am., Inc.*, CIV.A. 10-2156, 2012 WL 1439059 at * 4, *9 n.7 (E.D. Pa. Apr. 25, 2012). *Bard* did not change this. The *Bard* court noted that the objective prong “*tends* not to be met where an accused infringer relies on a reasonable defense to a charge of infringement” and held that the objective prong is a question of law. *Bard Peripheral Vascular v. WL Gore & Assoc.*, 682 F.3d 1003, 1005 (Fed. Cir. 2012) (emphasis added). *Bard* also stated that the objective prong should be determined “based on the record ultimately made in the infringement proceedings,” *id.* at 1008—that record inevitably includes evidence of prelitigation conduct. Marvell’s assertion that there can be no “focus on what a patent defendant had in mind pre-litigation” would preclude from an objective prong analysis even the hallmark of willful infringement, pre-suit knowledge of the patents, in a manner at odds with black letter standards for the objective person. *See* Restatement (Second) of Torts § 283 (1965) (the objective reasonable person standard takes into account “the risk apparent to the actor, his capacity to meet it, and the circumstances under which he must act”).

recklessness because no reasonable litigant realistically could have expected success on contradictory testimony and shifting theories. *See supra*, 1-2; Dkt. 793;⁷ Dkt. 827; Dkt. 850.

The remaining “indicators” of Marvell’s purported reasonableness cannot save it. Dkt. 827 at 7-8; Dkt. 850 at 2-4. For example, Marvell abandoned the “tap weight” and “target value” invalidity theories relevant to the Court’s “close call” comment, and Dr. Kavcic’s testimony about the Silvus email (DX-189)⁸ demonstrates that Marvell in fact did not “arriv[e] at the same interpretation of CMU’s patent as CMU’s own inventor.” Dkt. 827 at 7-8; Dkt. 850 at 2-4. Marvell now admits that its patents and CMU’s alleged delay are *not* defenses.⁹ Since “a separately patented invention may indeed be within the scope of the claims of a dominating patent,” *GE v. ITC*, 685 F.3d 1034, 1037 (Fed. Cir. 2012), Marvell’s reliance on its patents also fails to defeat copying—especially since Marvell copied a preferred embodiment of the CMU patents. *See* Dkt. 850 at 6. Marvell’s latest assertion that its defenses “cause[d]” CMU to delay filing suit and to “retreat” not only is fanciful and entirely unsubstantiated, but it also contradicts Marvell’s laches argument.

2. The Jury’s Findings of Subjective Willfulness Are Well Supported

Marvell’s attempt to disrupt the jury’s findings of subjective willfulness is no more compelling. Marvell cannot show that, when CMU is given every fair and reasonable inference, the jury’s findings of subjective willfulness lack a sufficient evidentiary basis or that these findings shock the conscience or result in a miscarriage of justice.

Because any application of the JMOL or new trial standards would necessarily fail, *see* Dkt. 827 at 9, Marvell instead resorts to incredible contentions, including that submitting prior art to the PTO (as required of any patent applicant) counts as “trumpet[ing]” its infringing use to

⁷ In its preliminary non-infringement contentions, Marvell admitted that the alternative paths identified by the MNP “*contain branches*” and “uses a non-linear function to *compute branch metrics* for branches” Dkt. 793 at 9 n.30.

⁸ This email is not relevant to the objective prong. Dkt. 827 at 7; Dkt. 175 at 39 n.13.

⁹ Marvell’s reliance on “indicators” that it admits are not defenses contradicts its own assertion that “objective willfulness inquiry *asks only whether patent defenses as litigated* had genuine merit.” Dkt. 851 at 3 (emphasis added); Dkt. 850 at 4 n.7. Marvell cannot have it both ways.

the public.¹⁰ Dkt. 851 at 5. Marvell's argument that its "good faith" was "bolstered" by the issuance of its '585 patent is inconsistent with at least part of Dr. Wu's testimony where he waffled on whether the MNP practices the '585 patent. *Supra*, at 2. The PTO does not decide whether the subject of one patent application infringes an earlier patent, and black-letter law shows that separate patentability is no indication of infringement risk. *GE*, 685 F.3d at 1037. Marvell's "good faith" contentions ring especially hollow in light of Marvell's admissions that it never investigated the claims or the file histories. Dkt. 793 at 2-3. Giving any credence to Marvell's argument would transform deliberate indifference, *see* JX-D-1 at 5-6 (Doan testimony), into a safe harbor from willful infringement.

Marvell now admits that complexity is irrelevant to infringement, but nonetheless claims it "illuminates" Marvell's alleged "good faith" belief. Marvell's reliance on Mr. Burd's testimony is surprising given his admission to never reading the patent claims. 12/17/12 Tr. at 174. Marvell fails to explain how Mr. Burd (or Marvell) could form a "good faith" belief without understanding the scope of the claimed invention or why Mr. Burd would nonetheless name a purportedly "fundamentally different approach" (the "KavcicPP") after Dr. Kavcic.

Marvell also fails to explain how, in the face of its own admissions of copying and continuous use of the "gold standard" Kavcic Viterbi simulator, *see* Dkt. 827 at 6 n.11, P-DEMO 7 at 108, 109, its conduct was **anything but** subjectively reckless. With regard to the MNP and NLD chips, CMU proffered compelling evidence of copying, including: (1) Mr. Burd read the preferred embodiment section of the CMU patents and concluded that they followed Dr. Kavcic's papers; (2) Dr. Kavcic showed that a preferred embodiment (read by Mr. Burd) is found in claim 4 of the '839 patent; (3) the MNP was a "cut and paste" from the CMU patents; and (4) Dr. McLaughlin's confirmation that Dr. Wu was correct when he wrote that the NLD is

¹⁰ To the contrary, Marvell does not mark its products, so it has never told the public that the MNP supposedly practices the '585 patent or something "close" to it. *See* Dkt. 825 at 30 (CMU FF 66); *see also* D-Physical-1, D-Physical-2; P-472 (product specification for 88c7500M, which does not identify any Marvell patents covering the 88c7500M).

the “original structure” of CMU’s invention.¹¹

C. CMU’s Closing Argument Did Not Taint The Entire Trial

The absence of any mention of Dr. Cohon’s testimony or references to “billions” in Marvell’s Reply betrays the weakness of its allegation of a broad pattern of misconduct at trial. Marvell now contends that the Court should order a new trial based *solely* on CMU’s closing argument. *Compare* Dkt. 851 at 6 *with* Dkt. 806 at 10, 17-19. Having reversed course, Marvell cannot demonstrate the required “extremely pervasive” misconduct. *See Richmond v. Price*, CIV 99-192, 2006 WL 3760535 at *7 (W.D. Pa. Dec. 18, 2006). On this basis alone, Marvell’s mistrial motion fails. *See Vandenbraak v. Alfieri*, 20 Fed. Appx 185, 189-190 (3d Cir. 2006).

Nor can Marvell show *any probability* that the diligent jury’s verdict was influenced by three stricken statements in a zealous closing argument after a four-week trial. Dkt. 827 at 11-12. In fact, Marvell argues only that the jury must have been inflamed because it awarded CMU’s requested damages. Dkt. 851 at 6. Marvell cites no law for this extreme proposition. In essence, Marvell contends that, *but for CMU’s closing*, the jury would have found Marvell’s witnesses *so credible* and its evidence *so compelling* that it would have found for Marvell. Here again, Marvell ignores the record.¹²

¹¹ *See* P-DEMO 7 at 28; P-DEMO 3 at 60-66; 11/29/12 Tr. at 229:7-232:10; 12/3/12 Tr. at 106:8-18; P-DEMO 7 at 47; 12/3/12 Tr. at 134:19-136:7; P-366; P-DEMO 7 at 89; *see also* Dkt. 827 at 9 n. 18; Dkt. 793 at 4-6.

¹² Apparently in Marvell’s view (and wholly apart from the evidence CMU presented), *but for CMU’s closing*, the jury would have believed, for example: (1) Marvell’s witnesses when they testified that Marvell’s technical documents are inaccurate, Dkt. 793 at 7-10; (2) Dr. Wu’s testimony that the MNP is covered by claim 1 of the ‘585 patent despite his backpedaling when he realized that the claim requires the computation of “path metrics,” 12/12/12 Tr. at 66-67; (3) Mr. Burd’s testimony that “BMVit” did not stand for “branch metrics Viterbi,” *supra*, 2 n.5 (4) Dr. Blahut’s assertion that MNP does not compute “path metrics” even though he swore that the opposite was true and testified that the MNP computed the difference between “branch metrics,” Dkt. 793 at 8-9; (5) Dr. Sutardja’s testimony that at Marvell “must does not mean must,” 12/11/12 Tr. at 152-153; (6) Dr. Sutardja’s testimony that he did not attend a June 2002 “e-staff” meeting even though Mr. O’Dell said he did attend e-staff meetings during that time frame, *compare* 12/11/12 Tr. at 117-118 *with* 12/17/12 Tr. at 233-234; (7) Drs. Sutardja’s and Wu’s testimony that Marvell was the first company in the world to build an SOC for HDDs, Dkt. 792 at 6; (8) Mr. Hoffman’s damages analysis even though he ignored *all* of the documents that showed Marvell’s desperate need for CMU’s invention, *see* 12/12/12 Tr. at 171-290; (9) that the MNP had nothing to do with Marvell’s success even though the C7500 and C5575 sales went to zero almost immediately after the C7500M and C5575M were introduced, P-DEMO 13 at Charts 22, 25, 26, and Marvell’s internal documents say otherwise, P-703; (10) Dr. Proakis’s testimony

Quite simply, Marvell cannot show that, alone or collectively, the three alleged misstatements in closing were *so prejudicial* as to warrant the extraordinary relief of a new trial:

- **Chain of Innovation:** CMU’s argument was derived from language in the DSSC Associates Agreements that Marvell offered as evidence. *See* DX-17 at 4-5. There is *no* “stark conflict” with the Court’s *in limine* ruling, which related to harms described in Ms. Lawton’s report—not to the Associates Agreements. *See* Dkt. 608 at 2-5; 12/20/12 Tr. at 159-161.¹³ Indeed, the Court indicated that it was “fine” with CMU’s reference to the language in DX-17. *Id.* at 161. Moreover, no potential prejudice resulted from this argument because a lengthy sidebar (18 transcript pages) ensued, and the Court immediately struck the argument and instructed the jury to disregard it. *Id.* at 149-167; *Johnson v. Elk Lake Sch. Dist.*, 283 F.3d 138, 148 (3d Cir. 2002) (“[O]ur system of justice, particularly in the civil context, . . . ‘relies upon the ability of the jury to follow instructions.’”).
- **Identity Theft Analogy:** Under Third Circuit law any impropriety of CMU’s identity theft analogy was “*rendered harmless*” because the Court immediately struck the argument and gave the jury complete instructions, including that attorney statements are not evidence and that it had to perform its duties without any bias, sympathy or prejudice. *See Edwards v. Philadelphia*, 860 F.2d 568, 574 (3d Cir. 1988); Dkt. 806 at 16 n.9;¹⁴ Dkt. 827 at 12 n.27, 17.
- **Opinion of Counsel:** Marvell makes a feeble attempt to explain its failure to object to CMU’s other opinion of counsel arguments. Indeed, Marvell admits that it did not object at least one time it should have. Dkt. 851 at 7.¹⁵ It also summarily states that CMU’s statements during opening were “distinct” (they were not),¹⁶ and it argues they

that Worstell anticipates even though it does not teach any transition noise circuit on the “zero branches,” Dkt. 793 at 11-12; (11) Dr. Proakis’s testimony that the Worstell patent teaches a “set” of branch metric functions even though he swore the opposite was true, *id.*; (12) Dr. Proakis’s testimony that Worstell’s “constant” relates to Worstell’s equation 20 even though the Worstell patent expressly states otherwise, Dkt. 850 at 2-3; (13) Dr. Proakis’s testimony that Worstell rendered the CMU patents obvious even though he ignored secondary considerations, *id.*, Dkt 793 at 12; and (15) that Marvell acted in good faith even though a) Mr. Burd did not read the claims, b) Mr. Doan did not care about CMU’s patents, c) Dr. Wu did not obtain or review the file histories, and d) Marvell did not obtain an opinion of counsel, Dkt 793 at 2-4.

¹³ The Court actually denied Marvell’s motion *in limine* “to the extent that it seeks to exclude evidence surrounding the economic circumstances of CMU and the DSSC at the time of the hypothetical negotiation, . . .” Dkt. 608 at 6.

¹⁴ To circumvent its acknowledgment that “an immediate curative instruction or a complete final instruction . . . adequate[ly] redress[es]” “golden rule” arguments, Marvell now argues for the first time that this analogy “violated the Court’s *in limine* order . . .” Dkt. 851 at 7. Not only is this argument waived, *see Bedrock Stone and Stuff, Inc. v. Manufacturers and Traders Trust Co.*, No. Civ.A. 04-CV-02101, 2006 WL 890993 at *5, *10 (E.D. Pa. March 31, 2006), but Marvell provides no link to the Court’s *in limine* rulings. No matter how Marvell frames its arguments, it does not change that the analogy was stricken before it was completed and the jury was appropriately instructed.

¹⁵ Marvell’s purported “dilemma of ‘antagonizing the jury’” strains credulity in light of the number of objections and sidebars launched by its legions of attorneys throughout the trial.

¹⁶ *Compare* 11/28/12 Tr. at 116:12-117:2 with 12/20/12 Tr. at 140:23-141:1 and *id.* at 143:6-9; *also compare* 11/28/12 Tr. at 124:15-24 with 12/20/12 Tr. at 142:13-20.

“preceded” the Court’s order—but **that order never precluded CMU** from making such arguments. *See* Dkt. 753 at 2-4.¹⁷ To the contrary, the Court envisioned that CMU may argue the absence of an opinion of counsel when it resolved to instruct the jury not to draw any adverse inferences regarding the content of a possible opinion. *Id.* at 3-4 (“You may consider as one factor the lack of evidence that Marvell obtained a competent legal opinion. However, you may not assume that merely because Marvell did not obtain a legal opinion, the opinion would have been unfavorable.”). Moreover, despite the Court’s express finding that “the facts presented at trial through the testimony of Dr. Wu **do not establish that he received an opinion of counsel**, favorable or unfavorable . . .,” Dkt. 753 at 2-3 (emphasis added), Marvell misstates CMU’s argument as a failure to “consult counsel.” Dkt. 851 at 7. CMU did not argue that Marvell failed to “consult” counsel but that it failed to “**get** an opinion of counsel” and “**determine**”¹⁸ what the appropriate steps would be.” 12/20/12 Tr. at 140-142. These arguments were entirely consistent with Dr. Wu’s testimony regarding the prosecution of his patent and the Court’s finding that he had not received an opinion of counsel.¹⁹

In sum, CMU’s closing argument was fully supported by the record, and because any allegedly improper statements were stricken and cured there is **no reasonable probability** that they inflamed the jury or influenced the verdict. Marvell’s motion for a new trial fails because it distorts the record, discounts the Court’s instructions, and overlooks the Court’s view that the case was “well presented and hard fought on both sides.” 12/26/12 Tr. at 32; *see also id.* at 22.

III. CONCLUSION

For the foregoing reasons and those stated in CMU’s Opposition Brief, the Court should deny Marvell’s motion for judgment as a matter of law or a new trial on non-damages issues.

¹⁷ Marvell’s invocation of the “goose/gander rule” is illogical in light of the Court’s order, which precluded **Marvell** from making an opinion of counsel argument precisely because Marvell **waived** this defense. Dkt. 753 at 2-3 (“Marvell has expressly stated throughout this litigation that it is not raising advice of counsel as a defense . . . As such, **Marvell cannot** now—without putting the actual communications from counsel at issue—argue that its receipt of a patent implies or suggests that Marvell’s counsel returned a favorable opinion . . . Therefore, **Marvell is precluded** from making such an argument during its closing.”) (emphasis added). In light of the Court’s finding that there was **no evidence** that Dr. Wu received an opinion, *id.*, Marvell had no argument to make. Marvell’s argument that CMU was for some reason required to “clear[] . . . with the Court” that an opinion of counsel argument is relevant to intent for indirect infringement is baseless because the Federal Circuit has clearly held that it is. Dkt. 851 at 8. n.1.

¹⁸ *See* Dkt. 827 at 14 n. 33; Dkt. 757 at 7 n. 2.

¹⁹ There is **no** evidence that Mr. Burd or any other Marvell employees obtained any opinion.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on April 19, 2013 the foregoing was filed electronically.

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