Marvell's Opposition to CMU's Motion for a Finding of Willful Infringement and Enhanced Damages [Dkt. 833]

May 1-2, 2013

United States District Court
Western District of Pennsylvania
Civ. No. 2:09-cv-00290-NBF

Marvell Technology Group, Ltd.
Marvell Semiconductor, Inc.

Seagate Two-Pronged Test For Analyzing Willfulness

Objective prong. The first prong of the test requires the patentee to "show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. . . . The state of mind of the accused infringer is not relevant to this objective inquiry."

Subjective prong. "If this threshold objective standard is satisfied, the patentee must also demonstrate that this objectively-defined risk . . . was either known or so obvious that it should have been known to the accused infringer."

In re Seagate Technology, LLC, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (*en banc*).

"If the Court finds no objective willfulness, the inquiry is at an end, and the Court need not consider whether the jury's finding of subjective willfulness was supported by substantial evidence."

Apple, Inc. v. Samsung Elecs. Co., No. 11-CV-01846, 2013 WL 412861, at *18 (N.D. Cal. Jan. 29, 2013) (Koh, J.).

Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc., 682 F.3d 1003 (Fed. Cir. 2012)

"Following *Seagate*, this court established the rule that generally the " 'objective' prong of *Seagate* tends not to be met where an accused infringer relies on a reasonable defense to a charge of infringement."

Bard, 682 F.3d at 1005 (citing *Spine Solutions, Inc. v. Medtronic Sofamore Danek USA, Inc.*, 620 F.3d 1305, 1319 (Fed. Cir. 2010)).

"Those defenses may include questions of infringement but also can be expected in almost every case to entail questions of validity that are not necessarily dependent on the factual circumstances of the particular party accused of infringement."

Bard, 682 F.3d at 1006.

"We believe that the court is in the best position for making the determination of reasonableness."

Id.

Legal Standard for Objective Prong

According to *Bard*, the standard for the objective prong of willfulness is identical to the standard for showing "objective baselessness" for purposes of 35 U.S.C. § 285 (attorneys fees).

"[T]he Supreme Court's precedent on 'sham' litigation are instructive."

Bard, 682 F.3d at 1007 (adopting standards from *iLOR, LLC v. Google, Inc.*, 631 F.3d 1372 (Fed. Cir. 2011)).

- To establish "objective baselessness," a patentee must prove that "no reasonable litigant could realistically expect success on the merits" of any of its defenses. *Id.*
- If an objective litigant could conclude that a defense "is reasonably calculated to elicit a favorable outcome," it is not objectively baseless. *Id.*

Legal Standard for Objective Prong

Only One "Reasonable Defense" Is Required

- *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, 620 F.3d 1305, 1319-20 (Fed. Cir. 2010) (reversing denial of defendant's judgment as a matter of law of no willfulness, where the district court had already expressly noted that the defendant's obviousness arguments were "***reasonable***").

- *Apple v. Samsung,* No. 11-CV-01846-LHK, 2013 WL 412861, at *28 (N.D. Cal. Jan. 29, 2013) ("the ***closeness of the question*** suggests that noninfringement was indeed ***a reasonable defense***"):

  - "In light of Samsung's reasonable, if ultimately unsuccessful, noninfringement defense, Apple simply has not established that there was an objectively high likelihood that Samsung's actions would constitute infringement of the D'305 Patent. This finding makes it unnecessary for the Court to review Samsung's invalidity defenses, as ***Samsung needed only one reasonable defense on which to rely, in order to defeat the objective willfulness inquiry***." *Id.,* at *21.

- *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1374 n.4 (Fed. Cir. 2008) (holding that "the proper claim construction was a sufficiently ***close question*** to foreclose a finding of willfulness").

- *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1336 (Fed. Cir. 2009) (affirming grant of JMOL of no willfulness where "the question of equivalence was a ***close one***").

The Objective Prong Focuses On A Reasonable Litigant's Expectation That Its Defense Could Succeed On The Merits

- The Federal Circuit has made clear that the inquiry is an objective assessment of the merits of a defense ***on the record made in the infringement proceedings***, **not actual state of mind.**

"Having clarified the legal standard for *Seagate's* objective willfulness prong…the court should determine, '**based on the record ultimately made in the infringement proceedings**', whether a reasonable litigant could realistically expect those defenses to succeed."

Bard, 682 F.3d at 1008 (quoting *iLOR, LLC v. Google, Inc.*, 631 F.3d 1372, 1378 (Fed. Cir. 2011)).

"The state of mind of the accused infringer is not relevant to this objective inquiry."

Seagate, 497 F.3d at 1371.

The Objective Prong Focuses On A Reasonable Litigant's Expectation That Its Defense Could Succeed On The Merits

"Under both *Brooks Furniture* and *Seagate*, ***objective baselessness 'does not depend on the plaintiff's state of mind at the time the action was commenced, but rather requires an objective assessment of the merits.'*** State of mind is irrelevant to the objective baselessness inquiry."

iLOR, LLC v. Google, Inc., 631 F.3d 1372, 1380 (Fed. Cir. 2011) (quoting *Brooks Furniture Mfg., Inc. v. Durilier Int'l., Inc.*, 393 F.3d 1378, 1382 (Fed. Cir. 2005); *Seagate*, 497 F.3d at 137).

"We also note that the contention as to iLOR's representations about its commercial product vis-à-vis Google's Notebook product are irrelevant in finding objective baselessness. ***Prior to commencing suit, iLOR's CEO, Steve Mansfield, wrote a blog entry*** that identified iLOR's automatically displayed 'fly-out' toolbar as a feature that differentiated iLOR's product from Google's product. ***From the statements, the district court inferred that iLOR must have known that Google did not infringe its patents. However, these statements are irrelevant to the issue of objective baselessness. A finding of objective baselessness is to be determined by the record made in the infringement proceedings.***"

Id. (*Brooks Furniture*, 393 F.3d at 1382; *Seagate*, 497 F.3d at 137).

CMU Places Undue Reliance on *Uniloc*

CMU's Position:

> An infringer may avoid a finding of willfulness if it has an objectively reasonable defense ***at the time it began infringement***. *See Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1310 (Fed. Cir. 2011);

Brief at 14.

***Uniloc* Analysis:**

> **[12]** Uniloc has failed to meet the threshold objective prong of *Seagate*. Uniloc has not presented *any* evidence at trial or on appeal showing why Microsoft, at the time it began infringement, could not have reasonably determined that MD5 and SHA1 did not meet the "licensee unique ID generating means," "licensee unique ID," or "registration system"/"mode switching means" limitations. Specifically,

Uniloc, 632 F.3d at 1310.

The *Uniloc* District Court Decision Belies CMU's Citation

Of course, relevant to Seagate's first prong is the entire course of this litigation, which at first Uniloc hoped to dodge.

Uniloc USA, Inc. v. Microsoft Corp., 640 F. Supp. 2d 150, 176 (D.R.I. 2009).

"Uniloc relies on a case it submitted after post-trial briefing and argument, to which Microsoft responded. *See i4i Ltd. P'ship v. Microsoft Corp.*, No. 6:07CV113, --- F.R.D. ----, 2009 WL 2449024 (E.D. Tex. Aug. 11, 2009); (Doc. No. 410, 411). Denying (among other things) Microsoft's JMOL motion on willfulness, the *i4i* court noted that 'the number of creative defenses that Microsoft is able to muster in an infringement action after years of litigation and substantial discovery is irrelevant to the objective prong of the Seagate analysis' and focused on whether defenses would have been objectively reasonable and apparent before Microsoft infringed and was sued. *Id.* at - ---, at *10. *This Court is not convinced that such a "before and after" line is so easily drawn, or for that matter appropriate, to measure the objective likelihood (or lack thereof) that a party acted to infringe a valid patent.* Suffice it to say the inquiry is case-specific and an objective view of the record here reveals the type of close factual calls (as to more than one limitation in Claim 19) the Federal Circuit has indicated support the instant finding. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1337 (Fed. Cir. 2009); *see also Safoco, Inc. v. Cameron Int'l Corp.*, No. H-05-0739, 2009 WL 2424108, at *21-23 (S.D. Tex. Jul. 31, 2009) (plaintiff could not prove willfulness where accused infringer presented close factual question on element involving technical differences between accused and patented devices)."

Uniloc, 640 F. Supp. 2d at 177, n.33.

The Objective Prong Focuses On A Reasonable Litigant's Expectation That Its Defense Could Succeed On The Merits

- CMU incorrectly contends that *Seagate* announced a rule that willfulness depends on "prelitigation conduct." (Brief, at 14-15).
- To the contrary, *Seagate* did ***not*** announce a rule that the ***objective prong*** should focus on a defendant's prelitigation ***awareness*** of specific defenses.
- *Seagate* merely explained that when a party relies upon prelitigation opinions of counsel for the subjective prong, privilege as to the opinions of trial counsel is not waived because willfulness "in the main" is based upon prelitigation ***conduct***. *Seagate*, 497 F.3d at 1374.
- In fact, the *en banc Seagate* Court held that "the ***reasoning*** contained" ***in post-litigation*** opinions of trial counsel can preclude ***prelitigation*** conduct from being considered objectively reckless, regardless of the extent of any subjective reliance. *Seagate,* 497 F.3d at 1371.

CMU Relies On Pre-*Bard* Cases To Assert That The Focus is on Prelitigation Conduct

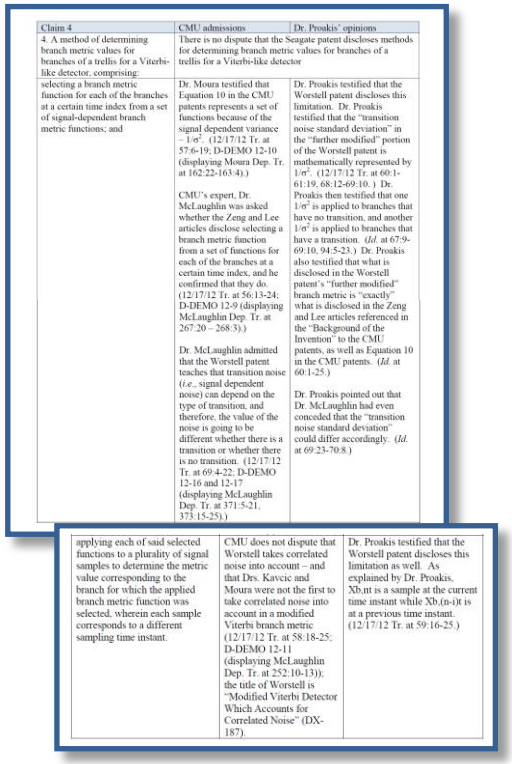
- CMU ignores controlling precedent and substitutes district court cases decided before the Federal Circuit's decisions in *iLOR and Bard*
  - *Power Integrations, Inc. v. Fairchild Semiconductor,* 725 F. Supp. 2d 474, 480 (D. Del. 2010).
    - The Federal Circuit has since ***vacated*** the willfulness finding (which had been entered pre-Bard) "with instructions to reassess willfulness in view of our other holdings in this case." *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1381.
    - Judge Stark (now handling the *Power* case) has distinguished Judge Farnan's previous opinion in *Power* as having been decided before recent Federal Circuit cases including *Powell* and *Uniloc*: "*Power Integrations* pre-dates several of the Federal Circuit decisions on which the Court has relied today (*e.g.*, *Powell, Uniloc*)." *Tarkus Imaging, Inc. v. Adobe Sys., Inc.,* 867 F.Supp.2d 534, 539 (D. Del. 2012) (Stark, J.).
  - *i4i Ltd P'ship v. Microsoft Corp.,* 670 F. Supp. 2d 568, 581-82 (E.D. Tex. 2009).
  - *CSB-Sys. Int'l Inc. v. SAP Am., Inc.,* No. 10-2156, 2012 WL 1439059, at *4 (E.D. Pa. Apr. 25, 2012) (relying on *i4i*, 670 F. Supp. 2d at 581-82).
  - *Univ. of Pittsburgh v. Varian Med. Sys. Inc.,* No. 08-01307, Slip Copy at 17.38 (W.D. Pa. Dec. 30, 2011).
  - *Great Dane Ltd. P'ship v. Stoughton Trailers, LLC*, No. 3:08-89, 2011 WL 318092, at *4-5 (M.D. Ga. Jan. 28, 2011).

Marvell's Invalidity Defenses Were Reasonable

- Although denying summary judgment, this Court assessed Marvell's motion for summary judgment on anticipation on the Group I claims asserted at trial as presenting a "close case." (Dkt. 306, at 1.)
- In addition, the Court suggested that CMU may have a written description problem based on its invalidity defenses. (Dkt. 306, at 16-17 n.10.)
- At trial, in denying CMU's motion for JMOL on Marvell's anticipation and obviousness defenses at the close of evidence, the Court rejected CMU's arguments that a reasonable jury could not find in favor of Marvell. (Dkt. 337, at 4.)
- These findings support the conclusion that a reasonable litigant could realistically have expected this case to be resolved in its favor, either on summary judgment or at trial.

Marvell's Invalidity Defenses Were Reasonable

- Marvell's claim chart (Opp., at 4-5) demonstrates how technologically close this case was by mapping CMU's admissions and Dr. Proakis' opinions.
- Disputed issue: Whether Worstell disclosed taking into account signal dependent noise and correlated noise using multiple branch metric functions.



Claim 4	CMU admissions	Dr. Proakis' opinions
4. A method of determining branch metric values for branches of a trellis for a Viterbi-like detector, comprising:	There is no dispute that the Seagate patent discloses methods for determining branch metric values for branches of a trellis for a Viterbi-like detector	
selecting a branch metric function for each of the branches at a certain time index from a set of signal-dependent branch metric functions; and	Dr. Moura testified that Equation 10 in the CMU patents represents a set of functions because of the signal dependent variance – $1/\sigma^2$. (12/17/12 Tr. at 57:6-19; D-DEMO 12-10 (displaying Moura Dep. Tr. at 162:22-163:4).) CMU's expert, Dr. McLaughlin was asked whether the Zeng and Lee articles disclose selecting a branch metric function from a set of functions for each of the branches at a certain time index, and he confirmed that they do. (12/17/12 Tr. at 56:13-24; D-DEMO 12-9 (displaying McLaughlin Dep. Tr. at 267:20 – 268:3).) Dr. McLaughlin admitted that the Worstell patent teaches that transition noise (*i.e.*, signal dependent noise) can depend on the type of transition, and therefore, the value of the noise is going to be different whether there is a transition or whether there is no transition. (12/17/12 Tr. at 69:4-22; D-DEMO 12-16 and 12-17 (displaying McLaughlin Dep. Tr. at 371:5-21, 373:15-25).)	Dr. Proakis testified that the Worstell patent discloses this limitation. Dr. Proakis testified that the "transition noise standard deviation" in the "further modified" portion of the Worstell patent is mathematically represented by $1/\sigma^2$. (12/17/12 Tr. at 60:1-61:19, 68:12-69:10.) Dr. Proakis then testified that one $1/\sigma^2$ is applied to branches that have no transition, and another $1/\sigma^2$ is applied to branches that have a transition. (*Id.* at 67:9-69:10, 94:5-23.) Dr. Proakis also testified that what is disclosed in the Worstell patent's "further modified" branch metric is "exactly" what is disclosed in the Zeng and Lee articles referenced in the "Background of the Invention" to the CMU patents, as well as Equation 10 in the CMU patents. (*Id.* at 60:1-25.) Dr. Proakis pointed out that Dr. McLaughlin had even conceded that the "transition noise standard deviation" could differ accordingly. (*Id.* at 69:23-70:8.)
applying each of said selected functions to a plurality of signal samples to determine the metric value corresponding to the branch for which the applied branch metric function was selected, wherein each sample corresponds to a different sampling time instant.	CMU does not dispute that Worstell takes correlated noise into account – and that Drs. Kavcic and Moura were not the first to take correlated noise into account in a modified Viterbi branch metric. (12/17/12 Tr. at 58:18-25; D-DEMO 12-11 (displaying McLaughlin Dep. Tr. at 252:10-13)); the title of Worstell is "Modified Viterbi Detector Which Accounts for Correlated Noise" (DX-187).	Dr. Proakis testified that the Worstell patent discloses this limitation as well. As explained by Dr. Proakis, Xb,nt is a sample at the current time instant while Xb,(n-i)t is at a previous time instant. (12/17/12 Tr. at 59:16-25.)

- CMU labels this chart "misleading" based on its disagreement with Dr. Proakis. (Reply, at 2.)
- But CMU concedes that Dr. McLaughlin admitted that Worstell discloses transition noise that "***differs depending on whether there is a transition or not***"–meaning it is not constant. (Reply, at 2 n.4.)
- As a result, there are ***differing*** parameters ($1/\sigma^2$) for the signal dependent noise which result in ***multiple functions***, exactly as in Zeng and Lee.
- As per its title, ***Worstell also accounts for correlated noise*** by applying its functions to a ***plurality of samples.*** ("Modified Viterbi Detector Which Accounts for Correlated Noise").
- The Worstell email does not alter this result. Even if the use of ***covariance matrices*** went beyond the Worstell patent or was "probably" more interesting, it has no bearing on CMU's Group I asserted claims, which do not require the use of covariance matrices. [January 7, 2013]

Marvell's Invalidity Defenses Were Reasonable

- CMU primarily attacks Dr. Proakis by manufacturing contradictions between his testimony and his declaration submitted prior to the Court's comments on the term "function."
  - Dr. Proakis has maintained throughout that the Worstell patent and the asserted claims "take correlated noise and signal dependent noise into account in ***exactly the same fashion***." (12/17/12 Tr. at 120:14-24 (emphasis added).)
  - Dr. Proakis' summary judgment declaration states that his opinion was dependent on the interpretation of the term "function": "To the extent the Worstell patent does not disclose a 'set' of branch metric functions as the Court has already ruled, then neither do the CMU patents, ***if the term 'function' is construed consistently between the patents***." (Dkt. 318-3, at 7.)
  - In denying Marvell's motion for summary judgment based on lack of written description, the Court explained that to determine if a function is a "single" function or a "set of functions," one needs to consider whether the "parameters" vary. (Dkt. 337, at 19.)
  - At trial, Dr. Proakis properly accounted for the Court's explanation when he testified that both the Worstell and CMU patents disclose multiple functions under the Court's claim construction.

Marvell's Invalidity Defenses Were Reasonable

- Contrary to CMU's argument (Brief, at 11-12), Dr. Proakis did not concede the issue of anticipation when he responded to CMU's counsel's question about the $1/\sigma^2$ for zero branches.
  - CMU made this argument in its motion for JMOL at the close of evidence, and the Court denied it.
  - CMU continues to ignore Dr. Proakis' actual testimony that he did not consider the $1/\sigma^2$ zero branch issue raised by counsel for CMU to be a difference between the CMU claims and the Worstell disclosure. (12/17/12 Tr. (Proakis) at 95:10-17.)
  - Dr. Proakis was simply answering CMU's counsel's question about a particular aspect of one embodiment of Worstell. Dr. Proakis was very clear that Worstell discloses all the claim limitations – including the disclosure of differing transition noise to account for signal dependency.
  - In fact, CMU's expert Dr. McLaughlin agreed that Worstell discloses signal dependent noise (embodied in $1/\sigma^2$) which although constant for a given branch, "differs depending on whether there is a transition or not." (Reply, at 2, n.4.)
- *Finally,* with respect to obviousness, there is ample evidence that the claimed inventions were not commercially successful, and CMU could not tie any commercial success to the asserted claims.

See, e.g., 11/29/12 Tr. (Moura) at 73:19-21; *id.* (Kavcic) at 270:4-5; 12/5/12 Tr. (Wooldridge) at 132:1-12, 149:10-150:15, 169:5-9, 170:3-5, 235:17-23.

Marvell's Noninfringement Defenses Were Reasonable

- The reasonableness of Marvell's noninfringement defenses independently precludes a finding of objective willfulness.
- The claimed "selecting" step requires the selection of a mathematical function from a set of more than one function for determining the values of branches ***in a trellis***.
  - CMU's asserted claims require the detector to "select[] a branch metric function" for each of the "branches" at a certain time index. (P-1, at 14:12-13; P-2, at 15:45-46.)
  - The construction of "branch" was agreed to be "a potential transition between two states (nodes) immediately adjacent in time ***'in a trellis.'*** " (Dkt. 120-1, at 2.) (emphasis added).
- Marvell asserted that its accused MNP feature does not infringe because it is a post processor that comes after a conventional Viterbi trellis and does ***not*** determine branch metric values ***using the trellis***.
- Rather, the MNP computes a difference metric between the predicted sequence and two alternative error sequences.

Marvell's Noninfringement Defenses Were Reasonable

- Marvell's MNP post processor does not compute branch metrics using a trellis.
  - None of Marvell's MNP chip specifications describe using a trellis in the MNP (CMU relies on a high level presentation by Dr. Song, but he did not work on the design of the MNP).
  - Dr. McLaughlin presented the concept of a "pruned" trellis (to try to cover a difference metric computation) for the first time at trial—having never used the term in his expert report, at deposition, and despite not finding the term in any Marvell document. (12/3/12 Tr. (McLaughlin) at 258:11-259:14.)
  - Dr. Blahut has always maintained that the MNP does not use a "trellis" and does not calculate any "branch metric values" as construed by the Court. (12/13/12 Tr. (Blahut) at 251:21-252:8, 254:6-23, 287:21-288:23.)
    - Path metric calculations in a Viterbi detector, which sum the individual branch metric values, are not equivalent to the MNP's calculation of a "difference metric" between the predicted path and two alternative error sequences (12/13/12 Tr. (Blahut) at 256:25-257:12, 287:21-288:23.)
    - ***Dr. Kavcic agreed that the difference of path metrics does not equate with a branch metric, as required by CMU's claims.*** (12/13/12 Tr. (Blahut) at 251:25-252:8, 254:2-23 (referring to 7/15/10 Dep. of Dr. Kavcic at 643:5-7 ("Q. ***Is the difference between two path metrics a branch metric in your mind? A. I don't think it is.***")).)

Marvell's Noninfringement Defenses Were Reasonable

- Marvell's NLD pre-processor filters media noise before a conventional Viterbi trellis. *(See* 12/13/12 Tr. (Blahut) at 259:4-8, 261:1-8.)
  - Dr. McLaughlin conceded that Marvell's technical specifications show the non-linear (FIR) filtering occurring before any branch-metric calculation. (12/3/12 Tr. (McLaughlin) at 285:14-21) ("My question, sir, we didn't agree that the filtering step occurs before the branch metric calculation, right? A. And -- in this block diagram [Slide 76] NL filtering occurs before what's labeled as on the document BM calculation. Q. 'BM' is branch metric calculation? A. Correct.").)
  - Marvell's NLD determines branch metric values in a conventional Viterbi trellis using a ***single*** signal sample, not a ***plurality*** of signal samples as the asserted claims application step requires. (*See* 12/13/12 Tr. (Blahut) at 259:4-8, 261:1-8.)
  - Dr. McLaughlin conceded that the FIR filters output only a single signal sample (12/3/12 Tr. (McLaughlin) at 288:6-10 ("Q. So it's fair to say that the signal that's labeled f_y that we're discussing, that is a single signal sample. . . . A. ***It's a single signal sample that's . . . the result of the application . . . step.***").)
  - CMU's argument that the single signal sample is nevertheless a "parameter of" or "associated with" the branch metric equation is an equivalence argument (and CMU did not assert infringement under the doctrine of equivalents).

Marvell's Noninfringement Defenses Were Reasonable

- The inventors' own beliefs about their invention (that the invention was directed to an optimal detector addressing media noise in the trellis NOT in the post processor; and was too complex for implementation in hardware) are probative of what an objective litigant might reasonably conclude about the invention.
  - In his 2001 "Silvus email" (DX-189), Dr. Kavcic told Dr. Silvus that in his patent claims, "***[t]he data dependence is in the trellis and NOT in the post processor***." Dr. Kavcic's own belief that he did not invent a media noise post processor is probative of what an objective litigant might also reasonably conclude.
  - Dr. Moura's May 2001 handwritten notes describe the CMU patent as the "optimal" solution, but one that is "***complex***," thus leading others to develop "suboptimal" solutions. (DX-1522, at 2.)
  - Dr. Kavcic wrote in a 2008 article that the algorithm's "***complexity is too high for implementation in hardware***." (DX-310, at 1766.)
  - In the same article, Dr. Kavcic ***cited to Marvell's patent*** and described Marvell's approach as a "***novel***" approach "***strik[ing] a balance between complexity and performance…in a postprocessing fashion…***" (DX-310, at 1761, 1766.)

Marvell's Noninfringement Defenses Were Reasonable

- Moreover, ***the Court dismissed CMU's Group II claims in granting Marvell's motion for summary judgment of noninfringement*** (Dkt. 444), further reflecting the reasonableness of Marvell's defenses.

Uniloc USA, Inc. v. Microsoft Corp., 640 F. Supp. 2d 150, 176-77 (D.R.I. 2009), *aff'd in relevant part*, 632 F.3d 1292, 1310-11 (Fed. Cir. 2011).

- The Patent Office considered Marvell's approach to be ***novel and non-obvious over CMU's approach.*** (DX-266, at 1; DX-287, at 1.) Thus, Marvell's solution was not a slavish copy, as CMU suggests. No case cited by CMU supports willfulness or enhancement in remotely similar circumstances.

- Finally, the reasonableness of Marvell's positions is supported by the fact that no company in the industry has ever approached CMU to seek a license to the patents. CMU's licensing solicitations of a decade-ago were roundly rejected by the industry.

See, e.g., 11/29/12 Tr. (Moura) at 73:19-21; *id.* (Kavcic) at 270:4-5; 12/5/12 Tr. (Wooldridge) at 132:1-12, 149:10-150:15, 169:5-9, 170:3-5, 235:17-23; 12/10 Tr. (Lawton) at 191:20-192:1; 11/28/12 Tr. (Cohon) 229:7-11.

CMU Improperly Seeks An Adverse Inference

- CMU cannot use Marvell's decision to preserve its privilege and not disclose communications with its counsel as the basis for an adverse inference that Marvell failed to consult with counsel or to obtain any opinion.
- *First,* the *en banc* Federal Circuit has held that no adverse inference can be drawn when an accused infringer chooses not to rely on advice of counsel.

See Knorr-Bremse Systeme Fuer Nutzfahrzeuge GMBH v. Dana Corp., 383 F.3d 1337, 1344-45 (Fed. Cir. 2004) (*en banc*).

- *Second,* Marvell's actions with respect to seeking advice of counsel have no bearing on the objective prong, which does not depend on the infringer's state of mind.

See Ricoh Co., Ltd. v. Quanta Computer Inc., No. 06–cv–462–bbc, 2009 WL 3925453, at *1 (W.D. Wis. Nov. 18, 2009) (***whether defendants consulted counsel is "irrelevant" to objective recklessness***).

- *Third,* Dr. Zining Wu testified that he did consult with in-house counsel concerning CMU's patent. (12/11/12 Tr. (Wu) at 323:9-24.) In deference to privilege, the Court instructed Dr. Wu not to provide further details of the discussion. (*Id.* at 323:16-20)

CMU Improperly Seeks An Adverse Inference

"In an effort to prove Roche's willful infringement, Abbott submits evidence that although Roche was aware of the '551 patent, has sophisticated intellectual property procedures, and had outside counsel monitoring the *LifeScan* litigation, Roche never sought a written opinion of outside counsel, but instead merely obtained a oral opinion of in-house counsel regarding whether the Comfort Curve products infringe the '551 patent, which it has refused to disclose on attorney-client privilege grounds."

Abbott Diabetes Care Inc. v. Roche Diagnostics Corp., No. C05-03117 MJJ, 2007 WL 1241928, at *10 (N.D. Cal. Apr. 27, 2007).

"Abbott, by premising its allegations of willful infringement on the fact that Roche and Bayer did not obtain and/or produce exculpatory opinions of counsel, asks this Court to draw exactly the sort of inference barred by *Knorr-Bremse*."

Id., at *11.

CMU Improperly Seeks An Adverse Inference

- Contrary to CMU's suggestion (Reply, at 1 n.1) that the "prohibited adverse inference relates to the nature of counsel's advice," not ***whether*** an opinion was obtained, ***Seagate expressly spoke to both potential aspects of the inference***, noting that *Knorr-Bremse* forbade any inference that a defendant " '***either obtained no advice of counsel or*** did so and was advised that its [activities] would be an infringement of valid U.S. Patents.' "

Seagate, 497 F.3d at 1369-70 (quoting *Knorr-Bremse,* 383 F.3d at 1343).

- CMU also incorrectly quotes *Seagate* (Reply, at 1 n.1) for the proposition that a defendant's failure to proffer favorable advice from its counsel is "crucial to the analysis." *Id.* at 1368-69.
- ***In fact, however, this portion of Seagate describes prior law***—under *Underwater Devices Inc. v. Morrison–Knudsen Co.,* 717 F.2d 1380, 1389-90 (Fed. Cir. 1983) and the old "duty of care" standard—as it had existed before the Federal Circuit "recognized the practical concerns stemming from our willfulness doctrine, particularly as related to the attorney client privilege and work product doctrine."

Id. at 1369.

CMU Improperly Relies On Supposed Copying—Which Is Not Relevant To The Objective Prong

"***Because we hold that DePuy failed as a matter of law to satisfy Seagate's first prong, we need not address DePuy's arguments concerning 'copying'*** **and Medtronic's rebuttal evidence concerning 'designing around,'** ***both of which are relevant only to Medtronic's mental state regarding its direct infringement under Seagate's second prong.***"

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314,1337 (Fed. Cir. 2009).

Legal Standard for Willfulness

"If the Court finds no objective willfulness, the inquiry is at an end, and the Court need not consider whether the jury's finding of subjective willfulness was supported by substantial evidence."

Apple, Inc. v. Samsung Elecs. Co., No. 11-CV-01846, 2013 WL 412861, at *18 (N.D. Cal. Jan. 29, 2013) (Koh, J.).

The Record Does Not Support "Clear And Convincing" Evidence of Subjective Willfulness

- CMU did not produce any evidence that anyone at Marvell ever thought they were infringing, much less clear and convincing evidence that Marvell knew or should have known of an objectively defined risk of infringement. In fact, all of the evidence points in the opposite direction:
  - Marvell developed its own practical, commercially viable solution to the media-noise problem instead of relying on CMU's optimized theoretical solution.

    DX-266, at 1; DX-287, at 1; DX-1086, at 6-9; 12/12/12 Tr. (Wu) at 97:10-15; 11/29/12 Tr. (Moura) at 70:22-71:6; 11/30/12 Tr. (Kavcic) at 77:13-18; 79:2-5; 87:16-88:12; 12/11/12 Tr. (Wu) at 284:17-285:9; 299:20-300:13; 301:16-20; 321:7-322:8.

  - Marvell disclosed CMU's patent and the name of its approach (KavcicPP) to the PTO and held good faith belief that (1) it was using its own patentably distinct technology and (2) that its simulations were not themselves detectors.

    DX-266, at 1; DX-287, at 1; DX-1086, at 6.

  - Mere references to Dr. Kavcic's name, suggestions that MNP is "must have" in marketing documents, and Marvell's supposed failure to obtain an opinion of counsel are ***not relevant*** to the test for infringement, which requires only that each claim element read on an accused device.

Enhanced Damages Are Not Warranted

- Since there is no willfulness, there can be no enhancement. And a finding of willfulness merely authorizes, but does not mandate, enhancement.
  - *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 826 (Fed Cir. 1992) ("[A] finding of willful infringement does not mandate that damages be enhanced, much less mandate treble damages."). *See also Mentor H/S, Inc.v. Med. Device Alliance, Inc.*, 244 F.3d 1365, 1380 (Fed. Cir. 2001); *Modine Mfg. Co. v. Allen Group, Inc.,* 917 F.2d 538, 543 (Fed. Cir. 1990).
- Courts frequently deny enhancement despite finding willfulness.
  - *See, e.g., Funai Elec. Co., Ltd. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1376-77 (Fed. Cir. 2010); *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1581-82 (Fed. Cir. 1992); *Modine Mfg.*, 917 F.2d at 543.
- CMU has failed to demonstrate that a large damages award will not adequately compensate it for infringement. *See Apple, Inc. v. Samsung Elecs. Co., Ltd.,* No. 11-CV-01846-LHK, Slip Copy, 2013 WL 412862, at *4 (N.D. Cal. Jan. 29, 2013).
- Federal Circuit law is clear: The trial judge is in the best position to weigh the Read factors. *Funai,* 616 F.3d 1377.

Read Factor 1 Weighs Against Enhancement

- Marvell did not "deliberately copy" the claimed inventions.
  - In developing its MNP post processor, Marvell's inventors evaluated the publicly available literature, (12/11/12 Tr. (Wu) at 285:2-4; 12/17/12 Tr. (Burd) at 137:2-138:16; DX-266, at 1; DX-287, at 1; DX-1086, at 6), evaluated Dr. Kavcic's optimal detector, but found it "too large" and something they could "not implement" (P-196, at 6) so they developed a suboptimal MNP post processor.
  - Mr. Burd noted that Dr. Kavcic's detector was patented, not as a "warning" of infringement, but rather in the context of identifying relevant prior art for his patent application. (P-283; P-196, at 6; 12/17/12 Tr. (Burd) at 137:8-139:22.)
  - In seeking an adverse inference of deliberate indifference, CMU suggests Marvell never read CMU's patent claims. But in arguing copying, CMU asserts that Marvell "copied the asserted claims into its chips." (Dkt. 827 at 9.) Neither attorney argument is supported by the record.
  - Contrary to Dr. McLaughlin's suggestion that Marvell "cut and pasted" CMU's FIR filter implementation, FIR filters are a conventional tool that CMU did not invent. Marvell's FIR filters are used ***outside*** the trellis, whereas CMU uses FIR filters to account for data dependence ***in*** the trellis. (DX-189.)
  - The Patent Office found Marvell's patent novel over CMU's patented inventions.

Read Factor 2 Weighs Against Enhancement

- Marvell's "good faith belief" that it was not infringing is demonstrated by:
  - Marvell's public disclosure in its provisional application of the Kavcic patents, the Kavcic paper, the KavcicPP name of its suboptimal approach as expressly distinguished from Kavcic's optimal approach. (DX-266, at 1; DX-287, at 1.)
  - Dr. Moura's notes (DX-1522, at 2) describing CMU's patent as directed to the "optimal" detector and viewed as too "complex" by the industry, who were therefore developing "suboptimal" detectors.
  - Dr. Kavcic's publication (DX-310, at 1761, 1766) stating that his invention was too complex to implement in hardware and citing to Marvell's post processor patent as a "novel" approach.
  - The "Silvus email" (DX-189, at 1-2), where Dr. Kavcic stated: "[t]he data dependence [in the claimed invention] is in the trellis and NOT in the post processor. Actually, the examiner had us write extra material to make sure that we do not use a post processor, which is a patent by Kelly Fitzpatrick."

Read Factor 3 Weighs Against Enhancement

- Marvell's behavior as a litigant has been fair and honorable.
  - Over the past four years, Marvell has defended itself fairly, honestly, and on the merits.
  - Marvell and its counsel have vigorously defended themselves, but have been careful to not step over line or behave inappropriately.
  - Contrast Marvell's litigation behavior to that of CMU, as exemplified by the repeated misconduct during closing argument.

Read Factor 4 Weighs Against Enhancement

- Marvell's financial condition should not support enhancement.
  - CMU tries to play Marvell's financial position both ways.
  - CMU contends that Marvell is a collection risk, (it is not), and it also contends that Marvell can withstand treble damages.
  - Marvell's CEO, Dr. Sutardja, has submitted a sworn declaration in which he unequivocally commits to pay any judgment in this case.

Read Factor 5 Weighs Against Enhancement

- This case was a close call on the merits.
  - The Court granted Marvell's motion for summary judgment of non-infringement on the Group II claims. (Dkt. 443, at 1.)
  - The invalidity decision on summary judgment was "close" on the Group I claims. (Dkt. 306, at 1; see also Dkt. 337, at 4 ("Although it was a close case, the Court found that [the Seagate patent] did not anticipate the Group I claims.").)
  - Rather than reflect the closeness of the validity and infringement issues, the magnitude of the verdict reflects four factors outside of Marvell's control:
    - The worldwide sales damages theory.
    - The highly prejudicial, irreversible closing argument misconduct.
    - The fifty cent royalty rate which lacks foundation; and
    - The 8 years of delay in bringing this suit.

Read Factor 6 Weighs Against Enhancement

- The duration of Marvell's alleged infringement cannot be divorced from CMU's delay in filing suit, which effectively enhanced the damages total.
  - *See i4i,* 670 F. Supp. 2d at 595 (finding that "i4i's delay in bringing" suit . . . weighs against enhancement" of damages, where "the time i4i took to prepare for trial was unusually long, thus enhancing the amount of damages ultimately found by the jury"), *aff'd in relevant part*, 598 F.3d 831, 858 (Fed. Cir. 2010) (finding district court did not abuse discretion in holding that Read factors 1 and 9, "combined with i4i's delay in bringing suit . . . weigh[ed] against enhancement" of damages).
  - *Loral Corp. v. B.F. Goodrich Co.*, No. C–3–86–216, 1989 WL 206377 at *32-33 (S.D. Ohio June 8, 1989) (finding "increased damages would not be appropriate" because "BFG's actions, though egregious, are sufficiently offset for purposes of increased damages by Goodyear's considerable delay in filing suit"), *judgment rev'd on other grounds*, 899 F.2d 1228 (Fed. Cir. 1990).
  - *Mass Engineered Design, Inc. v. Ergotron, Inc.*, 633 F. Supp. 2d 361, 391 (E.D. Tex. 2009) ("A delay that is insufficient to prove laches, may weigh against a finding of an 'exceptional case.'").

Read Factor 7 Weighs Against Enhancement

- Marvell's remedial efforts weigh against enhancements.
  - The MNP feature is now effectively removed from the market except for one legacy chip

Affidavit of Zining Wu in Support of Marvell's Opposition to CMU's Motion for Permanent Injunction, Post-Judgment Royalties, and Supplemental Damages ("Wu Decl.") at ¶ 9.

  - Once Marvell's customers designed their own products (hard disk drives) based on assumptions about Marvell's products including the accused technology, it became more difficult to remove the accused technology without diverting resources to re-design Marvell's chips.

Id. at ¶¶ 9-10.

  - Had CMU brought its claim earlier, Marvell could have avoided investing in the NLD technology in the manner that it did and would not have needed to divert resources to re-design its chips after already designing the NLD feature into its chip designs.

Affidavit of Sehat Sutardja in Support of Marvell's Motion for Judgment of Laches at ¶ 15.

  - In light of the jury's verdict, Marvell is taking steps to remove the NLD feature from its newest generation of chips that is currently under design.

Wu Decl. at ¶ 11.

Read Factor 8 Weighs Against Enhancement

- Marvell was not "motivated to harm" CMU—Marvell and CMU are not marketplace competitors.
  - *See Odetics, Inc. v. Storage Tech. Corp.*, 14 F. Supp. 2d 800, 804 (E.D. Va. 1998), (because plaintiff and defendant "did not compete," the court found "no evidence that [defendant] sought to harm [plaintiff]"), aff'd 185 F.3d 1259, 1274 (Fed. Cir. 1999).
- A "profit motive," standing alone, cannot support enhancement—otherwise all defendants would be found to be "motivated to harm."

Read Factor 9 Weighs Against Enhancement

- Marvell did not try to hide its activities.
  - Marvell openly sought and obtained its own patents, thereby disclosing the Kavcic prior art in its applications.
    - Marvell publicly vetted the differences it perceived between its design and CMU's approach.
    - Marvell made it plain that it named its media noise post processor after Dr. Kavcic.
    - Marvell disclosed its use of Kavcic's name for its approach ("KavcicPP") to the PTO in its provisional patent application. (DX-1086, at 9.)
  - Patenting Marvell's own solution is not indicative of "conduct of a party attempting to hide from a patent it believes to be infringed."

MPT, Inc. v. Marathon Labels, Inc., 505 F. Supp. 2d 401, 416-17, 419 (N.D. Ohio 2007), *aff'd in relevant part*, 258 Fed. Appx. 318 (Fed. Cir. 2007).

No Enhancement is Warranted

- CMU's requested double or treble damages are only justified in the most egregious circumstances—including cases involving admissions of willful infringement, deliberate copying and violations of an ITC order.
- In *i4i Ltd. P'ship v. Microsoft Corp*., 670 F. Supp. 2d 568, 594 (E.D. Tex. 2009), the district court enhanced the damages by 20%.
- Unlike *i4i*, here:
  - There is no willful infringement.
  - Marvell proceeded with a good faith belief that CMU's technology was too complex for commercial implementation, which was corroborated by the inventors of the asserted patents, (*see* DX-1522, at 2; DX-63, at 14) and the Chief Technology Officer of one of Marvell's largest customers (see DX-214, at 1).
  - Marvell openly sought and obtained its own patents over CMU's patents. (DX-1086.)