

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

**FILED**  
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U.S. DISTRICT COURT  
EASTERN MICHIGAN

MSC.SOFTWARE CORPORATION,

Plaintiff,

v.

ALTAIR ENGINEERING, INC.,  
MARC KLINGER, RAJIV RAMPALLI,  
and MICHAEL HOFFMANN,

Defendants.

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Case No. 07-12807

HON. AVERN COHN

**DECISION AND ORDER GRANTING DEFENDANTS' MOTION FOR JUDGMENT AS  
A MATTER OF LAW AND NEW TRIAL OR REMITTITUR ON DAMAGES (Doc. 829)**

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**LIST OF EXHIBITS**

- Exhibit A**      **MSC's "Damages by Defendant and Claim" - submitted pre-trial**
- Exhibit B**      **DX1256 - Altair's Calculation of Revenue and Reasonable Royalty - admitted at trial**
- Exhibit C**      **PX877 - HyperWorks 2009 revenue - admitted at trial**
- Exhibit D**      **PX878 - HyperWorks revenue year by year - demonstrative used during rebuttal closing argument**

## I. Introduction

This is a business dispute tried to a jury. Relevant to the captioned motion, the jury found in favor of plaintiff MSC Software Corporation (MSC) and against Altair Engineering, Inc. (Altair) and Rajiv Rampalli (Rampalli) and Michael Hoffman (Hoffman) on claims of misappropriation of trade secrets and breach of confidentiality agreements. (Doc. 813). Particularly, a jury found that three (3) trade secrets,  $\mu=0$  [REDACTED] discontinuity checking, and Jacobian refactorization, were incorporated by Altair in its Motion Solve product and were misappropriated. The jury awarded damages based on a single payment reasonable royalty in the amount of \$26,100,000, with Altair and Rampalli responsible as follows:

Altair -	\$25,943,400	(99.400%)
Rampalli	\$139,635	(.535%)
Hoffman	\$16,965	(.065%)

Before the Court is Altair and Rampalli's<sup>1</sup> renewed motion for judgment as a matter of law and new trial or remittitur on damages.<sup>2</sup> The motion will be granted. As explained below, the damages awarded are excessive and against the great weight of the evidence. As a consequence, Altair is entitled to a new trial on the issue of

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<sup>1</sup>Hoffman has not joined in the motion. Altair and Rampalli will be collectively referred to as Altair, except where appropriate to refer to Rampalli individually.

<sup>2</sup>Previously decided were Altair and Rampalli's motion for judgment as a matter of law or new trial on Counts I and II (Doc. 825) and Defendants' Renewed Motion for Judgment as a Matter of Law on MSC's Non-solicitation Claims (Doc. 827). See Memorandum and Order Denying Defendants' Renewed Motion for Judgment as a Matter of Law on MSC's Non-Solicitation Claims (Doc. 921) and Memorandum and Order Denying Defendants Rajiv Rampalli and Altair Engineering's 825 Motion for Judgment as a Matter of Law or for a New Trial on Counts I and III (Doc. 924).



damages. Briefly stated, there was no evidence at trial to support a finding that MSC suffered damages in excess of 26 million dollars as a consequence of Altair's misappropriation of the three trade secrets.

Importantly, the jury was not asked to apportion damages for each of the misappropriated features/trade secrets which the jury found had been incorporated into Motion Solve. Also important, as will be explained in detail below, is the fact that MSC from the filing of the case struggled to find a proper damage theory. In the end, the computation MSC used to support a single payment reasonable royalty theory presented to the jury was not based on admissible evidence. Additionally, the 26 million dollar damages verdict is excessive and must be set aside. Altair is entitled to a new trial on damages.

## II. Background

The trade secrets are features of a multi-body dynamics solver marketed by MSC under the name ADAMS/Solver. Altair is in competition with MSC and markets a solver under the name MotionSolve. A multi-body dynamics solver is a computer program that

- accepts a physical description of a multi-body system (a model) as input,
- converts the input into a set of equations that can be solved numerically,
- employs numerical methods to solve the equations, and,
- generates output that characterizes the behavior of the model

In denying Altair's motion for judgment as a matter of law or new trial on the

trade secret and breach of confidentiality counts, the Court found that each of the trade secrets<sup>3</sup> have value and were misappropriated. The Court explained:

Altair raise five arguments in support of their motion. First, Altair argues that two of the three trade secrets, Jacobian Refactorization and Discontinuity Checking, were publicly known, readily ascertainable, and/or not kept secret. This argument does not carry the day because essentially defendants would have the Court reweigh the evidence and draw all reasonable inferences in their favor. This is not permissible on a motion for judgment as a matter of law or for a new trial. . . . MSC presented ample evidence from which a reasonable jury concluded that Discontinuity Checking, and Jacobian Refactorization were not publicly known, were readily ascertainable, and were kept secret. Second, Altair argues that none of the trade secrets have economic value. This argument fails because MSC presented testimony, documents, correspondence, and presentations by Altair personnel from which a reasonable jury could conclude that the these trade secrets had value to Altair. Third, Altair argues that MSC did not show that Rampalli or Altair knowingly misappropriated trade secrets. Again, MSC presented evidence from which a reasonable jury could find that Rampalli and Altair knew, or had reason to know, that Rampalli implemented MSC trade secrets in MotionSolve with Altair's express approval. Fourth, Altair argues that there was no factual basis for the jury to find that Rampalli and Altair "willfully and maliciously" misappropriated MSC's trade secrets. This argument fails because the jury's decision was reasonably based on the evidence at trial.

(Doc. 924 at p. 2-3) (footnotes omitted)

### III. The Law

#### A. Judgment as a Matter of Law and New Trial

The grounds for a judgment as a matter of law, Fed. R. Civ. P. 50, and for a new trial, Fed. R. Civ.P. 59(a) were described by the Court in American Seating Company v. USSG Group, Inc., 2006 WL 2472196, \*3 (W.D. Mich. Aug. 24, 2006), and need no further elaboration. There the Court said:

The principle governing a motion for judgment as a matter of law under

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<sup>3</sup>Altair has not challenged the evidence or jury verdict finding that the trade secret described as setting " $\mu=0$  [REDACTED]" was misappropriated.



Fed.R.Civ.P. 50 is best stated in Morelock v. The NCR Corporation, 586 F.2d 1096, 1104 (6th Cir. 1978), which says that “[t]he issue raised by a motion for judgment n.o.v. is whether there is sufficient evidence to raise a question of fact for the jury.” In making this determination, “the trial court may neither weigh the evidence, pass on the credibility of witnesses nor substitute its judgment for that of the jury,” *Id.* The motion should not be granted unless the court, after so viewing the evidence, “is of the opinion that it points so strongly in favor of the movant that reasonable minds could not come to a different conclusion....” *Id.* at 1104–05.

Under Fed. R. Civ. P. 59(a), a court may grant a motion for a new trial “for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States.” This rule has been construed as encompassing such grounds as a verdict against the clear weight of the evidence, an inconsistent verdict, an excessive award of damages, an error of law during the trial, or prejudicial misconduct by the court, opposing counsel, or a juror that deprived the moving party of a fair trial. See, Robert E. Jones, et al, *Fed. Civil Trials & Evidence*, Ch. 20, ¶¶ 20:100–243 (2001 Ed.); Wight, Cooper, Kane, *Fed. Prac. & Procedure*, Civil 2d § 2807. It is clear that a court has broad discretion to decide whether to grant a new trial. McDonough Power Equipment, Inc. v. Greenwood, 464 U.S. 548, 556 (1984).

[As to a new trial,] Circuit Judge Taft, in an early Sixth Circuit case, Felton v. Spero, 78 F. 576, 581 (6th Cir.1897), put it this way:

[T]he motion for new trial is a remedy accorded to a party litigant for the correction by the trial court of injustice done by the verdict of a jury. It is one of the most important rights which a party to a jury has. It is a right to invoke the discretion of the court to decide whether the injustice of the verdict is such that he ought to have an opportunity to take the case before another jury....

Lastly, in Capital Traction Co. v. Haf, 174 U.S. 1, 13 (1899), the importance of the judge’s role post jury trial was noted as follows:

‘Trial by jury,’ in the primary and usual sense of the term at the common law and in the American constitutions, is not merely a trial by a jury of 12 men before an officer vested with authority to cause them to be summoned and impaneled, to administer oaths to them and to the constable in charge, and to enter judgment and issue execution on their verdict; but it is a trial by a jury of 12 men in the presence and under the superintendence of a judge empowered to \*14 instruct



them on the law and to advise them on the facts, and (except on acquittal of a criminal charge) to set aside their verdict, if, in his opinion, it is against the law or the evidence.

### B. Excessiveness

This being a diversity case for violation of a Michigan's trade secret statute, M.C.L. § 445.1901 to 445.1910, Michigan law governs Altair's excessiveness claim. Blasky v. Wheatley Trucking, Inc., 482 F.2d 497-98 (6th Cir. 1973).

In Gilbert v. DaimlerChrysler Corp., 470 Mich. 749, 765 (2004), the Michigan Supreme Court defined a claim of excessiveness in a jury verdict as follows:

When a verdict is procured through improper methods of advocacy, misleading argument, or other factors that confound the jury's quantification of a party's injuries, that amount is inherently unreliable and unlikely to be a fair estimate of the injured party's losses. Likewise, when a verdict is unsupported by the record. . . a reviewing court may fairly conclude that the verdict exceeds the amount required to compensate the injured party.

### C. Reasonable Royalty<sup>5</sup>

#### 1. Michigan's Trade Secret Statute

M.C.L. §445.1904 reads in part:

Except to the extent that a material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation renders a monetary recovery inequitable, a complainant is entitled to recover damages for misappropriation. Damages can include both the actual loss caused by misappropriation and the unjust enrichment caused by misappropriation that is not taken into account in computing actual loss. In lieu of damages measured by any other methods, the damages caused by misappropriation may be measured by imposition of liability for a reasonable royalty for a misappropriator's

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<sup>5</sup>While Altair seems to suggest the jury should have considered a running royalty in contrast to a lump sum royalty, clearly the case was tried on the assumption that a lump sum reasonable royalty was the proper measure of damages if the jury found misappropriation.



unauthorized disclosure or use of a trade secret.

## 2. Jury Instructions

The jury was instructed, without objection, as follows:

If you find MSC has proved that Altair, Rampalli misappropriated Trade Secrets, you may award MSC damages measured by a reasonable royalty caused by Rampalli's unauthorized disclosure and/or use of MSC's Trade Secrets and Altair's improper acquisition and/or use of MSC's Trade Secrets.

The amount of that royalty is to be determined as the amount both parties would have agreed to in a hypothetical negotiation to a fair price for licensing is Altair to put the Trade Secrets found to be misappropriated to the use Altair intended at the time that misappropriation took place. The reasonable royalty is what a willing buyer and a willing seller would have agreed to, not what one party would have demanded.

The reasonable royalty must be for the individually misappropriated Trade Secrets and not based on the entire software product or product lines. However, Plaintiff may recover damages based upon any entire product rather than the individual Trade Secrets where the Plaintiff shows that the individual Trade Secrets constitute the basis for customers' demand or are such importance that the Trade Secrets substantially create the value of the entire product.

In calculating what a fair licensing price would have been had the parties agreed, you may consider a number of factors, including the resulting and foreseeable changes to the parties' competitive position that would be caused by such a license; the price past purchasers or licensees may have paid the; total value of the Trade Secrets taking into account the development costs incurred by MSC in developing the Trade Secrets actually misappropriated and the importance of the Trade Secrets actually misappropriated; the nature and extent and use Altair intended to the Trade Secrets and any other unique factors which may effect the parties' agreement; the head start that Altair enjoyed in its development of MotionSolve by misappropriating Trade Secrets.

The royalty arrived at must be reasonable under all the circumstances presented and take into account events and facts post-dating the hypothetical negotiation. MSC has the burden to prove the amount of any such damages.

If you find that Rampalli or Hoffmann disclosed confidential information in violation of your – of their contracts, you may use a royalty method in determining the amount of damages, if any, to which MSC is entitled. If you choose to do so, you should use the same principles to determine the amount of royalty damages, if any, to which MSC is entitled.

Should you find an award of a royalty to be appropriate for Trade Secret misappropriation or violation of confidentiality agreements, you will enter a single amount as a reasonable royalty on those claims. Then assign a percentage to each party whom you have found to be liable for a claim that entitles MSC to a reasonable royalty. That percentage is the portion of the royalty award that you



find a particular Defendant was liable for.

(Tr. 4/8/14 Vol. 26 at pp. 16-18).

### 3. The Precedents

There are a multitude of cases discussing what constitutes a single payment reasonable royalty for misappropriation of trade secrets, including the analogous violation of intellectual property rights, i.e. patent infringement.

As described in University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 537 (5<sup>th</sup> Cir. 1974)

'To adopt a reasonable royalty as the measure of damages is to adopt and interpret, as well as may be, the fiction that a license was to be granted at the time of beginning the infringement, and then to determine what the license price should have been. In effect, the court assumes the existence ab initio of, and declares the equitable terms of, a supposititious license, and does this nunc pro tunc; it creates and applies retrospectively a compulsory license . . . ' The Court further held the proper standard would be a willing buyer-willing seller test: ' . . . the primary inquiry . . . is what the parties would have agreed upon, if both were reasonably trying to reach agreement.'

(quoting Egry Register Co. v. Standard Register Co., 23 F.2d 438, 443 (6th Cir. 1928)).

The Court of Appeals for the Fifth Circuit goes on to say:

In calculating what a fair licensing price would have been had the parties agreed, the trier of fact should consider such factors as the resulting and foreseeable changes in the parties' competitive posture; that prices past purchasers or licensees may have paid; the total value of the secret to the plaintiff, including the plaintiff's development costs and the importance of the secret to the plaintiff's business; the nature and extent of the use the defendant intended for the secret; and finally whatever other unique factors in the particular case which might have affected the parties' agreement, such as the ready availability of alternative processes. Hughes Tool Co. v. G. W. Murphy Industries, Inc., 491 F.2d 923, 931 (5th Cir. 1973).

Id. at 539.

Importantly, as the jury was told that "the circumstances presented . . . can take



into account events and facts post-dating the hypothetical negotiation.” Justice

Cardozo in Sinclair Refining Co. v. Jenkins Petroleum Process Co., 289 U.S. 689, 697-98 (1933) said in discussing damages in a patent case:

This is not a case where the recovery can be measured by the current prices of a market. A patent is a thing unique. There can be no contemporaneous sales to express the market value of an invention that derives from its novelty its patentable quality. But the absence of market value does not mean that the offender shall go quit of liability altogether. The law will make the best appraisal that it can, summoning to its service whatever aids it can command. At times the only evidence available may be that supplied by testimony of experts as to the state of the art, the character of the improvement, and the probable increase of efficiency or saving of expense. This will generally be the case if the trial follows quickly after the issue of the patent. But a different situation is presented if years have gone by before the evidence is offered. Experience is then available to correct uncertain prophecy. Here is a book of wisdom that courts may not neglect. We find no rule of law that sets a clasp upon its pages, and forbids us to look within.

(citations omitted).

In Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp., 378 F. Supp. 2d 459, 465

(D. Del. 2005) the district court noted the artificiality of the hypothetical negotiation and its subjective nature when it said:

Over fifty-five years after Sinclair Refining, the Federal Circuit in Fromson adopted the Supreme Court’s rationale for flexibility—the “book of wisdom”—and applied it to the hypothetical negotiation method of calculating damages under § 284:

The [hypothetical negotiation] methodology encompasses fantasy and flexibility; fantasy because it requires a court to imagine what warring parties would have agreed to as willing negotiators; flexibility because it speaks of negotiations as of the time infringement began, yet permits and often requires a court to look to events and facts that occurred thereafter and that could not have been known to or predicted by the hypothesized negotiators.

853 F.2d at 1575.

Lastly and particularly relevant to the Court’s analysis of the evidence at trial on damages is what a district judge said in Info-Hold, Inc. v. Muzak LLC, 2013 WL

6008619, \*2 (S.D. Ohio Nov. 13, 2013):

Neither a jury nor this Court can be expected to invent a reasonable royalty out of thin air, particularly given that the Federal Circuit requires “sound economic proof of the nature of the market and likely outcomes” in order “to prevent the hypothetical from lapsing into pure speculation[.]”

#### IV. The Trial

##### A. In General

The trial extended over twenty-six days. MSC called 18 witnesses in its case in chief. Altair called ten witnesses in defense. MSC called three witnesses in rebuttal. Approximately 200 exhibits, many consisting of multiple pages, were admitted. The jury deliberated for three days before rendering a verdict. Suffice it to say that the jury was presented with a mountain of documentary evidence and listened to hours of testimony, both live and by deposition. Witness testimony on damages will be discussed in detail below.

##### B. MSC's Opening Statement<sup>6</sup>

MSC said in opening statement:

The second element of damages is for trade secrets misappropriation . . . Those damages, as the Court will instruct you at the end of the case can come in a number of different forms, lost profits, unjust enrichment, what did Altair gain from taking what they shouldn't have taken, what's inequitable for them to keep, and the other is a reasonable royalty.

A reasonable royalty. If you have all bought software, you pay at the store, Best Buy or wherever you go, you pay for use of the software. That's a license. That's a form of royalty. You pay a license to use a product, and it's a one-time license.

(Tr. 2/12/14 Vol. 1 at p. 44). Although MSC presented figures to the jury regarding MSC's revenue and both parties' market share, it made no mention of what a single

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<sup>6</sup>MSC's closing statement will be discussed in some detail infra.



payment reasonable royalty would be in its opening statement.

**C. Verdict (Doc. 813)**

The jury as to damages for trade secret misappropriation was asked:

What amount fairly compensated MSC for the damages it suffered as a result of the breach of Rampalli and/or Hoffmann's confidentiality agreements and/or Rampalli's and/or Altair's trade secret misappropriation?

**D. The Judgment (Doc. 814)**

The Judgment was entered as to a single amount:

IT IS ORDERED AND ADJUDGED that judgment is entered in favor of the plaintiff, MSC Software Corporation and against defendants Altair Engineering, Inc. . . .

A) \$26,100,000.00 . . . Trade Secret Misappropriation severally against the following defendants:

Altair Engineering	-	\$25,953,400.00
Rajiv Rampalli	-	\$ 139,635.00
Michael Hoffman	-	\$ 16,965.00

**V. MSC's Damage Calculations**

**A. Initial Efforts by MSC**

Over six years into the case, MSC had yet to articulate a viable damages theory.

On July 23, 2013, (Doc. 731-2) MSC answered an interrogatory –

Identify MSC's damages alleged in the complaint which are quantifiable, including but not limited to, actual loss of sales, revenue and profits and loss of cost and expenses of hiring and training. Please include a detailed accounting of each alleged claim of quantifiable damages.

– as follows:

As of this writing, damages suffered by MSC are not quantifiable and/or have not been determined. . . .

MSC went on to say that its view that a single payment reasonable royalty “to be at

least \$75 million" but offered little in terms of an explanation. Indeed, MSC justified this figure by considering (1) the value of the ADAMS/Solver to MSC; (2) the competitive harm MSC would suffer; and (3) the acquisition price for other software companies at the time of the alleged misappropriation. These grounds completely ignore that the test is not what MSC would have demanded as a paid-up royalty but what both parties would have agreed to.

A response to a Request for Production did not produce any documents which reflected a royalty base or computing a single payment royalty or basis of Altair's revenue from the sale of MotionSolve for the years 2008-2012. This failure MSC said was attributable in major part to Altair's failure to produce usage information by Altair. The record does not reflect MSC's request for such a formulation, Altair's refusal, the appropriate motion to the Court for failure to produce and the Court's disposition of such motion.

Eventually, MSC engaged R. Bruce Den Uyl as a expert to testify as to the damages it suffered because of Altair's misappropriation. Den Uyl calculated MSC's damages based on a single payment reasonable royalty. Altair moved to disqualify Den Uyl on the grounds his methodology did not meet the Daubert test.<sup>7</sup> The Court agreed in an order dated January 27, 2014 and barred him as a witness.<sup>8</sup> See Doc. 757. The

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<sup>7</sup>Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 57 (1993).

<sup>8</sup>The Court also excluded MSC's proposed experts Robert J. Rock, CPA and William S. Choi, Ph. D because they were not timely disclosed. Indeed, MSC first disclosed them as experts in responding to Altair's motion to strike Den Uyl's testimony and in MSC's motion to strike the testimony of Schmid, Altair's damages expert. This late disclosure of Rock and Choi—less than a month before the scheduled trial—is indicative of MSC's failed attempts to set forth a sustainable damages theory.



Court's detailed analysis bears repeating because it thoroughly explains what proofs are necessary to put forth a damages theory based on a single payment reasonable royalty. It also explains why Den Uyl's computation of a single payment reasonable royalty by calculating MotionSolve's revenue using a percentage of token sales, explained in the Court's order, is fatally flawed. This is significant because the figures MSC presented to the jury to support its single payment reasonable royalty theory were arrived at using Den Uyl's rejected theory.

In excluding Den Uyl as a witness, the Court<sup>9</sup> explained:

ii. Reasonable Royalty

Both Den Uyl and Schmid use a reasonable royalty theory to calculate damages. Calculating a reasonable royalty involves: (1) determining the base revenue/royalty base; (2) determining the reasonable royalty rate; and (3) multiplying the base revenue by the royalty rate. Calculation of damages based on a reasonable royalty "depends on trustworthy evidence of both the royalty base and the royalty rate." IP Innovation LLC v. Red Hat, Inc., 705 F. Supp. 2d 687, 689 (E.D. Tex. 2010).

"Royalties are dependent on the level of sales or usage by the licensee." Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1326 (Fed. Cir. 2009). The reasonable royalty rate is "applied to the actual sales or use of the infringing product," i.e., royalty base. Nilssen v. Motorola, Inc., 1998 WL 851493, at \*3 (N.D. Ill. 1998) (emphasis in original). The parties agree that the proper royalty base is the revenue of MotionSolve. Therefore, to determine the royalty base, the experts must use the sales or usage of MotionSolve. See id.; Lucent Techs., 580 F.3d at 1326.

As explained, MotionSolve is one of many software programs in HyperWorks, and customers who purchase tokens can use any program whose token draw is equal to or below the number of tokens purchased; additionally, no data exists showing MotionSolve's sales or all MotionSolve usage. Thus, it is impossible to determine the actual revenue of MotionSolve. Because there is no way to determine MotionSolve's actual revenue, both experts attempt to calculate the royalty base/base revenue by determining the percentage of HyperWorks revenue (which is 90% of Altair's total revenue) that MotionSolve represents; Den Uyl and Schmid use different methods to calculate royalty base.

iii. Den Uyl's Methodology

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<sup>9</sup>This decision was issued by the predecessor judge assigned to the case.



Den Uyl says that he "provide[s] a royalty calculation based on the limited data produced by Altair ... using a range of assumptions as to MotionSolve-related revenue as a percentage of total HyperWorks software revenue."

Defendants challenge the reliability of Den Uyl's reasonable royalty calculation; specifically, they say the method he used to calculate royalty base is unreliable, and his royalty rate is unsupported.

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#### b. Den Uyl's Royalty Base

Den Uyl calculates royalty base by finding the percentage of tokens required to use MotionSolve relative to the total tokens for all software forming HyperWorks; i.e., MotionSolve token draw divided by amount of tokens to use all HyperWorks programs. The number of tokens required to use MotionSolve varied from year-to-year, as did the amount of tokens required to use all HyperWorks programs; accordingly, MotionSolve's relative token draw percentage varied.

Because the token amounts varied, Den Uyl found that the appropriate royalty base was a range of bases from 5% to 20%. He based that range on three different findings: (1) in 2009, 3,800 tokens were needed to use MotionSolve and 36,000 tokens were needed for all of HyperWorks, so MotionSolve represented 11% of the total tokens; (2) in 2013, 2,500 tokens were needed to use MotionSolve, which represented 7% of the tokens for all of HyperWorks; and (3) MSC also uses a token system where the ADAMS/Solver product represents approximately 14% of MSC's total software system (22% if combined with ADAMS/View).

Defendants says Den Uyl's method of calculating royalty base is not reliable, does not comport with generally accepted accounting principles (GAAP), in no way approximates actual revenue or actual usage, and is unhelpful to the jury. Specifically, they say Den Uyl's calculation of royalty base is unreliable because: (1) it is not based on sales or usage; (2) he does not explain how the token draw required to use MotionSolve relative to the total amount of tokens to use all of HyperWorks relates to MotionSolve's revenue; and (3) he fails to support his finding that MotionSolve revenue makes up 5% to 20% of HyperWorks revenue.

"Royalties are dependent on the level of sales or usage." Lucent Techs., 580 F.3d at 1326. Despite this fact, Den Uyl admits that he based his royalty calculation on neither sales nor usage; he blames this on Altair for not providing enough data. However, this is unavailing to Den Uyl and MSC; it must still show that Den Uyl's methodology satisfies Daubert and Fed. R. Evid. 702. See Flanagan, 423 F. Supp. 2d at 699 (citing Daubert, 509 U.S. at 592, n.10) ("party offering expert testimony must prove its admissibility by a preponderance of the evidence"). Den Uyl's methodology fails the second and third Rule 702 requirements – i.e., that his opinions be a product of reliable principles and methods and that he applied the principles and methods reliably to the facts of the case.



Den Uyl summarily states that “[g]iven Altair’s data production, the relative weighting data discussed above is the best data available regarding MotionSolve revenue and is the basis for my assumption range.” Defendants correctly point out that “Den Uyl cites no authority, no case law, no GAAP, other standards, or articles for this novel theory.” Den Uyl’s self-serving, conclusory statement regarding the superiority of his base revenue calculation method is insufficient to show that his methodology is reliable; indeed, “to be admissible, an expert’s opinion must be supported by ‘more than subjective belief and unsupported speculation’ and should be supported by ‘good grounds, based on what is known.’” Pomella v. Regency Coach Lines, Ltd., 899 F. Supp. 335, 342 (1995) (quoting Daubert, 509 U.S. at 590).

Den Uyl also fails to explain how the MotionSolve token draw relative to all HyperWorks tokens relates to, or would be an accurate indicator of, MotionSolve revenue. All he says is that the “token draw for the HyperWorks subcomponents ... is ‘analogous to setting a commercial list price for the product,’ [which] suggests that the token prices are an indication of the relative value placed on the subcomponent products by Altair.” Den Uyl does not, however, explain how value relates to revenue or provide any support showing that it does. Defendants correctly say that “Den Uyl’s methodology produces the identical conclusion whether the facts revealed zero, all, few, or the majority of HyperWorks’ customers bought tokens and used them for MotionSolve.” Based on these unexplained flaws, the Court “conclude[s] that there is simply too great an analytical gap between the data and the opinion proffered.” Joiner, 522 U.S. at 146 (citing Turpin, 959 F.2d at 1360).

After reviewing his reports, the Court finds that Den Uyl’s “testimony is [not] the product of reliable principles and methods,” and he did not apply “the principles and methods reliably to the facts of the case. Fed. R. Evid. 702. Accordingly, the Court excludes Den Uyl’s report and testimony regarding damages in the form of a reasonable royalty.

(Doc. 757 at p. 6-10).

#### B. MSC Efforts Immediately before Trial

As a result of the exclusion of Den Uyl’s testimony, MSC had to look elsewhere for a basis for its claim for damages at trial. It decided to proceed with its damages evidence through lay witness testimony, particularly its Chief Financial Officer, Kevin Rubin (Rubin).

On February 3, 2014, the Court assumed responsibility for this case, approximately 10 days before the scheduled trial. (Doc. 766). Almost immediately, at a



status conference with the parties three days after being assigned to the case, the Court directed the parties attention to the amount of the damages claimed by MSC. MSC responded to the request in an undocketed document entitled "Damages by Defendant and Claim," which is attached as Exhibit A. It reads in part as follows:

<b>Defendant</b>	<b>Claim</b>	<b>Damages</b>
Altair	Misappropriation of Trade Secrets	up to \$75 million as royalty <sup>10</sup>

Trial began on February 12, 2014. On February 24, 2014, Altair filed a bench memorandum (Doc. 778) challenging MSC's approach to damages particularly its intention to use lay witnesses to establish a reasonable royalty. On March 5, 2014, in a supplemental bench memorandum, not docketed, Altair challenged MSC's intention to call Rubin as a witness to testify about a calculation of damages. In neither of the memoranda did Altair discuss a detailed calculation of damages claimed by MSC since MSC had not come forward with such a calculation. MSC responded to Altair's memoranda in an undocketed paper on March 5, 2014, styled MSC's Memorandum of Law Regarding Damages for Trade Secret Misappropriation Claim. The response did not discuss the amount of damages claimed by MSC as a single payment reasonable royalty. MSC concluded its response by stating:

. . . MSC is entitled to have the jury consider the revenue generated (or foreseeable to generate) . . . the MotionSolve product.

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<sup>10</sup>As noted above, MSC's single payment reasonable royalty demand of \$75 million was first articulated in July 2013. At that time, there were 15 technical trade secrets and 13 non-technical trade secrets still at issue in the case. In December 2013, the Court granted partial summary judgment to Altair and dismissed all of the non-technical trade secrets and all but five of the technical trade secrets which were at issue in the trial. Thus, although the Court had substantially shrunk the case, MSC's royalty demand remained at \$75 million.



However, as the case unfolded to the jury, MSC did not in fact offer proofs in any meaningful way as to "the revenue generated by the MotionSolve product."

## VI. Damages Testimony at Trial

### A. MSC

#### 1. Kevin Rubin

At trial, MSC's principal witness in support of what constituted a reasonable royalty was Rubin. Rubin professed familiarity with the financial aspects of software licensing. Rubin expressed the opinion that in 2007 MSC would have demanded not less than 37 million dollars and up to 50 million dollars for a paid up license. (See Trial Tr. 3/6/14 Vol. 13 at pp. 63-72).

The factors MSC would have considered were its investment in ADAMS Solver; the value MSC placed on ADAMS Solver, the acquisition process and potential loss of profit. As explained by Rubin:

. . . MSC in 2007 would not have accepted less than the profit that they believe they would lose over time – I believe they would lose at the time. And then the 50 million is the assumption that we could lose as much as, you know, 50 or more percent of our existing business to the competitor for them having the technology. So I set the upper boundaries of my view at \$50 million.

(Trial Tr. 3/6/14 Vol. 13 at p. 73).

Rubin did not correlate the factors he considered to a particular amount. While he said that MSC would have contemplated a  $\frac{1}{3}$  to  $\frac{1}{2}$  drop in revenue, he did not testify as to any drop. Lastly, he expressed no opinion on Altair's revenue from the sale or licensing of MotionSolve. Rubin also did not know if the trade secrets at issue were incorporated into it.

At best, Rubin testified that MSC would have started the hypothetical negotiation

with a demand measured by MSC's contemplated loss of revenue. Given that the misappropriation took place in 2007 and the trial took place in 2014, figures on the loss of revenue by MSC surely were available. However, actual loss of revenue by MSC played no part in the opinion Rubin expressed.

## **2. John Janevic**

John Janevic (Janevic) testified that he was Senior Director of Marketing Business Analysis for MSC from 2004 - 2009 and in 2009 was promoted to Vice President of Strategic Operations. He testified that he was familiar with MSC's pricing of its software and the solver market. He also testified as to the licensing process used by MSC for its royalty agreements and the solver market. Janevic specifically testified regarding two licenses MSC had given for the ADAMS/Solver. From one license MSC received a 35% royalty (MSC gets 35% of what the licensed company charges its customers) and from another it received \$2,700 "per seat." Neither license arrangement had any particular relevance to any license or pricing arrangement MSC and Altair would have agreed to in 2007.

## **B. Altair**

### **1. Martin Nichols and James Brancheau**

Martin Nichols (Nichols) and James Brancheau (Brancheau) testified regarding how Altair prices its products in the HyperWorks suite using the token system which the Court explained in some detail in excluding Den Uyl as an expert witness. They both explained that MotionSolve is one of many software programs in Altair's suite of programs known as HyperWorks and each component is assigned a token value. Customers who purchase tokens can use any program whose token draw is equal to or



below the number of tokens purchased. Nichols in particular explained that due to the nature of the token system, it is not possible to directly track the revenue Altair receives from MotionSolve using just the token price.

## 2. James Schmid

James Schmid (Schmid) testified as an expert. He testified that he calculated the revenue from the HyperWorks suite as a percentage of Altair's overall revenue. To determine the percentage of MotionSolve's revenue, he calculated how much MotionSolve was used as a percentage of the overall use of the HyperWorks suite, calling it the "usage number." In so doing, he found that MotionSolve was a very small percentage of overall usage in the HyperWorks suite. He used that percentage multiplied by the HyperWorks revenue to determine Altair's revenue from MotionSolve. Schmid's damage calculation is best expressed in DX 1256, attached as Exhibit B, which was presented to the jury during his testimony.

Schmid explained that he had Altair's revenue for software sales, and there has been testimony and discussion that 90 percent of Altair's software sales is specifically for the HyperWorks suite. So for each year from 2008 to 2012, Schmid took the sales – Altair's software sales times 90 percent, to arrive at the HyperWorks suite sales for that particular year. Schmid then explained that the next step was to determine the revenue of MotionSolve, realizing that MotionSolve is one of the products in the HyperWorks suite. Schmid did this by calculating the percentage of the usage of MotionSolve to the entire HyperWorks suite. Schmid found that Altair tracks that usage using a unit called the "HyperWork unit minute," which is tracked from the "reporting

customers.”<sup>11</sup> From that HyperWork unit minute, Schmid was able to calculate the total of the HyperWork unit minutes and the MotionSolve unit minutes. From these numbers, he derived a percentage usage of MotionSolve as compared to the entire HyperWorks suite. For each of the five years (2008-2012), the usage rate was very low. Schmid then used Altair’s revenue from its HyperWorks suite (90% of its overall revenue) and multiplied that figure by the usage percentage of MotionSolve. For example, in 2010 Altair derived \$102,420.00 in revenue from the HyperWorks suite. The usage percentage from MotionSolve was .255 percent. Multiplying the usage times the revenue garnered the figure of \$261,170 as MotionSolve’s revenue for 2010. Following the same method for the other four years and adding them together, Schmid testified that the revenues associated with MotionSolve over the relevant five year period were \$1,298,555. Schmid then testified as to the factors for a reasonable royalty rate, ultimately concluding that a 10% royalty rate was appropriate.

## VII. MSC’s Final Argument

### A. Opening

MSC’s position varied on what it considered a lump sum reasonable royalty for Altair’s misappropriation. In closing argument, MSC told the jury:

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<sup>11</sup>Schmid testified that he received reporting customers data in the form license numbers. Schmid also testified that he did not receive a full percentage of reporting customers for each year and was roughly in the 40 percent range and the percentage of reporting customers increased every year. He also testified he was able to validate his figures despite having less than 100 percent usage data. However, MSC called William Choi as a rebuttal witness who challenged Schmid’s use of the reporting data. The Court’s explanation of Schmid’s methodology is not to be interpreted as a finding that Schmid’s testimony is credible or incredible. Rather, it is set forth to contrast the proofs offered by MSC.



We're asking you to award MSC damages measured by a reasonable royalty caused by Mr. Rampalli's unauthorized disclosure for use of MSC's trade secrets and Altair's improper acquisition or use of those secrets, and we are asking for a damage award, as Mr. Rubin described it for you, somewhere between \$37 million and \$50 million.

(Trial Tr. 4/07/2014 at p. 47).

However, the "between \$37 million and \$50 million" figure was in Rubin's testimony a demand, or a starting point, in a hypothetical negotiation. It was not an opinion on what figure the parties would have settled for in a hypothetical negotiation. In short, it was at best the opening number for negotiations for the amount of a single payment reasonable royalty.

#### B. Rebuttal

After the Court told MSC that it had "two minutes" left in its rebuttal argument, MSC rephrased its view of what constituted a reasonable royalty, saying:

– I want to talk to you about what Mr. Schmid did not do, and what Mr. Schmid did not do –

If you remember, this is the HyperWorks revenue. He never explained to you when I asked him how is it that they went from 90, 94 thousand in 2008 to 154 thousand – 154 million per year in HyperWorks revenue? Did you try to figure out what caused that increase in revenue, what effect MotionSolve played on that? And he didn't.

But, if you remember, Mr. Brancheau testified and others testified that the way they valued their products within the HyperWorks suite is by putting a price on it, and the price of the MotionSolve product was 10 percent of the entire HyperWorks suite products. 10 percent. That was the value of MotionSolve, 10 percent of the overall product price.

If you take 10 percent of 662 million just for those six years, that is \$62 million, and Mr. Schmid wants you to

believe that it's \$129,000, \$129,000 for these secrets.  
That's for you to decide, and at the end of the day what that  
royalty is is something that you decide.

(Trial Tr. 4/07/2014 at pp. 116-17).

This argument requires some explanation.

Schmid, as noted above, was Altair's expert. The HyperWorks revenue referenced is the revenue Altair received from its products as displayed in PX877, attached as Exhibit C. The revenue year by year from the suite of products is displayed in PX878, attached as Exhibit D. The exhibit (PX 878) was not in evidence; it was displayed to the jury as a demonstrative in the rebuttal argument. The reference to Brancheau's testimony related to the value Altair placed on MotionSolve in relation to the value placed on other products in the HyperWorks suite. Neither PX 877 nor PX 878 detail the sales of MotionSolve or the sales of the other products in the suite. There was no basis in the evidence on which the price of a MotionSolve program correlated in any way to revenue received from the sales of the aggregated of the products in the suite. Indeed, this was the very methodology Den Uyl proposed in calculating a single payment reasonable royalty which the Court rejected as unreliable.

#### C. Altair's Objection to MSC's Final Argument

Following final argument and before the charge to the jury, Altair moved for a curative instruction, explaining in detail why MotionSolve's revenue cannot be derived from its price as distinguished from its actual sale and usage. (Doc. 807). Altair asked for the following curative instruction:

**Curative Instruction:** In determining a reasonable royalty, the total revenue that Altair received from all Altair products or from all HyperWorks suite of products is not relevant. The price point of MotionSolve, as compared to other products in



the HyperWorks suite, is not relevant. To the extent MSC argued to the contrary during closing argument, you should disregard those statements.

As stated by Altair:

MSC argued that the price Altair charges customers to use MotionSolve can be used to approximate the revenue Altair generated from MotionSolve. In doing so, MSC showed the jury that HyperWorks generated \$662 million for Altair over 6 years MSC further showed the jury that Altair's total revenue for that same time period was over \$1 billion.

#### VIII. Decision

The Court summarily denied Altair's motion for a curative instruction, described above, on the grounds it lacked time to consider it. Indeed, the jury was in the jury room waiting for instructions. The Court also made the following observations:

. . .Plaintiff is well represented and its lawyers presumably would not make an argument to the Jury that they knew could get them in trouble because it was outside some rulings that had been made previously in the case. . . .The record is protected by Defendant. . . .

The Court sui [sic] sponte raises the question on the revenue reference whether or not it was appropriate to argue it to the Jury for the first time in rebuttal and not in the principle argument because by arguing it in rebuttal, it did not give the Defendant an opportunity to respond. . . .

I've often said in a patent case tried to a Jury that the Jury's verdict isn't the end of the Judge's problems with the case, it's only the beginning because the JMOL motion in a patent case has as much life as the whole trial if not more, and I guess the same thing goes for trade secrets.

(Trial Tr. 5/08/2014 at pp. 2-3).

MSC's rebuttal closing argument was improper. The Court previously excluded Den Uyl's testimony, as described above, for computing Altair's revenue from the sale of MotionSolve in this fashion and MSC's argument based on Brancheau's testimony

was a gross misrepresentation of what he said. MSC's presentation of damages evidence, through Rubin and in rebuttal closing argument, was little more than a recycling of Den Uyl's theory of damages.

MSC's rebuttal argument for the first time gave the jury its position on the revenue Altair received from the sale of MotionSolve, the accused product. It computed the revenue as follows:

- Altair's revenue from HyperWorks, a menu of products it offered in the market, rose from \$105 million in 2008 to \$171 million in 2012
- the increase in revenue was roughly \$60 million
- the price charged by Altair for MotionSolve was ten (10%) percent of the aggregate of the price for the suite of programs

Therefore, said MSC, the revenue for MotionSolve over the years was \$60 million. MSC reached this figure by assuming the increase in overall HyperWorks revenue was attributable to revenue received from the sale of MotionSolve.

There is nothing in the record to support this assumption. It is speculative and conjectural. A party may not put unsubstantiated, irrelevant, and large revenue figures to a jury a proof of a damages award to be given in its favor. That is precisely what MSC did here.

There are a multitude of facts, or more appropriately an absence of facts, supporting the finding that the \$26,000,000.00 award was excessive, particularly when "tak[ing] into account events and facts post-dating the hypothetical negotiation" as the jury was instructed.

1. The only customer of Altair buying MotionSolve identified in the record was Toyota, and at that, Toyota did not cease doing business with MSC when it added



Altair as a vendor.

2. There was no evidence in the record of the overall market for solver programs, or of MSC or Altair's share.

3. There was no evidence in the record of Altair's income from the sale or licensing of MotionSolve.

4. MSC did not present evidence regarding how the jury could assess or apportion the value of ADAMS/Solver to the specific trade secrets.<sup>12</sup> For example, MSC presented no evidence of customer demand for the three specific trade secrets, or evidence of the development costs specifically attributable to those particular features.<sup>13</sup>

5. The jury award was based entirely on what MSC's witness and MSC's attorney argued MSC would have demanded at the hypothetical negotiation. This is contrary to the jury instructions which asked them to determine what the parties would have agreed to as a fair licensing price at the time that the misappropriation occurred.

Admittedly, Altair's income rose from \$105,400,000 in 2008, the year MotionSolve was included in the HyperWorks suite of products, to \$171,300,000 in 2012, for an increase of \$65,900,000.00, and ninety (90%) percent of that revenue was

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<sup>12</sup>The testimony was that the three trade secrets comprised less than 150 lines of code in the MotionSolve product, which has over 950,000 lines of code. (Trial Tr. 3/31/14 Vol. 20 at p. 8) (Schmid: "it's my understanding that the total number of lines that these trade secrets would allegedly occupy is I believe 150 out of 950,000 lines"); (Trial Tr. 3/27/14 Vol. 18 at p. 97) (950,000 lines of code).

<sup>13</sup>Notably, the Court of Appeals for the Federal Circuit recently vacated a \$368 million damages award against Apple because the underlying damages model was based on the entire price of Apple products instead of being limited to the infringing features of the devices. Apple, Inc. v. VirnetX, Inc., et al, 767 F.3d 1308 (Fed. Cir. 2014).

from the HyperWorks suite of products (DX 1256). Also, the aggregate token count for the entire suite of HyperWorks products was 37,000, and the token count for MotionSolve was 3,700, or ten (10%) percent of the total (DX 872).

To argue, however, based on the foregoing, that therefore Altair's income from the licensing of MotionSolve was \$62,000.00 for the five (5) years was speculative and conjectural, and highly prejudicial to Altair since it had no opportunity to respond to it.

Altair said it best in their post argument brief, comparing the evidence at trial with and MSC's rebuttal closing to rightly contend that the jury's verdict on damages cannot stand:

MotionSolve's revenues of under \$2 million are markedly inconsistent with the \$50 million demand MSC made at trial. So, MSC ignored MotionSolve's revenue at trial, presenting its entire affirmative and rebuttal case without offering any revenue calculation for MotionSolve. Instead, MSC invited the jury to award speculative damages based only on what its CFO claimed MSC would have demanded in 2007 at the time of the hypothetical negotiation. The Book of Wisdom reveals that the CFO's demand was based on an inflated notion of the value of Adams/Solver and of the market share he speculated MSC might lose to MotionSolve. During the past seven years, MotionSolve's revenues have been minimal and it has had no meaningful impact on Adams/Solver's market share.

When MSC finally presented a revenue calculation to the jury in the last two minutes of its rebuttal closing, MSC's attorney offered a theory of revenue that had no foundation in the record and had been expressly excluded by court order. MSC's attorney posited that MotionSolve had earned \$62 million in revenue based on a theory that MotionSolve's "price" equates to MotionSolve's revenues. This erroneous theory—which was not articulated or adopted by any witness at trial—cannot support the damages award.

MSC's fabricated revenue theory was contrary to all of the revenue evidence introduced at trial, which consistently established that MotionSolve's revenues were nowhere close to \$62 million. Jim Schmid testified to his calculation that MotionSolve earned only \$1.3 million in total revenues over five years (2008-2012), and that Altair lost \$1.1 million on the product. James Dagg, Altair's CTO, testified that MotionSolve made only \$500,000 in 2013. Even MSC's own witness, John Janevic, testified that he believed MotionSolve was just a couple of percent of a \$25-40 million market. The great weight of the



evidence was clear—MotionSolve's actual revenues were nowhere near large enough to support a \$26.1 million royalty.

MSC's unsupported representation that MotionSolve earned \$62 million undoubtedly influenced the jury in accepting MSC's licensing demand. No rational jury could have awarded \$26.1 million as a reasonable royalty based on less than \$2 million in revenue. MSC's calculated maneuver to spring the \$62 million revenue number in rebuttal closing—when Altair would have no opportunity to respond and just before the jury deliberated—worked.

. . . . The jury's damages award of \$26.1 million cannot stand when all of the evidence at trial showed less than \$2 million in MotionSolve revenue. The jury's award was against the great weight of the evidence, excessive, and the product of MSC's prejudicial arguments, and it should be vacated.

(Doc. 913 at p. 1-2).

### IX. Conclusion

When all is said and done, MSC after a long and contentious trial of their case did an estimable job at trial of proving it was more likely than not that Altair hired away MSC employees and gained information from them to its competitive advantage contrary to the employees' contractual obligations for MSC. MSC also proved it was more likely than not Altair misappropriated three trade secrets of MSC related to its ADAMS/Solver product. What MSC did not do, however, was introduce competent evidence at trial of the damages suffered by the misappropriation. This lack of evidence was occasioned primarily by the fact that it did not have at trial expert opinion as to what was a single payment reasonable royalty for the misappropriations.<sup>14</sup>

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<sup>14</sup>For a discussion as to the importance of expert testimony in presenting a damages theory in an intellectual property case, particularly for a reasonable royalty, see the blog entry dated May 6, 2013 on "BullsEye: A Legal Blog on Expert Topics" discussing an unpublished decision from the district of New Jersey where the district court granted defendant's motion for summary judgment on plaintiff's claims for damages measured by a reasonable royalty for lack of proof, specifically the lack of expert testimony. The district court's opinion is Unicom Monitoring, LLC v. Cencom, Inc., 2013 WL 1704300 (D.N.J. Apr. 19, 2013).

Dowagiac Mfg. Co. v. Minn. Moline Plow Co., 235 U.S. 641, 648 (1915) is said to be the case that established that a reasonable royalty was a proper measure of damages.<sup>15</sup>

There the Supreme Court stated:

. . . although the plaintiff was entitled to prove what would have been a reasonable royalty and thereby show a proper basis for assessment of damages, no proof upon that subjected was presented.


The same is true here. MSC was entitled to present a single payment reasonable royalty theory of damages. The problem was it failed to offer competent proof of its theory.

The conclusion that Altair is entitled to a new trial on damages is not one that the Court has arrived at lightly. Rather, it is the result of thoroughly examining the record in light of the relevant law. In so doing, it became clear that it "the failure to present competent evidence regarding how the factfinder should perform the reasonable royalty calculation is fatal to [MSC's] claim for reasonable royalty damages." Unicom Monitoring, LLC v. Cencom, Inc., 2013 WL 1704300, \*8 (D.N.J. Apr. 19, 2013).

Accordingly, Altair's motion for a new trial is GRANTED. The portion of the judgment (Doc. 814) setting forth the jury's \$26,100,000 damages verdict based on misappropriation of the three trade secrets is VACATED.

SO ORDERED.

Dated: 11/13/14  
Detroit, Michigan

  
AVERN COHN  
UNITED STATES DISTRICT JUDGE

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<sup>15</sup>See Zelin Yang, Note, Damaging Royalties: An Overview of Reasonable Royalty Damages, 29 Berkeley Tech. L.J. 647, 651 (2014).



## EXHIBIT A

Damages by Defendant and ClaimMSC Software Corporation v. Altair Engineering, et al.

Defendant	Claim	Damages
Marc Klinger	Breach of Contract (Nonsolicitation) as to Koerner	\$2,503,575
	Breach of Contract (Nonsolicitation) as to Pertosa	\$1,276,455
	Breach of Contract (Nonsolicitation) as to Riedeman	\$2,103,415
Rajiv Rampalli	Breach of Contract (Nonsolicitation) as to Krueger	\$2,717,180
	Breach of Contract (Nonsolicitation) as to McDevitt	\$2,826,245
	Breach of Contract (Confidentiality)	Up to \$75 million as royalty*
	Misappropriation of Trade Secrets	Up to \$75 million as royalty*
Michael Hoffmann	Breach of Contract	\$3,334,615 for Rampalli
		At least \$1 million for lost Toyota business
		\$399,090 as return of consideration
		Up to \$75 million as royalty*
Altair Engineering	Misappropriation of Trade Secrets	Up to \$75 million as royalty*
	Tortious Interference With Contract (Klinger Solicitation of Riedeman)	\$2,103,415

\*Damages will be sought severally from these Defendants for this single damages element, with the jury to apportion financial liability based upon proofs at trial.

# Altair Calculation of Revenue - Reasonable Royalty 2008-2012

## Attachment 5

Confidential Attorney's Eyes Only

	2008	2009	2010	2011	2012	Total 2008 to 2012
Altair Revenue (in thousands USD)	\$ 105,400.00	\$ 103,700.00	\$ 113,800.00	\$ 141,300.00	\$ 171,300.00	\$ 635,500.00
Percent HyperWorks	90%	90%	90%	90%	90%	
HyperWorks Revenue (in thousands USD)	\$ 94,860.00	\$ 93,330.00	\$ 102,420.00	\$ 127,170.00	\$ 154,170.00	\$ 571,950.00
Percent MotionSolve [3]	0.255% [5]	0.255% [5]	0.255% [5]	0.282%	0.129%	
MotionSolve Revenue (in thousands USD)	\$ 241.89	\$ 237.99	\$ 261.17	\$ 358.62	\$ 198.88	\$ 1,298.55
Reasonable Royalty Rate	10%	10%	10%	10%	10%	
Reasonable Royalty Amount (in thousands USD)	\$ 24.19	\$ 23.80	\$ 26.12	\$ 35.86	\$ 19.89	
Average Interest on AAA Bonds [4]	5.63%	5.31%	4.94%	4.64%	3.67%	
PV Factor	1.35154	1.26216	1.18384	1.12007	1.05555	
PV as of 12-31-13	\$ 32.69	\$ 30.04	\$ 30.92	\$ 40.17	\$ 20.99	\$ 154.81
Total Reasonable Royalty Amount as of 12-31-13 assuming 5 year term (\$'s X 1,000)						\$ 154.81

[1] Altair Software Revenue

[2] Assuming 2013 data is the same as 2012 data

[3] Level Total Usage - MotionSolve (HWU MINUTES)/ Level Total Usage - All Products (HWU MINUTES)

[4] From Moody's Seasoned Aaa Corporate Bond Yield

[5] Assuming 2010 data for the years 2008 - 2009

Defendant's  
Ex.  
1256



## EXHIBIT C

<b>HYPERWORKS (2009)</b>		
<b>PRODUCT NAME</b>	<b>TOKEN COUNT</b>	<b>PERCENT OF TOTAL</b>
HyperMesh	2,100	5.57%
HyperView	2,100	5.57%
HyperGraph	600	1.59%
HyperCrash	2,100	5.57%
OptiStruct	5,000	13.26%
Radioss	2,500	6.63%
MotionView	2,100	5.57%
<b><i>MotionSolve</i></b>	<b>3,800</b>	<b>10.01%</b>
HyperForm	2,100	5.57%
HyperExtrude	5,000	13.26%
HyperWorks Process Mgr.	1,000	2.65%
Altair Data Mgr.	400	1.06%
HyperStudy	3,800	10.01%
Harness Link	5,000	13.26%
PBS Pro	3	0.008%
<b>TOTALS</b>	<b>37,703</b>	<b>100%</b>

## EXHIBIT D

YEAR	ALTAIR'S TOTAL REVENUE	ALTAIR'S SOFTWARE REVENUE	ALTAIR'S HYPERWORKS REVENUE (using 90% estimate)	ALTAIR'S MOTIONSOLVE REVENUE (allocated by % of total tokens)
2007	\$145,000,000	\$100,900,000	\$90,810,000	\$9,081,000
2008	\$152,800,000	\$105,400,000	\$94,860,000	\$9,486,000
2009	\$139,300,000	\$103,700,000	\$93,330,000	\$9,333,333
2010	\$170,800,000	\$113,800,000	\$102,420,000	\$10,242,000
2011	\$212,900,000	\$141,300,000	\$127,170,000	\$12,717,000
2012	\$246,000,000	\$171,300,000	\$154,170,000	\$15,417,000
2013	???	???	???	???
2014	???	???	???	???
2015	???	???	???	???
2016	???	???	???	???
2017	???	???	???	???
<b>TOTALS</b>	<b>\$1,066,800,000</b>	<b>\$736,400,000</b>	<b>\$662,760,000</b>	<b>\$66,276,000</b>