

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

SIEMENS MOBILITY, INC.,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C.A. No. 16-284-LPS
	:	
WESTINGHOUSE AIR BRAKE	:	
TECHNOLOGIES CORPORATION (d/b/a	:	
WABTEC CORPORATION) and WABTEC	:	
RAILWAY ELECTRONICS, INC.,	:	
	:	
Defendants.	:	

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MEMORANDUM OPINION

July 18, 2019
Wilmington, Delaware



STARK, U.S. District Judge:

Pending before the Court are the parties' post-trial motions as well as briefing regarding Westinghouse's ensnarement defense. On January 23, 2019, during a two-week jury trial, Plaintiff Siemens Mobility, Inc. ("Siemens") filed a Motion for Judgment as a Matter of Law ("JMOL") (D.I. 444). Following trial, Siemens filed a Motion for Enhanced Damages, Attorneys' Fees, Supplemental Damages, and Pre-Judgment and Post-Judgment Interest (D.I. 479) while Defendants Westinghouse Air Brake Technologies Corporation (d/b/a Wabtec Corporation) and Wabtec Railway Electronics, Inc. ("Westinghouse" or "Wabtec") filed a Motion for Judgment as a Matter of Law and a New Trial (D.I. 483). Briefing on the post-trial motions was completed on May 6, 2019. (D.I. 481, 485, 512, 513, 522, 523) Briefing on Westinghouse's ensnarement defense was completed on May 3, 2019. (D.I. 476, 504, 514, 519) The Court heard oral argument on May 28, 2019. (D.I. 531 ("Tr."))¹ The Court has also considered the parties' supplemental letters. (D.I. 532, 533)

For the reasons stated below, the Court will deny as moot Siemens' initial JMOL, grant in part and deny in part Siemens' post-trial motion, and deny Westinghouse's post-trial motion. The Court also rejects Westinghouse's ensnarement defense.

I. BACKGROUND

Siemens filed this patent infringement case against Westinghouse in April 2016. While many patents and claims were asserted throughout the litigation, Siemens ultimately presented eight claims from eight different patents (grouped into three different technologies) to the jury. The asserted patents are U.S. Patent Nos. 6,996,461, 7,236,860, 7,079,926, and 6,824,110 (collectively, the "OBU patents"), U.S. Patent Nos. 8,714,494 and 9,233,698 (collectively, the

¹ The trial transcripts (D.I. 465-74) will be cited as "Trial Tr."

“BOS patents”), and U.S. Patent Nos. 7,467,032 and 7,742,850 (collectively, the “EOT patents”). Siemens accused Westinghouse of directly and indirectly infringing, literally and by the doctrine of equivalents, the asserted claims, while Westinghouse argued that all eight patent claims were invalid. Siemens sought reasonable royalty damages for the OBU and BOS patents and lost profits or reasonable royalty damages for the EOT patents. Siemens also argued that Westinghouse’s infringement of the EOT patents was willful.

After a two-week trial in January 2019, the jury returned the following verdict (D.I. 447):²

	OBU Patents				BOS Patents		EOT Patents	
	'461	'860	'926	'110	'494	'698	'032	'850
Direct	DOE	DOE	DOE	Literal	DOE	Literal	Literal	
Indirect – Induced	No	No	No	No	No	No	Literal	Literal
Indirect – Contributory	DOE	DOE	DOE	Literal	DOE	Literal	Literal	Literal
Invalid	No	No	No	No	No	No	No	No
Willful							Yes	Yes
Damages	\$5,598,600						\$1,062,841	

The Court entered judgment on the jury verdict on February 25, 2019. (D.I. 460)

II. LEGAL STANDARDS

A. Judgment as a Matter of Law

Judgment as a matter of law is appropriate if “the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for [a] party” on an issue. Fed. R. Civ. P. 50(a)(1). “Entry of judgment as a matter of law is a sparingly invoked remedy,” one “granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the

² The blacked-out cells indicate issues on which the jury was not asked to make a finding.

advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability.” *Marra v. Phila. Hous. Auth.*, 497 F.3d 286, 300 (3d Cir. 2007) (internal quotation marks omitted).³

To prevail on a renewed motion for judgment as a matter of law following a jury trial, the moving party “must show that the jury’s findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusions implied [by] the jury’s verdict cannot in law be supported by those findings.” *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (internal quotation marks omitted). “‘Substantial’ evidence is such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review.” *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984).

In assessing the sufficiency of the evidence, the Court must give the non-moving party, “as [the] verdict winner, the benefit of all logical inferences that could be drawn from the evidence presented, resolve all conflicts in the evidence in his favor, and in general, view the record in the light most favorable to him.” *Williamson v. Consol. Rail Corp.*, 926 F.2d 1344, 1348 (3d Cir. 1991); *see also Perkin-Elmer Corp.*, 732 F.2d at 893. The Court may not assess the credibility of witnesses nor “substitute its choice for that of the jury between conflicting elements of the evidence.” *Perkin-Elmer Corp.*, 732 F.2d at 893. Rather, the Court must determine whether the evidence reasonably supports the jury’s verdict. *See Dawn Equip. Co. v. Ky. Farms Inc.*, 140 F.3d 1009, 1014 (Fed. Cir. 1998); *Gomez v. Allegheny Health Servs. Inc.*, 71 F.3d 1079, 1083 (3d Cir. 1995) (describing standard as “whether there is evidence upon which a

³ Although this is a patent case, the Court must look to the law of the Third Circuit for the procedural standards applicable to motions for judgment as a matter of law or a new trial. *See ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1343 (Fed. Cir. 2012).

reasonable jury could properly have found its verdict”); 9B Charles Alan Wright, Arthur R. Miller & Edward H. Cooper, *Federal Practice & Procedure* § 2524 (3d ed. 2008) (“The question is not whether there is literally no evidence supporting the party against whom the motion is directed but whether there is evidence upon which the jury properly could find a verdict for that party.”).

B. New Trial

Federal Rule of Civil Procedure 59(a) provides in pertinent part, “[t]he court may, on motion, grant a new trial on all or some of the issues – and to any party – as follows: . . . after a jury trial, for any reason for which a new trial has heretofore been granted in an action at law in federal court.” New trials are commonly granted where “the jury’s verdict is against the clear weight of the evidence, and a new trial must be granted to prevent a miscarriage of justice,” where “newly-discovered evidence exists that would likely alter the outcome of the trial,” where “improper conduct by an attorney or the court unfairly influenced the verdict,” or where the jury’s verdict was “facially inconsistent.” *Zarow-Smith v. N.J. Transit Rail Operations*, 953 F. Supp. 581, 584-85 (D. N.J. 1997) (internal citations omitted).

The decision to grant or deny a new trial is committed to the sound discretion of the district court. *See Allied Chem. Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36 (1980); *Olefins Trading, Inc. v. Han Yang Chem Corp.*, 9 F.3d 282, 289 (3d Cir. 1993) (reviewing “district court’s grant or denial of a new trial motion” under “abuse of discretion” standard). Although the standard for granting a new trial is less rigorous than the standard for granting judgment as a matter of law, in that the Court need not view the evidence in the light most favorable to the verdict winner, ordinarily a new trial should only be granted “where a miscarriage of justice would result if the verdict were to stand,” the verdict “cries out to be overturned,” or the verdict “shocks [the] conscience.” *Williamson*, 926 F.2d at 1352-53.

C. Enhanced Damages

When damages resulting from patent infringement are found, “the court *may* increase the damages up to three times the amount found or assessed.” 35 U.S.C. § 284 (emphasis added). In *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, 136 S. Ct. 1923, 1932 (2016), the Supreme Court explained that § 284 means “[d]istrict courts enjoy discretion in deciding whether to award enhanced damages, and in what amount.” *See also id.* at 1934 (“Section 284 gives district courts discretion in meting out enhanced damages.”).

Halo further explains that “enhanced damages are generally appropriate under § 284 *only in egregious* cases.” *Id.* at 1932 (emphasis added) They are “*not* to be meted out in a *typical* infringement case.” *Id.* (emphasis added). *Halo* continues: “The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or – indeed – characteristic of a pirate.” *Id.* “[N]one of this is to say that enhanced damages *must* follow a finding of egregious misconduct. As with any exercise of discretion, courts should continue to take into account the particular circumstances of each case in deciding whether to award damages, and in what amount.” *Id.* at 1933 (emphasis added). The party seeking enhanced damages has the burden of proving by a preponderance of the evidence that they should be awarded. *See id.* at 1934.

D. Attorneys’ Fees

In “exceptional” patent cases, a Court may award “reasonable attorney fees” to the “prevailing party.” 35 U.S.C. § 285. A case is “exceptional” under § 285 if it is “simply one that stands out from others with respect to the substantive strength of a party’s litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated.” *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014). Ultimately, the Court must make a discretionary decision based on the

totality of circumstances, which may include factors such as “frivolousness, motivation, objective unreasonableness (both in the factual and legal components of the case) and the need in particular circumstances to advance considerations of compensation and deterrence.” *Id.* at 1756 & n.6. A party moving for attorneys’ fees must demonstrate, by a preponderance of the evidence, that a case is “exceptional.” *Id.* at 1758.

III. DISCUSSION

A. **Westinghouse’s Motion for Judgment as a Matter of Law That It Does Not Infringe the ’926 Patent**

Westinghouse contends that insufficient evidence was presented to support the jury’s finding that claim 4 of the ’926 patent is infringed under the doctrine of equivalents (“DOE”). The claim element at issue is: “preventing the train from moving from a current location if the current location is not within a boundary for an accepted authorization.” (’926 patent, cl. 4) The Court adopted the parties’ agreed-upon construction that the term “preventing the train from moving from a current location” means “ensuring that the train does not move.” (D.I. 131 at 11; D.I. 165 at 5 n.2)

Siemens’ theory of infringement, as presented by its expert, Dr. Ghaly, and confirmed by Westinghouse’s engineer, Mr. Kernwein, was that the accused I-ETMS functions such that if it senses any movement greater than 0.1 miles per hour when the train is not authorized to move, then it will react by stopping the train as quickly as practically possible. (*See* Trial Tr. at 653-54, 711-12, 1299-1300) Westinghouse’s expert, Dr. Zarembski, confirmed that I-ETMS is designed to stop the train when it detects movement over 0.1 miles per hour. (*See id.* at 1491-92, 1511-12) This testimonial evidence and supporting documentation presented to the jury,⁴ taken in the light

⁴ Dr. Ghaly’s DOE testimony was not improperly conclusory and unsupported, as Westinghouse contends. (*See* D.I. 523 at 1-2) Instead, Dr. Ghaly explained how I-ETMS functioned and why he thought it practiced the claim elements. (*See* Trial Tr. at 651-55, 711-12)

most favorable to Siemens as the verdict winner, sufficiently supports the jury's finding of DOE infringement. While the jury may reasonably have determined that the I-ETMS system did not literally "prevent[] the train from moving," I-ETMS did perform substantially the same function (i.e., braking as soon as practicable when there was no authorization to move) in substantially the same way (i.e., braking when slight movement is detected) to achieve substantially the same result (i.e., a full stop). (*See* Tr. at 101)

The Court is not persuaded by Westinghouse that Siemens' infringement theory conflates the "preventing" step with the "stopping" step. (*See* D.I. 485 at 4) Instead, Siemens has consistently – with respect to infringement and validity, in this Court and at the Patent Trial and Appeal Board ("PTAB") – taken the view that the "preventing" step requires preventing a stationary (or substantially stationary) train from moving, while the "stopping" step requires stopping a moving train. (*See* D.I. 512 at 7) Siemens' DOE theory also does not vitiate the "preventing" step: the antithesis of preventing movement would be allowing the train to move freely, whereas I-ETMS merely allows the train to move at 0.1 miles per hour. (*See id.* at 6)

Additionally, while the patent's specification does discuss the prevention of *any* train movement (*see* D.I. 485 at 3-4), the claim itself "is silent as to *how* the train is prevented from moving" (D.I. 512 at 7). It was reasonable for the jury implicitly to have found, based on the evidence presented, that "applying the brakes as soon as the train attempts to move is one (equivalent) way of doing so." (*Id.*)

Finally, the Court agrees with Siemens that Dr. Ghaly sufficiently addressed the remainder of the claim element – that the prevention of movement occurs when the train is located outside the bounds of an "accepted authorization." (*See* Trial Tr. at 648-49, 652-53)

As the Court concludes that the evidence is sufficient to support the jury's finding, Westinghouse's JMOL will be denied.

B. Westinghouse's Motion for a New Liability Trial

Westinghouse seeks a new trial on numerous grounds. The Court discusses each below. In no instance has Westinghouse demonstrated that the jury's verdict is against the clear weight of the evidence or that a new trial must be granted to prevent a miscarriage of justice.

1. Siemens' Positions Concerning the "Interrogation Message"

Westinghouse's argument that Siemens' infringement and validity arguments were inconsistent throughout trial, and that the Court should have clarified the claim construction to reduce jury confusion, lacks merit.

At claim construction, the issue before the Court was whether the claimed transmission from the train to the configurable device could proceed by way of intervening devices. (*See* D.I. 107 at 9-11; D.I. 109 at 6-9; D.I. 119 at 8-12; D.I. 121 at 6-9; D.I. 165 at 13-15) The Court answered in the affirmative, agreeing with Siemens and concluding that the claimed transmission need not be "direct" between the train and the configurable device. (D.I. 165 at 14) The word "direct" in this context simply means that there may be intervening devices in the transmission from the train to the configurable device. The Court did not comment on whether the claimed transmission must be the same original message that starts at the train and ends at the configurable device.

With respect to infringement, certain facts are undisputed. It is undisputed that in Westinghouse's accused I-ETMS system, the train sends the interrogation message to a wayside interface unit ("WIU") that is located along the track and is associated with a configurable device. (*See* D.I. 485 at 8; D.I. 512 at 8-9) It is further undisputed that a WIU is not a configurable device. (*See* D.I. 485 at 8; D.I. 512 at 8-9; Trial Tr. at 692) It is also undisputed

that the interrogation message in I-ETMS does not ever reach the configurable device itself. (*See* D.I. 485 at 8; D.I. 512 at 8-9)

Siemens' DOE theory of infringement – presented to the jury through Dr. Ghaly – was that sending the message from a train to a WIU is substantially equivalent to sending the message to the configurable device, because the WIU is an interface point for the configurable device similar to a transceiver connected to a configurable device. (Trial Tr. at 627-28, 630-31, 691-92) The jury could reasonably have found that while the claim literally required the transmission from the train to reach (directly or indirectly) the configurable device, nonetheless the WIU is equivalent to a configurable device, as the WIU functions in substantially the same way (and with substantially the same result) as a transceiver on a configurable device, and therefore I-ETMS infringes by equivalents.

There is nothing inconsistent between the Court's construction – allowing for a transmission between the train and the configurable device to be indirect, i.e., to travel through an intervening device before reaching the configurable device – and Siemens' DOE infringement theory, under which the interrogation message travels from the train to the WIU, where the WIU is an equivalent to the configurable device.⁵

Siemens' invalidity positions were also not inconsistent with its infringement positions or the Court's claim construction. At trial, there was a factual dispute regarding how the communication system in the prior art CBTM functioned. For Siemens, Dr. Ghaly testified that in CBTM, the train sends requests only to the back office segment, that the back office segment

⁵ Siemens did argue during claim construction that a WIU is an intervening device (*see* D.I. 107 at 10) rather than an equivalent of a configurable device, but the evolution of its position is neither improper, unusual, nor unsupported. Nor did Siemens advocate inconsistent positions before the jury – nor any position that was inconsistent with the Court's claim construction.

separately sends a request to the wayside segment, and that the two messages are “independent communications” with “no linkage between” them. (Trial Tr. at 1523-24) For Westinghouse, Ms. Grimm testified that the message goes from the train to the base station to the FEP/CC (or router) to the zone logic controller (or part of the system in the back office segment) and back to the FEP/CC and then back to the base station and finally to the configurable device. (*See id.* at 1057-58, 1096-98; *see also id.* at 1011 (Mr. Wilson)) In other words, Siemens contends that the original message from the train never gets past the back office, but rather a new message gets sent from the back office to the wayside,⁶ while Westinghouse asserts that the original message does get from the train to the wayside via the back office. (*See* D.I. 512 at 10; D.I. 523 at 6) In Siemens’ view, the patents require that the claimed transmission is one message rather than a line of multiple, separate messages. Westinghouse did not adequately respond to this argument at

⁶ Westinghouse recently filed a supplemental letter arguing that Siemens presented inconsistent arguments regarding the operation of CBTM through its invalidity expert in another case, John Loud. (*See* D.I. 532) (referring to June 27, 2019 report filed in *Westinghouse Air Brake Technologies Corp. v. Siemens Mobility, Inc.*, C.A. No. 17-1687-LPS-CJB) Not only is Westinghouse’s letter untimely – having been filed, without leave or even request for permission to file – on July 9, 2019, by which point the motions addressed in this Memorandum Opinion had been under advisement post-argument for six weeks – but it is also unpersuasive, for reasons explained in Siemens’ responsive letter, including that Mr. Loud’s opinion in the other case relates to a different patent, with different limitations, from the perspective of a person of skill in the art at a different time. (*See* D.I. 533) The Court agrees with Siemens that, in the instant case, the jury could have reasonably found as follows:

In essence, the evidence showed that base stations in CBTM served only as a communications relay for forwarding communications from the train to the central office, or from the central office to the train. By contrast, the WIUs used in Wabtec’s infringing system serve as an interface between the train and a wayside device, such as a switch or crossing gate, and not between the train and the central office.

(*Id.* at 2)

trial (*see* D.I. 512 at 10; Trial Tr. at 1731-32), and it was not unreasonable for the jury to accept Siemens' view.

In its closing argument, Siemens argued that “[t]here is no direct train to wayside communications in CBTM. It just doesn’t happen.” (Trial Tr. at 1680-81) This statement is consistent with Siemens’ invalidity argument that the original message from the train does not ever reach the wayside; it just goes to the back office and then a new message goes to the wayside. This statement is also consistent with the Court’s claim construction, which permits intervening devices but did not comment on whether the message must remain in its original form throughout the entire transmission.⁷ Finally, Siemens’ statement in closing is also consistent with Siemens’ infringement position that the WIU is equivalent to a configurable device.

Siemens’ positions have been consistent throughout trial and in its post-trial briefing. At trial, Siemens’ counsel represented to the Court that the distance a message travels, the presence of intervening devices, and the amount of time it takes the message to travel do not matter for infringement or validity. (*See id.* at 1210-11) Rather, what matters is whether the transmission is of one message that makes stops along the way (which would practice the claims) or if the transmission stops at an intervening device where an entirely new transmission is created and sent along the path (which would not practice the claims). (*See id.* at 1211-12) The Court has not been persuaded that Siemens advocated any position inconsistent with these representations

⁷ Siemens’ use of the word “direct” in its closing in connection with discussing CBTM was different and broader than the Court’s use of “direct” in claim construction. In its claim construction opinion, the Court held that the message need not be “direct,” meaning there may be intervening devices between the train and the configurable device. In its closing argument, Siemens argued that CBTM’s message is not “direct” in the sense that no single message passes from point A to point B to point C; rather, CBTM involves multiple separate messages.

at any point during trial, nor that any aspect of Siemens' trial position was inconsistent with the Court's claim construction.

Accordingly, the Court will deny this aspect of Westinghouse's motion.

2. The "Star Wars" Video

The Court sustained Siemens' hearsay objection to Westinghouse's request to move into evidence (and show) a video of a 2000 industry demonstration of CBTM. (*See id.* at 1042-52) The video, copyrighted in 2000, was described by both parties as showing a demonstration of CBTM to the industry in 2000 and depicting the general functionality of CBTM, but not necessarily including the functionality that is accused of meeting each claim limitation of the asserted patents. (*See id.* at 1046-47, 1049) Siemens did not dispute that the system was known generally via public demonstration by 2000 but argued that the detailed functionality relevant to the claim elements was not, at that date, publicly known. (*See id.* at 1046-47) Without the benefit of seeing the video (neither party provided it to the Court), the Court ruled that it was hearsay being offered for the truth of the matter asserted and contained more than the present sense impression of Westinghouse's witness, Ms. Grimm. (*See id.* at 1052)

Having now been provided the video, the Court finds that it contains portions that arguably could have corroborated testimony offered by Westinghouse regarding the public accessibility of certain functionality related to the claim limitations at issue. Still, however, the video could not have been offered as a present sense impression, as it is a scripted and edited video that is the present sense of only (if anyone) the videographer.

In its reply brief, Westinghouse belatedly argues that the video should have been admitted under the residual exception to the hearsay rule (*see* D.I. 523 at 7), which requires that (1) the statement has equivalent circumstantial guarantees of trustworthiness; (2) it is offered as evidence of a material fact; (3) it is more probative on the point for which it is offered than any

other evidence that the proponent can obtain through reasonable efforts; and (4) admitting it will best serve the purposes of the rules and the interests of justice. *See* Fed. R. Evid. 807(a).

Applying these factors: (1) while the video is copyrighted in 2000 and its content shows a public demonstration, its trustworthiness is limited, as it was scripted and edited; (2) while the video was being offered to show that CBTM's general functionality was known, it was not being offered to show that the relevant specific functionality was known; (3) the video is more probative than the testimonial and documentary evidence presented at trial on CBTM's general functionality, particularly as Dr. Kaufman's credibility was questioned and the documents on which she relied were labeled as proprietary and confidential; and (4) as a result of the foregoing factors, it is possible that – had the Court been shown the video and had Westinghouse relied on the residual exception, neither of which occurred at trial – the Court may have found that it would serve the interests of justice to admit the video. However, even if there was any error in not admitting the video, it was harmless error, as it could not (in light of all the other evidence, testimonial and documentary, about CBTM) have affected Westinghouse's substantial rights. *See* Fed. R. Civ. P. 61 (“Unless justice requires otherwise, no error in admitting or excluding evidence . . . is ground for granting a new trial At every stage of the proceeding, the court must disregard all errors and defects that do not affect any party's substantial rights.”).

3. BOS Patents Liability Verdict

Westinghouse's argument that the jury could not possibly have found both infringement and validity of the BOS patents is without merit. Westinghouse's invalidity argument was based on its own conception of the IC3 system, a view the jury was not required to accept. The jury was presented evidence from which it could have reasonably rejected Westinghouse's purported proof of an earlier conception date (for reasons such as a failure to disclose all claim limitations). (*See* D.I. 512 at 13) (citing Trial Tr. at 1323, 1430, 1579-83) It was also reasonable for the jury

to conclude, based on the evidence, that the inventor of the BOS patents, Mr. Weber, conceived of the invention prior to Westinghouse. (*See id.* at 13-14) (citing Trial Tr. at 1575-77) Mr. Weber testified to the exact day of conception, testimony which was corroborated by a slide deck that had been presented to the core team at Siemens. Westinghouse's assertion that the testimony improperly discusses "vital" and "safety critical" is incorrect; Mr. Weber actually stated that he does not ascribe meaning to those words separate from the patent. (*See* Trial Tr. at 1577)

4. A New Trial on the '110 Patent Is Not Warranted

After the trial, the PTAB issued a Final Written Decision ("FWD") finding the '110 patent invalid. The Court adheres to its previously-stated view that "the [PTAB's] decisions, even if 'final,' have no impact on this case" until "the Director of the U.S. Patent and Trademark Office issues a certification of cancellation" of the patent. (D.I. 459 at 1) This cannot occur until "the time for appeal has expired or any appeal has terminated." 35 U.S.C. § 318(b); *see also Regents of the Univ. of Minn. v. LSI Corp.*, 926 F.3d 1327, 1337 (Fed. Cir. 2019). The Court is not persuaded it should grant a new trial on the '110 patent.

C. Westinghouse's Motion for a New Damages Trial

Westinghouse has also failed to show that the jury's damages verdict was against the clear weight of the evidence or that a new trial must be granted to prevent a miscarriage of justice.

As the Court has found that the jury's liability findings are supported by the evidence and the PTAB's FWD invalidating the '110 patent does not impact the case, the Court need not decide whether Mr. Carter's (Siemens' damages expert) bundling of multiple OBU and BOS patents into one damages figure necessitates a new trial.

Westinghouse's remaining arguments regarding Mr. Carter's royalty rate calculation raise factual disputes that the jury was free to resolve in Siemens' favor. First, whether Mr. Carter double-counted prospective future business was a factual dispute as to which evidence was presented on both sides. (See D.I. 485 at 19; D.I. 512 at 15-16) Second, contrary to Westinghouse's assertion (see D.I. 485 at 19), the jury instructions actually provided that the jury *may* use evidence of Westinghouse's actual profits to determine anticipated profits at the time of the hypothetical negotiation. (See Trial Tr. at 1660) Third, as already decided (see D.I. 423 at 3), Westinghouse was not unfairly prejudiced by the admission of Westinghouse's total revenues from sales of positive train control products, which were relevant to damages. Finally, Siemens' counsel's comments regarding the limit on the damages figures and on Westinghouse's decision not to call its damages expert at trial did not unfairly prejudice Westinghouse, as Westinghouse did cross-examine Mr. Carter on an alternative figure and the jury was appropriately instructed not to award damages based on guesswork. (See D.I. 485 at 20; D.I. 512 at 17; Trial Tr. at 1651)

D. Siemens' Motion for Enhanced Damages

The jury found that Westinghouse's infringement of the EOT patents was willful. Siemens asks the Court to double the \$1,062,841 damages the jury awarded for infringement of these patents. The Court concludes that no enhancement of damages is warranted here.

In determining whether damages should be enhanced, the Court considers the "*Read* factors."⁸ As the Federal Circuit has noted, "*Read* itself implicitly endorses th[e] practice [of

⁸ The *Read* factors include: (1) whether the infringer deliberately copied, (2) whether the infringer had a good-faith belief in noninfringement or invalidity, (3) the infringer's behavior as a party to the litigation, (4) the infringer's size and financial condition, (5) closeness of the case, (6) duration of the infringer's misconduct, (7) remedial action by the infringer, (8) the infringer's motivation for harm, and (9) whether the infringer attempted to conceal its misconduct. See *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 827 (Fed. Cir. 1992).

considering evidence that was not available to the jury] by including several factors that a jury is not in the best position to assess.” *Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 265 F.3d 1294, 1311 (Fed. Cir. 2001). Such factors include litigation conduct and tactics of counsel, closeness of the case, the defendant’s size and financial condition, and other factors related to “a fair allocation of the burdens of litigation as between winner and loser.” *Id.* (quoting *Amsted Indus. Inc. v. Buckeye Steel Castings Co.*, 24 F.3d 178, 184 (Fed. Cir. 1994)); *see also Idenix Pharm. LLC v. Gilead Scis., Inc.*, 271 F. Supp. 3d 694, 697 (D. Del. 2017).

The role of the jury in determining willfulness and the role of the judge in determining enhancement of damages are distinct. “Certainly a judge cannot substitute his or her factual determination for a jury’s willfulness finding.” *Advanced Cardiovascular*, 265 F.3d at 1310; *see also WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1341 (Fed. Cir. 2016) (“[T]he factual components of the willfulness question should be resolved by the jury.”). However, in assessing whether enhancement is appropriate, the Court may consider whether there was evidence of **egregious** conduct (e.g., egregious copying versus less offensive copying) and may also consider how one-sided or relatively balanced the evidence was on a disputed issue. *See, e.g., Amsted*, 24 F.3d at 184 (contemplating court will consider “closeness of the case” as part of its discretionary enhancement decision); *see also Stryker Corp. v. Zimmer, Inc.*, 745 Fed. App’x 167 (Fed. Cir. 2018), *aff’ing*, 2017 WL 4286412, at *3 (W.D. Mich. July 12, 2017) (Rule 36 affirmance of treble damages award due to “the one-sidedness of the case and the flagrancy and scope of Zimmer’s infringement”); *Amsted*, 24 F.3d 178, 184 (“The decision whether to increase damages provides an opportunity for the trial court to balance equitable concerns as it determines whether and how to recompense the successful litigant.”) (internal quotation marks omitted).

Here, almost all of the *Read* factors that arguably support enhancement of damages were highly disputed at trial and substantial evidence for each of these factors was presented on both sides.⁹ With respect to copying, Siemens presented evidence that Westinghouse's copying began in 2006 when Westinghouse learned of Quantum's EOT tracking service and forwarded a PowerPoint presentation about it to Westinghouse's legal counsel. (D.I. 481 at 5; D.I. 522 at 2) Yet Westinghouse presented evidence that it launched its product in late 2007, before the EOT patents issued (though after they were filed). (See D.I. 513 at 3; D.I. 522 at 2) While Siemens presented evidence that Westinghouse conducted a product teardown of Siemens' product in November 2007 and thereafter implemented the same design, Westinghouse presented evidence that it was critical of Siemens' design. (See D.I. 481 at 5; D.I. 513 at 4) Overall, while the jury was free to find that Westinghouse copied, the evidence of copying is not overwhelming, nor is there any evidence of particularly egregious copying. Exercising its discretion with respect to enhancement of damages, the Court concludes that copying provides only weak support for enhanced damages.

Turning to Westinghouse's good faith belief, evidence was presented at trial that Westinghouse obtained opinions of counsel that the '032 patent was invalid (based on a reference that had already been considered by the patent examiner, who allowed the '032 patent to issue nonetheless), and that the application leading to the '850 patent would result in an invalid patent. (D.I. 481 at 9; D.I. 522 at 3) Siemens argued that "Wabtec's entire opinion

⁹ Consistent with the *Read* factors, the jury was instructed to consider the following factors in assessing willfulness: (1) whether Westinghouse acted consistently with the standards of behavior for its industry, (2) whether Westinghouse intentionally copied a product of Siemens that is covered by a patent, (3) whether Westinghouse reasonably believed it did not infringe or that the patent was invalid, (4) whether Westinghouse made a good faith effort to avoid infringing the patent, and (5) whether Westinghouse tried to cover up its infringement. (See Trial Tr. at 1666)

program . . . was designed to protect against a future willful infringement claim.” (D.I. 481 at 9-10) Overall, while the jury was free to find that Westinghouse lacked a good faith belief in the invalidity of the EOT patents, the evidence on this point is not overwhelming. Exercising discretion with respect to enhancement, the Court concludes that this *Read* factor provides only weak support for enhanced damages.

In terms of the duration of the infringement, the evidence is that it lasted for a decade, which is a substantial period of time. However, the evidence also established that Westinghouse launched its products before the EOT patents issued. (See D.I. 513 at 10) While Quantum knew about Westinghouse’s products and told Westinghouse about the EOT patents, Quantum never commenced licensing discussions nor notified Westinghouse of its allegations of infringement. Overall, then, the duration of infringement factor does not strongly favor enhancement of damages.

A final *Read* factor on which the jury heard evidence was concealment. Siemens pointed to Westinghouse’s “spy cam photos” as evidence of sneaky behavior. However, the evidence also showed that Siemens was aware of Westinghouse’s product and Westinghouse was aware of Siemens’ patents – and both parties knew as much. The evidence of concealment, then, was weak at best. This factor does not favor enhancement.

Many of the *Read* factors on which evidence was not presented to the jury, and which are solely evaluated by the Court, strongly disfavor an award of enhanced damages. With respect to litigation conduct, both parties have heavily litigated this case over the last three years, properly preserved arguments and issues for appeal, and were never sanctioned for misconduct. Next, almost every aspect of this case – including the issues presented to the jury at trial, including infringement of the EOT patents – was close. Just because the jury found for Siemens on

infringement, invalidity, damages, and willfulness with respect to the EOT patents does not mean that the evidence could not have supported a verdict for Westinghouse on each of these questions. Also, while the parties have engaged in fierce competition for more than a decade, no evidence has been presented – to the jury or the Court – that Westinghouse had any motivation to harm.

As for remedial actions, Westinghouse ceased selling its tracking EOTs following the jury’s verdict. Its tracking service is still available for products sold prior to the verdict. Although the lost profits damages award covers products already sold and related services as to those products (*see* Tr. at 125), this *Read* factor does slightly favor enhancement.

A final *Read* factor, the size and financial condition of Westinghouse, does not materially impact the analysis. Westinghouse is a large, financially successful company. But the fact that Westinghouse could afford to pay an additional million dollars or so in damages does not provide a reason, under the circumstances here, to order it to do so.

Having assessed each of the *Read* factors and giving each appropriate weight under the particular circumstances presented here, the Court concludes that enhanced damages are not warranted. Only four factors favor enhancement – copying, good faith belief, duration of infringement, and remedial actions – and none overwhelmingly. Other factors strongly disfavor enhancement: litigation conduct, closeness of the case, and motivation for harm. Although the jury found willful infringement, that finding does not mandate that damages be enhanced; rather, the Court must exercise its discretion. *See Read*, 970 F.2d at 826; *see also WesternGeco L.L.C. v. Ion Geophysical Corp.*, 837 F.3d 1358, 1362 (Fed. Cir. 2016); *Idenix*, 271 F. Supp. 3d at 698 & 699 n.7. Having done so, the Court will deny Siemens’ motion to double damages.

E. Siemens' Motion for Attorneys' Fees

There is no dispute that Siemens is the prevailing party. Therefore, the Court need only decide whether this case is exceptional. It is not. For reasons including those discussed above in connection with the *Read* factors and Siemens' request to enhance damages, this case does not stand out as one that was unreasonably litigated or in terms of the strength of either side's litigating position. Accordingly, Siemens has not shown that this case is exceptional under Section 285.

F. Siemens' Motion for Supplemental Damages

Westinghouse does not oppose Siemens' motion for supplemental damages. Accordingly, this motion will be granted and the parties will be ordered to meet and confer on how the Court is to determine appropriate supplemental damages.

G. Siemens' Motion for Prejudgment Interest

Siemens seeks an award of prejudgment interest pursuant to 35 U.S.C. § 284. “[P]rejudgment interest should normally be awarded in patent cases to provide patent owners with complete compensation.” *Idenix*, 271 F. Supp. 3d at 705 (internal quotation marks omitted). The Court will award Siemens prejudgment interest to be calculated at the prime rate, compounded quarterly, from the date of the first infringement through the date of judgment, pursuant to the common practice of this Court. *See, e.g., Amgen Inc. v. Hospira, Inc.*, 336 F. Supp. 3d 333, 363-64 (D. Del. 2018); *Green Mountain Glass LLC v. Saint-Gobain Containers, Inc.*, 300 F. Supp. 3d 610, 627-28 (D. Del. 2018); *Idenix*, 271 F. Supp. 3d at 705; *Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.*, 85 F. Supp. 3d 768, 783 (D. Del. 2015).

Westinghouse recognizes this is the Court's common practice but asks the Court to depart from it – by either declining any award of prejudgment interest, or at least by using the lower Treasury bill rate – because Siemens purportedly unreasonably delayed in filing suit, prejudicing

Westinghouse. (*See* D.I. 513 at 15-17) The Court is not persuaded that any delay has actually or materially prejudiced Westinghouse; to the contrary, Westinghouse's damages may have been higher if Siemens had sued earlier (because the years for which Siemens could then have recovered damages were more successful years for Westinghouse's accused products). (*See* Tr. at 131) As Westinghouse does not contest Siemens' calculation, the Court will award Siemens \$724,626 in prejudgment interest.

H. Siemens' Motion for Post-Judgment Interest

Westinghouse does not oppose Siemens' motion for post-judgment interest. Accordingly, this motion will be granted and the parties will be ordered to meet and confer on appropriate post-judgment interest.

I. Ensnarement

"A doctrine of equivalents theory cannot be asserted if it will encompass or 'ensnare' the prior art." *G. David Jang, M.D. v. Boston Scientific Corp.*, 872 F.3d 1275, 1285 (Fed. Cir. 2017) (quoting *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1322 (Fed. Cir. 2009)). "This limitation is imposed even if a jury has found equivalence as to each claim element." *Id.* (quoting *DePuy*, 567 F.3d at 1323). Here, then, notwithstanding the jury's verdict that Westinghouse infringed the '461 and '860 patents (i.e., two of the OBU patents) under DOE, the Court must evaluate Westinghouse's ensnarement defense.

"A helpful first step in an ensnarement analysis is to construct a hypothetical claim that literally covers the accused device." *DePuy*, 567 F.3d at 1324. "Next, the district court must assess the prior art introduced by the accused infringer and determine whether the patentee has carried its burden of persuading the court that the hypothetical claim is patentable over the prior art." *Id.* at 1325. "The burden of producing evidence of prior art to challenge a hypothetical

claim rests with an accused infringer, but the burden of proving patentability of the hypothetical claim rests with the patentee.” *Jang*, 872 F.3d at 1285 (internal quotation marks omitted).¹⁰

1. Siemens’ Proposed Hypothetical Claim Is Proper

The parties dispute how to craft the hypothetical claim language with respect to the “to a configurable device near the train” and the “identifier of the device” portions of the claims. In crafting a hypothetical claim, only “slight broadening” is permitted or “a minor extension of a claim to cover subject matter that is substantially equivalent to that literally claimed.” *Jang*, 872 F.3d at 1286; *see also Streamfeeder, LLC v. Sure-Feed Sys., Inc.*, 175 F.3d 974, 983 (Fed. Cir. 1999). A hypothetical claim “may not add any narrowing limitations.” *Jang*, 872 F.3d at 1286.

With respect to the “to a configurable device near the train” portion of the claim, Siemens proposes adding “or to a wayside interface unit proximate to and in communication with the configurable device near the train,” whereas Westinghouse proposes “or to an intermediary device in communication with the configurable device.” (D.I. 476) As articulated in greater detail above in connection with Westinghouse’s JMOL motion, Siemens’ DOE theory of infringement at trial was that sending an interrogation message to a WIU is substantially equivalent to sending the message to the configurable device, because the WIU is an interface point for the configurable device similar to a transceiver connected to a configurable device. (Trial Tr. at 627-28, 630-31, 691-92) Westinghouse acknowledges that Dr. Ghaly’s theory was that “a WIU is merely a transceiver connected to a configurable device.” (D.I. 514 at 6) The hypothetical claim, therefore, must involve only a slight broadening of the actual claim to encompass only those devices that may be equivalent to a configurable device’s transceiver. The only type of such a device for which there was evidence at trial was a WIU; no other device was

¹⁰ In this case, the Court has already determined that a hypothetical claim analysis would be helpful in resolving Westinghouse’s ensnarement defense. (*See* D.I. 462 at 1)

analogized to the configurable device's transceiver. (*See* Tr. at 8; *see also id.* at 33-37)

Accordingly, the Court finds that Siemens' proposed language for this portion of the claim is appropriate while Westinghouse's proposed language is too broad.

With respect to the "identifier of the device" portion of the claim, Siemens proposes modifying it to "an identifier associated with the device," whereas Westinghouse proposes modifying it to "an identifier associated with the device, such as an authentication code to ensure the vital data integrity of the response." (D.I. 476) The claim requires that the response from the configurable device includes an identifier of the device and that there is confirmation that the identifier received corresponds to the device. (*See* '461 patent, cl. 5)

The evidence at trial showed that in I-ETMS, a WIU is associated with a unique Operational Private Key ("OPK"), which is also stored in the train's onboard database as being associated with a particular WIU. (*See* Trial Tr. at 633, 642) When a response to an interrogation message is sent from the WIU to the train, the OPK generates an HMAC security code that is transmitted with the message from the WIU to the train. (*See id.* at 633, 637-38, 641) The onboard database will also generate an HMAC based on the OPK for the particular WIU of interest and compare its HMAC to the HMAC received from the WIU to verify that the message is from the correct source. (*See id.* at 705)

Dr. Ghaly consistently and credibly (in the Court's view) testified that the OPK is the identifier, as it generates and, therefore, is part of the HMAC that is transmitted with the message from the WIU to the train. The Court finds that Siemens' hypothetical claim is the correct one, while Westinghouse's is not.

Incorporating Siemens' proposed hypothetical claim language into the actual claim, the hypothetical claim the Court will adopt for purposes of the ensnarement defense is shown below:

A system for controlling a train, the system comprising:

a control unit;

a transceiver, the transceiver being located on the train and being in communication with the control unit;

wherein the control units is configured to perform the steps of

transmitting an interrogation message to a configurable device near the train or to a wayside interface unit proximate to and in communication with the configurable device near the train;

listening for a response from the configurable device or the wayside interface unit, the response including a configuration of the configurable device and an identifier of associated with the device;

allowing the train to continue if a response with a correct configuration is received within a period of time; and

stopping the train otherwise;

wherein the control unit is further configured to perform the step of confirming that the identifier received in the response ~~corresponds to~~ is associated with the device to which the interrogation message was directed.

2. The Hypothetical Claim Does Not Ensnare the Prior Art

Having constructed the hypothetical claim, the Court must determine whether Siemens has proven, by a preponderance of the evidence, that the hypothetical claim is patentable in view of the prior art references and combinations relied on by Westinghouse.¹¹

¹¹ The Court assumes, without deciding, that it is appropriate to consider all of the prior art Westinghouse wishes it to consider in connection with the ensnarement defense. Siemens presents a strong argument that certain of Westinghouse's references were not timely disclosed. (See D.I. 504 at 4-6) However, because the Court is concluding that none of Westinghouse's prior art is ensnared by the properly-construed hypothetical claim, it is unnecessary to resolve the dispute over whether the Court should consider less than all of Westinghouse's prior art.

a. *Birkin, Petit, and Blesener In View of ATCS and RSAC*

Westinghouse identifies the “interrogation message” and “identifier” elements as being obvious based on *Birkin, Petit, and Blesener* in view of ATCS and RSAC.

The parties’ central dispute is whether *Birkin*, alone or in combination with the other four listed references, teaches the “interrogation message” limitation. While *Birkin* was not submitted to the PTAB as part of the *inter partes* review (“IPR”) of the ’461 patent, it was submitted as part of the IPR of the ’953 patent. The ’953 patent has substantially similar claim language as the ’461 patent but recites “a track circuit transceiver associated with a track circuit” rather than “a configurable device near the train,” as recited in the ’461 patent. In the ’953 patent IPR, the PTAB construed “interrogation message” as “a targeted request for status information,” which is effectively identical to the Court’s construction in this case, and determined that, in the context of the ’953 patent, a “transceiver” includes a transponder. (*See* D.I. 505 Ex. E at 7-11) While the PTAB’s decision in an IPR can be helpful, the parties here agree that the PTAB’s decision is not binding on the Court. (*See* Tr. at 21-22, 44)

The Court finds that *Birkin* does nothing more than power any transponder that the train passes over through periodic bursts of energy. (D.I. 521 Ex. I at 112-13; *see also* D.I. 506 (Ghaly Opening Decl.) at 21, 26, 32-36; D.I. 520 (Ghaly Reply Decl.) at 3-5; Tr. at 22-23) Although a message is returned with status information, the interrogation in *Birkin* is not targeted. (*See* D.I. 508 Ex. 20 at 3:13-16; *see also* Tr. at 22-23)

Siemens has met its burden of proving that the combination of *Birkin, Petit, and Blesener* in view of ATCS and RSAC does not render obvious the “interrogation message” that is required by the hypothetical claim. An “interrogation message” is “a targeted request that requires a response containing status information.” (D.I. 165 at 11) The PTAB has already determined (and the Court agrees) that *Petit, Blesener, and RSAC*, alone or in combination, do not teach the

claimed “interrogation message.” (D.I. 505 Ex. C at 13-18) Dr. Kaufman, Westinghouse’s expert, has also admitted that the same three references do not teach sending a targeted message for status information. (D.I. 521 Ex. I at 50, 54) Further, as explained by Dr. Ghaly, a person of ordinary skill in the art (“POSA”) would not be motivated to combine aspects from these three references in a way that would practice the claim. (*See* D.I. 520 (Ghaly Reply Decl.) at 5-9) Dr. Ghaly further opined that ATCS also does not teach sending targeted requests for status information. (*See id.* at 10)

The Court is persuaded that a POSA would not be motivated to combine the five references in a way that practices the “interrogation message” limitation of the hypothetical claim.

As this combination does not teach the “interrogation message” element, it does not render the hypothetical claim invalid. Therefore, the Court need not consider whether this combination teaches the “identifier” element.

b. CBTM In View of ATCS and RSAC

Westinghouse identifies the “interrogation message” and “identifier” elements as being obvious based on CBTM in view of ATCS and RSAC.

The Court finds that Siemens has met its burden of proving that the combination of CBTM in view of ATCS and RSAC does not render obvious an “interrogation message.” The hypothetical claim requires that the interrogation message be sent to a WIU that is proximate to and in communication with the configurable device, rather than to any intermediary device. As already discussed, Siemens has shown that in CBTM, there is no interrogation message that originates at the locomotive and ends at the wayside segments; rather, the message is directed to the back office, which sends a new message to the wayside. Indeed, the advantages and disadvantages of having the train communicate with the back office or directly with the wayside

devices were considered during CBTM's development, and ultimately the designers rejected a direct path of communication. (*See* D.I. 506 (Ghaly Opening Decl.) at 47-48) That WIUs existed in the prior art for other purposes does not render obvious the use of targeted messages to the WIUs. (*See* Tr. at 14-15)

Thus, Siemens has met its burden of showing that a POSA would not be motivated to combine CBTM, ATCS, and RSAC. As this combination does not teach the "interrogation message" element, the Court need not consider whether it teaches the "identifier" element.

In sum, Siemens has met its burden to overcome Westinghouse's ensnarement defense.

IV. CONCLUSION

For the reasons stated above, the Court will deny as moot Siemens' initial JMOL, grant in part and deny in part Siemens' post-trial motion, and deny Westinghouse's post-trial motion. The Court also rejects Westinghouse's ensnarement defense. An appropriate Order follows.