

No. 20-\_\_\_\_

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IN THE  
**Supreme Court of the United States**

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TCL COMMUNICATION TECHNOLOGY HOLDINGS, LIMITED,  
TCT MOBILE LIMITED,  
TCT MOBILE (US) INC.,

*Petitioners,*

v.

GODO KAISHA IP BRIDGE 1,

*Respondent.*

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**On Petition for Writ of Certiorari to the  
United States Court of Appeals  
for the Federal Circuit**

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**PETITION FOR A WRIT OF CERTIORARI**

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May 3, 2021

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**QUESTIONS PRESENTED**

This Court's precedent in *Markman* requires that the construction of a patent "is exclusively within the province of the court." *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996). Consistent with this directive, courts determine claim construction—not juries. The jury applies the claims as construed and determines whether the accused product infringes.

The questions presented in this case, properly stated, are:

1. Whether under 35 U.S.C. § 271 and this Court's precedent, a patentee may prove literal infringement by relying *solely* on the essentiality of its patent to an industry standard, rather than comparing the accused product directly to the asserted claim or linking the industry standard to the claim during claim construction.
2. Whether a court must first determine claim construction and conclude as a matter of law that the scope of the asserted claims covers an industry standard and that a patentee may rely on an industry standard in proving literal infringement.

**PARTIES TO THE PROCEEDINGS BELOW**

Petitioners TCL Communication Technology Holdings, Limited, TCT Mobile Limited, and TCT Mobile (US) Inc. were the defendants in the district court and the appellees in the court of appeals.

Respondent Godo Kaisha IP Bridge 1 was the plaintiff in the district court and the appellant in the court of appeals.

**CORPORATE DISCLOSURE STATEMENT**

Petitioner TCT Mobile International Limited is a wholly owned subsidiary of TCT Mobile Worldwide Limited.

TCT Mobile Worldwide Limited is a wholly owned subsidiary of TCL Communication Technology Holdings Limited. Vivid Victory Developments Limited owns 13% of TCL Communication Technology Holdings Limited, and T.C.L. Industries Holdings (H.K.) Limited owns 87% of TCL Communication Technology Holdings Limited. T.C.L. Industries Holdings (H.K.) Limited is a wholly owned subsidiary of TCL Industries Holdings Company, Limited. No other publicly held company owns 10% or more of stock in TCT Mobile International Limited or TCL Communication Technology Holdings Limited.

**STATEMENT OF RELATED PROCEEDINGS**

The following proceedings are directly related to this case within the meaning of Rule 14.1(b)(iii):

- *TCL Communication Technology Holdings, Limited, TCT Mobile Limited, and TCT Mobile (US) Inc. v. Godo Kaisha IP Bridge 1*, No. 19-2215 (Fed. Cir.), judgment entered on December 4, 2020.
- *Godo Kaisha IP Bridge 1 v. TCL Communication Technology Holdings, Limited, TCT Mobile Limited, and TCT Mobile (US) Inc.*, No. 1:15-cv-00634-JFB-SRF (D. Del.), judgment entered on July 2, 2019.

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**PETITION FOR A WRIT OF CERTIORARI**

TCL Communication Technology Holdings, Limited, TCT Mobile Limited, and TCT Mobile (US) Inc (together “TCL”) respectfully petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

**OPINIONS BELOW**

The Federal Circuit’s opinion (Appx. 60a) is reported at 967 F.3d 1380. The district court’s opinion denying TCL’s post-trial motions (Appx. 30a, 49a) are unreported.

## STATEMENT OF JURISDICTION

The Federal Circuit issued an opinion on August 4, 2020, Appx. 60a, and entered judgment on December 4, 2020 and denied rehearing, Appx. 70a. By general order, the Court extended the time to file this petition to May 3, 2021. This Court has jurisdiction under 28 U.S.C. § 1254(1).

## INTRODUCTION

The Federal Circuit’s decision in this case directly violates Supreme Court precedent. This Court could not have been clearer in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996): “[T]he construction of a patent, including terms of art within its claim, is *exclusively* within the province of the court.” *Id.* at 372 (emphasis added). In *Markman*, this Court also expressly rejected the proposition that claim construction is “subject to a Seventh Amendment guarantee that a jury will determine the meaning of any disputed term of art about which expert testimony is offered.” *Id.* Thus, this Court’s precedent requires the judge, not the jury, to construe the meaning of a patent claim, which is the precedent violated here.

The Federal Circuit’s error was born out of the fact that the underlying case involved industry standards for mobile devices. Relevant here, industry standards describe protocols (often involving technology thresholds) that mobile devices must comply with to operate on a particular mobile phone network (e.g., 4G, 5G). Product features required by industry standards are often covered by patents. Such patents, often self-declared essential by the patent owner, are called “standard-essential patents.”

In patent-infringement cases involving standard-essential patents, patent owners can prove infringement by first mapping an industry standard to the

claims of a patent (in a way that shows the patented features overlap with features required by the standard), and, second, by showing that the product practices the standard. This is not how ordinary patent cases work. Usually, the accused products are mapped directly to the patent claims. Standard-essential patent holders can prove their case the conventional way if they wish (i.e., by comparing the accused product directly to the patent). But they also have the option of proving infringement in the way described above—i.e., by using the industry standard to tie the products accused of infringing to the claims.

This approach of using an industry standard to tie patent claims to an accused product only works if the plaintiff proves that *every feature required by the claims is also covered by the industry standard*. If a patent claim has *additional features* that are not required by the industry standard, the patent holder must do more than show mere compliance with an industry standard to prove infringement. It must also show that the accused product has the additional features beyond what is required by the standard. If such proof is not required, a patent holder would be able to use an industry standard to end-run the patent claim by getting an infringement finding without proving that the accused product practices all features recited in the patent claim.

The Federal Circuit established a legal framework that governs standard-essential patent cases. In particular, “[i]f a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement.” *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321, 1327 (Fed. Cir. 2010). If a patent holder does not sufficiently tie its patent claims to the

relevant industry standard through the claim construction process (i.e., the *Markman* analysis), the Federal Circuit’s legal framework for standard-essential patents unravels, and industry standards can be used to end-run patent claims (as described). Accordingly, in industry-standard patent cases, the claim construction process is essential—it is the only way to ensure that the patent holder who elects to rely on an industry standard to prove infringement does so in a way that connects the claims to the standard and proves that the accused products practice *every limitation* in the claim. *Jeneric/Pentron, Inc. v. Dillon Co., Inc.*, 205 F.3d 1377, 1382 (Fed. Cir. 2000) (explaining that a patent holder can only prove infringement when “every limitation recited in the claim appears in the accused product, i.e., the properly construed claim reads on the accused product exactly”).

Here, Plaintiff-Appellee Godo Kaisha IP Bridge 1 (“IP Bridge”) sued TCL on a theory of literal infringement of U.S. Patent Nos. 8,385,239 and 8,351,538. Both patents are directed to aspects of cellular communication technology related to the Long-Term Evolution (“LTE”) standard. The LTE standard contains specifications for wireless broadband communication for mobile devices. Importantly, IP Bridge *never took the step* of tying the patent claims to the industry standard during the claim construction process. Instead, IP Bridge merely relied on a declaration of standard essentiality at trial from a standard-settings organization known as 3GPP. Thus, the jury was left to map the industry standard to the claims on its own. In other words, the jury construed the patent claims—a clear violation of *Markman*. Under *Markman*, only the district court can construe the patent claims. *Markman*, 517 U.S. at 372.

On appeal, the Federal Circuit failed to correct this error. Thus, the Federal Circuit condoned a decision permitting the jury to rely entirely on the existence of the LTE standard to prove infringement, CAFC Appx. 60, and where the district court never construed the patent claims in a way that linked the industry standard to the patent claims. This error is especially egregious here, because the declaration of standard-essentiality that the jury used to conclude infringement was made by a non-litigant, 3GPP, on agreement with IP Bridge, and without determining whether each limitation of each claim is essential to the standard. Applying this Court's decision in *Markman* to the facts of this case would correct this injustice and align the Federal Circuit's precedent with this Court's precedent. Allowing patent holders to prove infringement merely by proving compliance with an industry standard—and without any construction by the district court tying the patent claims to the standard—contravenes *Markman* by creating a “zone of uncertainty” around the scope of the patent claims, which is expressly what *Markman* tried to prevent with its bright-line rules on claim construction. *Markman*, 517 U.S. at 390-91.

Moreover, there is a significant risk that the Federal Circuit's claim construction error will propagate if this Court does not intervene with a correct application of *Markman*. Indeed, standard-essential patent cases are frequently filed in the United States, and more than 40,000 U.S. patents have been declared standard-essential. If the Federal Circuit decision stands, standard-essential patent owners will routinely bypass claim construction and end-run patent claims by proving infringement based solely on self-interested, declarations of “essentiality.” For these reasons, TCL's petition for certiorari should be granted.

## STATEMENT OF THE CASE

### A. Patents-In-Suit

IP Bridge accused TCL of infringing claims 9 and 12 of U.S. Patent No. 8,385,239 (“’239 patent) and claims 15 and 16 of U.S. Patent No. 8,351,538 (“’538 patent). TCL is a mobile phone manufacturer, and IP Bridge is a patent holding company and does not manufacture cell phones.

The ’239 patent is directed to transmission of channel quality indicator (CQI) reports from a user’s phone in a cellular network. The CQI reports provide the network with information on the quality of the communication channel between the base station and the phone. The claims of the ’239 patent focus on software that determines whether to send an aperiodic CQI report alone via “CQI-only” mode or along with user data via “multiplexed” mode.

The ’538 patent is directed to reducing interference between mobile devices when they simultaneously transmit CQI signals with acknowledged (ACK) signals or not acknowledged (NACK) signals. The ACK/NACK signals indicate a mobile device has or has not received a block of data from a base station. CQI signals and ACK/NACK signals are transmitted in sequential positions in the transmission called “slots.” Data included in such transmissions may be “spread” to transmit information simultaneously using the same frequency to avoid interference. The ’538 patent claims are directed to spreading data using a selected orthogonal sequence.

### B. LTE Standard

IP Bridge relied on a theory of infringement that TCL’s products necessarily infringe the patents-in-

suit because they operate on LTE networks. LTE is an industry standard for wireless broadband communication for mobile devices. It was developed by the standard-setting organization 3GPP. LTE is generally known as “4G” and it provides a faster data connection for mobile devices than “3G.” LTE is based on network technologies that increase capacity and speed of mobile device networks. This increase is attributed to the introduction of orthogonal frequency division multiplex (OFDM) systems, multiple input multiple output (MIMO) systems, more direct data routing (i.e. outsourcing some processes to local systems and reducing system hierarchy), reliance on packet switching instead of circuit switching, and other improved systems and methods. The ’538 and ’239 patents relate to the LTE standard in that they govern a specific set of communications of mobile devices with base stations to transmit channel quality indicators.

### **C. District Court Proceedings**

IP Bridge accused TCL of literally infringing U.S. Patent Nos. 8,385,239 and 8,351,538. Even though both of these patents are directed to aspects of cellular communication technology related to the LTE standard, IP Bridge never sought to tie this standard to the patent claims at the claim-construction stage. Instead, IP Bridge proceeded to trial, where it argued that the accused products complied with the LTE standard and thus infringed the asserted patents. CAFC App. 12985 at 500:10-17, CAFC App. 12991 at 522:13-15. In particular, IP Bridge argued to the jury that, “because these two patents are needed to practice the LTE standard, every time TCL makes or sells an LTE phone, it’s infringing these two patents.” CAFC App. 12967 at 425:13-16.

IP Bridge’s infringement expert (Dr. Min) expressly stated that he compared the claims of the ’239 patent and the ’538 patent “to the LTE standard.” CAFC Appx. 13142 at 885:24-886:8; CAFC Appx. 13173-74 at 943:23-944:4. It summed up this theory as “middle school algebra”—“if A equals B and B equals C, then A equals C.” *Id.* at 4264-8. The jury returned a verdict of literal infringement. CAFC Appx. 12560-61. IP Bridge relied on this theory throughout trial. It *never* linked the claims directly to the accused product through claim construction or otherwise.

Notably, both before trial began and then again during trial, TCL submitted argument and briefing on the Federal Circuit’s leading case on standard-essential patents—i.e., *Fujitsu*—specifically in the context of how that case related to jury instructions. Appx. 73a-77a. TCL argued that “you need to compare the claim language to what you’re accusing, because that’s what the law is.” Appx. 74a (citing Trial Tr. 331:18-24). IP Bridge responded that TCL’s application of *Fujitsu* was incorrect, and that IP Bridge should be allowed to argue a theory of standards based infringement. Appx. 73a-74a. The district court allowed both arguments to be heard by the jury. Appx. 74a.

At the end of trial, TCL moved for judgment as a matter of law, relying on its *Fujitsu* argument yet again to contend that IP Bridge had failed to provide a sufficient evidentiary basis from which a reasonable jury could find literal infringement. CAFC Appx. 13277 at 1189:8-13. TCL’s motion was unsuccessful, and the jury found against TCL. After the verdict, TCL moved for judgment of no literal infringement as a matter of law under Rule 50(b). In its order denying the motion, the district court relied on testimony from Dr. Min asserting that: “(1) the asserted claims are

essential to mandatory (not optional) functionality of the LTE standard (i.e., functionality that must be performed by any device that complies with the LTE standard); and (2) the accused products comply with the LTE standard.” Appx. 55a. The district court found that “Dr. Min identified mandatory requirements of the LTE standard and explained how the mandatory portions relate to and practice the elements of the asserted claims.” *Id.* The district court *never* construed the patent claims itself and found that they practiced the LTE standard.

#### **D. The Federal Circuit Appeal**

On appeal, TCL again raised the issue of IP Bridge’s improper, standards-based infringement theory. The appeal focused on whether Federal Circuit and Supreme Court precedent permitted IP Bridge to prove literal infringement by arguing to the jury that (1) its patents were standard-essential and (2) the accused products were standard-compatible. The Federal Circuit’s *Fujitsu* decision states:

We hold that a district court may rely on an industry standard in analyzing infringement. If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement.

*Fujitsu* at 1327 (emphasis added). *Fujitsu* further states that “[o]nly in the situation where a patent covers every possible implementation of a standard will it be enough to prove infringement by showing standard compliance.”

TCL argued that IP Bridge violated this precedent by waiting until trial to rely solely on TCL-product compatibility with the LTE standard. IP Bridge never asked the district court to consider whether the scope

of the patent claims cover an implementation of a standard. Thus, when IP Bridge provided evidence of TCL-product compatibility with a standard, IP Bridge did not meet its predicate burden of proving that TCL's products practice each and every limitation of the asserted claims—IP Bridge never linked the claims to the LTE standard. TCL also argued that IP Bridge did not attempt to show that source code of the accused products practiced the asserted claims. At bottom, TCL argued that by relying merely on product compatibility with an industry standard, and neglecting evidence showing how the product operated (such as source code), IP Bridge failed to prove that the accused products practice the elements of the patent claims.

In response, IP Bridge argued its infringement theory was consistent with *Fujitsu's* holding, and thus the district court was correct to deny TCL's motion for JMOL. CAFC Opp. Br. 2, 10. IP Bridge also argued that its expert provided sufficient testimony that the claims met the elements of the claims. CAFC Opp. Br. 30-34.

The Federal Circuit considered whether the district court's order denying JMOL could stand based on its precedent in *Fujitsu*, ultimately concluding that it could after endorsing "standard compliance as a way of proving infringement." Appx. 64a. The Federal Circuit found that the district court was not required to construe the claims to determine whether they cover an industry standard. Appx. 67a-68a. This is what violates *Markman*.

More specifically regarding the Federal Circuit's decision, the court took the position that "[t]he passing reference in *Fujitsu* to claim construction is simply a recognition of the fact that the first step in any infringement analysis is claim construction," rather

than a directive that a court should compare the scope of the claims to an industry standard. *Appx. 67a*. The Federal Circuit also stated that its reading of *Fujitsu* was supported by *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263 (Fed. Cir. 2004). According to the Federal Circuit, “under *Dynacore*, which *Fujitsu* referenced in its holding, standard-essentiality of patent claims is a fact issue.” *Appx. 68a*. At its core, the Federal Circuit’s decision permitted the jury to construe the patent claims, which violates *Markman*.

### **REASONS FOR GRANTING THE PETITION**

The Federal Circuit directly violated *Markman*, which states that “the construction of a patent, including terms of art within its claim, is *exclusively* within the province of the court.” *Markman*, 517 U.S. at 372 (emphasis added). The *Markman* Court also clarified that claim construction is not “subject to a Seventh Amendment guarantee that a jury will determine the meaning of any disputed term of art about which expert testimony is offered.” *Id.* Thus, in patent cases, the judge must construe the meaning of a patent claim—not a jury.

Here, IP Bridge presented a case that allowed the jury to construe the patent claims (i.e., the jury mapped the LTE standard to the patent claims), and the Federal Circuit erroneously permitted this. The district court *never construed the patent claims* itself to find that practicing the LTE standard means that the claims are infringed. At trial, the district court permitted IP Bridge to rely solely on a self-interested declaration of standard essentiality, without providing the necessary role of gatekeeper. Thus, the jury was left to map the industry standard to the claims. In other words, the jury construed the patent claims, which allowed IP Bridge to end-run those claims and

obtain an infringement verdict without ever showing that the accused products practiced *each and every* limitation.

The Federal Circuit failed to correct this error. It allowed an infringement verdict to stand where the district court failed to construe the claims on the issue of standard essentiality and instead left that decision to the jury. This error is especially egregious here, because the declaration of standard-essentiality that the jury used to conclude infringement was made by IP Bridge in a self-interested agreement and without determining whether each limitation of each claim is essential to the standard. Enforcing this Court's *Markman* ruling would correct this injustice, align the Federal Circuit's precedent with this Court's precedent, and eliminate the "zone of uncertainty" that exists when juries are allowed to map standards to patent claims, which is exactly what *Markman* tried to prevent with its bright-line rules on claim construction. *Markman*, 517 U.S. at 390-91.

Moreover, there is a significant risk that the Federal Circuit's claim construction error will propagate if this Court does not intervene with a correct application of *Markman*. Indeed, standard-essential patent cases are frequently filed in the United States, and more than 40,000 U.S. patents have been declared standard-essential. If the Federal Circuit decision stands, standard-essential patent owners will routinely bypass claim construction and end-run patent claims by proving infringement based solely on self-interested, declarations of "essentiality." For these reasons, TCL's petition for certiorari should be granted.

**I. A patented invention is defined by the scope of the claims, not an industry standard, and a patent owner can only obtain an infringement finding for—collect damages on—products that practice *each and every* limitation of the claims**

The Supreme Court should address the question of whether a patentee may prove infringement by relying solely on the standard essentiality of its patent. TCL respectfully submits that this approach violates Supreme Court precedent.

“[A] patentee’s rights extend only to the claimed combination of elements, and no further.” *Limelight Networks, Inc. v. Akamai Techs., Inc.*, 572 U.S. 915, 921 (2014) (emphasis added); *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 277 (1949) (“We have frequently held that it is the claim which measures the grant to the patentee.”); *McClain v. Ortmyer*, 141 U.S. 419, 424-25 (1891) (“The rights of the plaintiff depend upon the claim in his patent, according to its proper construction”) (internal quotation marks omitted). A patentee may only exclude others from using “[its] invention,” as set forth in the claims. *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523, 1529 (2017) (citing 35 U.S.C. § 154(a) and § 271(a)).

The Supreme Court has never permitted the use of standard-essentiality and standard-compliance as proxies for proving that the claim elements are each found in the accused product. Likewise, Congress has never endorsed reliance on standard essentiality to prove infringement under 35 U.S.C. § 271. The measure of a patentee’s rights is defined by the *claims of the patent*, not by an industry standard. In every patent case, the patent owner must prove the accused product falls within the claims to infringe, regardless

of whether the patent and accused device is compatible with an industry standard. *Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1319 (Fed. Cir. 2015) (“To establish literal infringement, every limitation set forth in a claim must be found in an accused product, exactly.”); *see also Markman*, 517 U.S. at 374 (“Victory in an infringement suit requires a finding that the patent claim covers the alleged infringer’s product or process, which in turn necessitates a determination of what the words in the claim mean.”) (internal quotations omitted).

## **II. The Federal Circuit’s decision conflicts with Supreme Court claim construction precedent**

In rejecting TCL’s position that standard-essentiality should be determined “as a matter of law and as part of claim construction,” the Federal Circuit reasoned that determining essentiality “is more akin to an infringement analysis . . . than to a claim construction analysis” because it involves analysis of extrinsic evidence. Appx. 68a. This reasoning is flawed for the following two reasons.

First, a standard-essentiality analysis in a patent litigation relies on the construction and comparison of written instruments, namely, patents and industry standard documents. As discussed in *Markman*, this is precisely the kind of work that judges, not juries, have historically undertaken. *Markman*, 517 U.S. at 382–83, n.7 (“it was generally the practice of judges in the late 18th century ‘to keep the construction of writings out of the jury’s hands and reserve it for themselves’”) (emphasis added) (citing 9 J. Wigmore, *Evidence* § 2461, p. 194 (J. Chadbourn rev. ed. 1981)). The *Markman* Court explained that judges were better suited to analyze the meanings of written

instruments: “The construction of written instruments is one of those things that judges often do and are likely to do better than jurors unburdened by training in exegesis.” *Markman*, 517 U.S. at 388–89.

Next, claim construction is a matter of law for the judge even when it involves extrinsic evidence and evidentiary underpinnings. *Markman* expressly acknowledged that claim construction may involve extrinsic evidence, including expert testimony as well as credibility judgments about testifying experts. *Markman*, 517 U.S. at 389. But the Supreme Court reasoned that a jury’s capacity to evaluate expert credibility is outweighed by a judge’s trained ability to evaluate an expert’s testimony in relation to the overall structure of written documents. *Id.* at 389–90 (“We accordingly think there is sufficient reason to treat construction of terms of art like many other responsibilities that we cede to a judge in the normal course of trial, notwithstanding its evidentiary underpinnings.”). It was with these policies in mind that the Court promulgated its rule in *Markman*: “[T]he construction of a patent, including terms of art within its claim, is exclusively within the province of the court.” *Id.* at 372.

More recently, in *Teva v. Sandoz*, this Court confirmed that claim construction is for the court and not the jury. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 330 (2015). The *Teva* Court explained that, “[w]hile we held [in *Markman*] . . . that the ultimate issue of the proper construction of a claim should be treated as a question of law, we also recognized that in patent construction, subsidiary factfinding is sometimes necessary.” *Id.* at 326. Nonetheless, “‘the construction of a patent, including terms of art within its claim,’ is not for a jury but ‘exclusively’ for ‘the court’ to determine. . . . That is so even where

the construction of a term of art has ‘evidentiary underpinnings.’” *Id.* at 321 (quoting *Markman*, 517 U.S. at 390) (emphasis added).

Allowing patent holders to prove infringement merely by proving compliance with an industry standard—and without any construction by the district court tying the patent claims to the standard—contravenes *Markman* by creating a “zone of uncertainty” around the scope of the patent claims, which is expressly what *Markman* tried to prevent with its bright-line rules on claim construction. *Markman*, 517 U.S. at 390-91.

**III. The Federal Circuit’s ruling allowing a party to obtain an infringement finding by relying solely on an industry standard and no claim construction is an error that will propagate if left unchecked**

Allowing patentees to prove infringement simply by arguing that a patent is standard-essential and that an accused product is standard-compliant provides an improper shortcut for patentees to obtain infringement verdicts, often for products that would not infringe under a proper analysis. This problem is exacerbated by the ease at which patents can be declared essential, and the vast number of essential patents that exist.

A certificate of standard-compliance is not an indication that a product satisfies every mandatory requirement of an industry standard, or an indication that the product meets each and every claim element of a patent. Significant differences exist in how standards organizations draft standards and the manner in which product designers later implement the required functionality. Indeed, standards organizations may be motivated to set standards for reasons other

than technological ones, and patent owners are highly motivated by financial incentives to compete for inclusion into such standards. *See, e.g.*, Joshua D. Wright, SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts, 21 *Geo. Mason L. Rev.* 791, 794, 804. Thus, it means little for a patent to be declared essential and for a device to be standard-compliant.

The concept of standard-essentiality was developed, not as a legal doctrine related to the law of patent infringement, but as an economic constraint on licensing demands for patents declared essential to an industry standard. *See* Jorge L. Contreras, Essentiality and Standards-Essential Patents, in *THE CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS* 209, 210 (Jorge L. Contreras ed., 2018) (discussing American Standards Association policy in the 1950s of requiring standard-essential patent owners to “make available to any interested and qualified party a license on reasonable terms”). When a patent owner declares its patent essential to a standard-setting organization such as “3GPP” that drafted the LTE standard, the organization does not verify whether the patent truly is essential; it merely accepts the patent owner at its word. As a consequence, many patents are declared “essential” when, in fact, they are not—a phenomenon known as “over-declaration” or “overdisclosure.” *See* Mark Lemley & Timothy Simcoe, How Essential are Standard-Essential Patents? 104 *CORNELL L. REV.* 607, 628-29 (March 2019) (noting “evidence that suggests that overdisclosure of SEPs is common” and that “[w]hen SEPs are asserted in court, most of them turn out not to be infringed”); Contreras, *supra*, at 222–24 (describing factors leading to over-declaration); Robin Stitzing et al., Over-Declaration of

Standard Essential Patents and the Determinants of Essentiality 10 (2018), *available at* <https://ssrn.com/abstract=2951617> (explaining that none of the major standard-setting organizations stipulate a formal process for adjudicating the essentiality of patents, and that ETSI, the organization that develops the LTE standard, “calls for patentees to declare, even if in doubt of the patent’s essentiality”). Additionally, patents may have certain claims that are essential to the standard while also having others that are not.

These inconsistent and vague rules are ripe for abuse. As a result, widespread declarations of essentiality have led to a proliferation of allegedly standard-essential patents. By some estimates, more than 40,000 U.S. patents have been declared standard-essential, and thousands more are declared essential each year. Justus Baron & Tim Christoph Pohlmann, Mapping Standards to Patents using Declarations of Standard-Essential Patents at 27 J. ECON. & MGMT. STRATEGY 504, 514-15, 534, Figures 2, A2 (2018) (showing “[n]umber of declared SEPs as to country of publication”).

For these reasons, if used in a patent litigation, the LTE industry standard *must* be linked *by the court* to the patent claims through claim construction. Without this check in the system, there can be no certainty that the industry standard asserted in the litigation sufficiently overlaps with the scope of the patent. Purportedly essential patents are ripe for abuse in patent litigation when used to short-circuit the claim construction process. If the Federal Circuit’s underlying ruling in this case is allowed to persist, and given the sheer volume of standard-essential patents, patent owners will undoubtedly continue to obtain infringement verdicts for accused products that do not practice all claim limitations. In turn, patent owners will get

damages awards that exceed the value of their patented technology, which is a further violation of this Court's precedent. *Garretson v. Clark*, 111 U.S. 120 (1884) (requiring patent damages award to be proportional to the scope of the claimed invention).

Magnifying these errors is the self-serving nature of the standard-setting process. Patent holders inform standard-setting organizations what patents should be declared essential, and the analysis often stops there. There is no guarantee in the standard-setting process that a third party will formally find that a patent's claims are covered by a standard. There must be *some step* in this process that allows a defendant to ensure that the patent asserted against it will be held to the scope of its claims, and that plaintiffs will not use the standard-setting process to improperly broaden patent claim scope during litigation. This Court's *Markman* ruling is the only meaningful protection that defendants have against these abuses associated with standard-essential patents. If *Markman* is not enforced, and if the underlying Federal Circuit decision is not overturned, patent holders will have a loophole that will allow plaintiffs to run amok in standard-essential patent cases for years to come.

**CONCLUSION**

For the above reasons, and in view of the importance of the questions presented herein, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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May 3, 2021

## **APPENDIX**

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**APPENDIX A**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed July 2, 2019]

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Civ. No. 15-634-JFB

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GODO KAISHA IP BRIDGE 1,  
*Plaintiff,*  
v.

TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED, A Chinese Corporation, TCT MOBILE  
LIMITED, a Hong Kong Corporation, TCT MOBILE  
(US), INC., A Delaware Corporation, and  
TCT MOBILE, INC., A Delaware Corporation,  
*Defendants.*

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**FINAL JUDGMENT**

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Pursuant to the Court's memoranda and orders on post-trial motions (D.I. 531 & 532), the jury's verdict (D.I. 487), and entry of judgment thereon (D.I. 512), IT IS ORDERED:

1. Judgment is entered in favor of plaintiff Godo Kaisha IP Bridge ("IP Bridge") and against defendants TCL Communication Technology Holdings Limited, TCT Mobile Limited, TCT Mobile (US), Inc., and TCT Mobile, Inc. (collectively, "TCL") on IP Bridge's claims of infringement of claims 9 and 12 of U.S. Patent No.

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8,385,239 and claims 15 and 16 of U.S. Patent No. 8,351,538 in the following amounts:

a. \$950,000.00 in past damages pursuant to the jury verdict;

b. \$109,304.64 in supplemental damages for the sales of adjudicated products from March 31, 2018, to the date of verdict, November 8, 2018;

c. \$968,086.96 in damages for a reasonable royalty of four cents per product per patent on sales of 12,101,087 infringing nonaccused LTE units between November 21, 2017, and April 24, 2019;

d. \$158,017.76 in prejudgment interest, calculated at the prime rate, compounded quarterly, from and after July 24, 2015, to January 2, 2019, on the jury verdict and supplemental damages awards; plus

e. Post-judgment interest at the statutory rate under 28 U.S.C. § 1961(a) from and after January 2, 2019, on the \$950,000 past damages judgment; and the \$109,304.64 supplemental damages judgment; and

f. Post-judgment interest at the statutory rate under 28 U.S.C. § 1961(a) from and after the date of this order on the \$968,086.96 sales-of-infringing nonaccused-LTE-units judgment and the \$158,017.76 prejudgment interest judgment.

2. Plaintiff IP Bridge is entitled to an ongoing reasonable royalty of four cents per product per patent on sales of the adjudicated products from and after the date of the verdict, November 8, 2018, to the date of expiration of the patents at issue.

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3. Plaintiff IP Bridge is entitled to an ongoing reasonable royalty of four cents per product per patent on sales of TCL's infringing non-accused LTE units from and after the date of April 24, 2019, to the date of expiration of each of the patents at issue.

4. TCL shall provide IP Bridge with an accounting, as of January 31st of each year, of all U.S. sales during the preceding twelve months of any TCL products capable of connecting to an LTE network.

DATED this 2nd day of July 2019.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge

4a

**APPENDIX B**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed April 19, 2017]

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Civ. No. 15-634-SLR

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GODO KAISHA IP BRIDGE 1,

*Plaintiff,*

v.

TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED, a Chinese Corporation, TCT MOBILE  
LIMITED, a Hong Kong Corporation, TCT  
MOBILE (US), INC., a Delaware Corporation and  
TCT MOBILE, INC., a Delaware Corporation,

*Defendants.*

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**MEMORANDUM ORDER**

At Wilmington this 19th day of April, 2017, having heard argument on, and having reviewed the papers submitted in connection with, the parties' proposed claim construction;

IT IS ORDERED that the disputed claim language of U.S. Patent Nos. 7,373,295 ("the '295 patent"), 8,351,538 ("the '538 patent"), and 8,385,239 ("the '239 patent") shall be construed consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), as follows:

1. "Pulse vector:"<sup>1</sup> "A sequence of electrical pulses." The specification explains that the pulse vector generator generates "[pulse] vectors . . . each having a signed unit pulse<sup>2</sup> [] provided to one element on a vector axis." ('295 patent, 6:28-30) With reference to table 1, the specification describes a rule for generating pulse vectors with pulses located according to a position vector.<sup>3</sup> (*Id.*, 6:46-49, table 1)

2. "Pulse vector generator:"<sup>4</sup> § 112, ¶ 6 applies. Indefinite. When claim language does not employ the word "means," the presumption is that § 112, ¶ 6 does not apply. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). However, "the presumption can be overcome and § 112, ¶ 6 will apply if the

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<sup>1</sup> Found in '295 patent, claims 1-4.

<sup>2</sup> The specification recites a "unit pulse," but does not explain what it is, or what units of measure are used to define it. The specification does not clarify whether the "unit pulse" refers to the magnitude of the vector or to the magnitude of an individual number in the n-tuple of the vector. Plaintiff argued that the equation (col 7:15-38) defines "a pulse vector as having a single pulse." (D.I. 109 at 5) The declaration of plaintiff's expert, Paul Min, PhD ("Dr. Min"), at ¶ 50 as cited does not support this assertion. (D.I. 111, ¶ 50) The parties agreed that the pulse vector represents a sequence of electrical pulses.

<sup>3</sup> Plaintiff proposed "a vector with at least one pulse" and argued that there only needs to be a single pulse in a pulse vector. However, Dr. Min explained that the pulse vector generator "outputs pulse vectors in accordance with a rule for specifying the pulse positions and whether those pulses are positive or negative." (D.I. 111, ¶ 53) Figure 3 shows the pulse vectors as having either positive or negative values at each "pulse position candidate," so according to the specification and Dr. Min's explanation, the pulse vector cannot have zero values at any of the specified pulse positions. Plaintiff did not explain how Dr. Min's opinion reconciles with plaintiff's proposed construction.

<sup>4</sup> Found in '295 patent, claims 1-4.

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challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Id.* (citations omitted) (internal quotation marks omitted). Claim 1 recites:

A dispersed pulse vector generator used for a speech coder/decoder, comprising:

- a pulse vector generator configured to generate a pulse vector having a signed unit pulse;
  - a dispersion pattern storage configured to store a plurality of fixed dispersion patterns;
  - a dispersion pattern selector configured to determine a selected dispersion pattern of the plurality of fixed dispersion patterns with reference to an adaptive codebook gain; and
  - a dispersed pulse vector generator configured to generate a dispersed pulse vector by convoluting the pulse vector and the selected dispersion pattern;
- the dispersion pattern selector comprising;
- a first selector that pre-selects dispersion patterns of the plurality of fixed dispersion patterns; and
  - a second selector that determines the selected dispersion pattern, of the pre-selected dispersion patterns, to be convoluted with the pulse vector.

(’295 patent, 28:16-34) The “dispersed pulse vector generator” comprises (among other things) “a pulse vector generator” and “a dispersed pulse vector generator;” therefore, the “pulse vector generator” term is central to the construction of claim 1. Plaintiff argued that no construction is necessary for “pulse vector generator,” because “the prefix ‘pulse vector’ imparts [sufficiently definite] structure to the term ‘generator’ and that § 112, ¶ 6 does not apply. (D.I. 109 at 5) Plaintiff contended that “the specification describes a pulse vector generator’s structure by ‘describing the claim limitation’s operation, such as its input, output, or connections. (*Id.*, citing *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014)) Defendants’ expert, Nikil Jayant, PhD (“Dr. Jayant”), opined that § 112, ¶ 6 applies, because the specification “does not disclose any type of structure, neither physical component nor a software algorithm, for generating a pulse vector.” (D.I. 131, ¶ 52)

3. The specification discloses that the “pulse vector generator” generates pulse vectors. (*See, e.g.*, ’295 patent, 6:26-30; 6:46-49; 7:6-9; figure 3, box 101; figure 4, box 216; figure 5, box 312; figure 6, box 416; and figure 7, box 516) Tables 1 and 2 identify the “pulse position candidates” for various channels. For example, table 1 shows channel 1 as having pulse position candidates in the form of an eight-tuple; however, the pulse position candidates for channels 2 and 3 are shown as a matrix having two rows and eight columns. (’295 patent, 6:51-62) The court notes that, aside from general boxes in “functional block diagram[s],” the specification does not identify any physical structure associated with the “pulse vector generator,” nor does the specification discuss software, processors, or

computers of any kind.<sup>5</sup> Plaintiff contended that *Apple v. Motorola* applies, but Dr. Min did not express an opinion whether the '295 patent discloses a computer implemented invention or whether a “pulse vector generator” would be implemented in software in the first place. The Federal Circuit has explained that:

“Structure” to a person of ordinary skill in the art of computer-implemented inventions may differ from more traditional, mechanical structure . . . . the “structure” of computer software is understood through, for example, an outline of an algorithm, a flowchart, or a specific set of instructions or rules . . . . Structure may also be provided by describing the claim limitation’s operation, such as its input, output, or connections. The limitation’s operation is more than just its function; it is how the function is achieved in the context of the invention.

*Apple*, 757 F.3d at 1298-99.<sup>6</sup> Plaintiff argued the latter, relying on Dr. Min’s opinion that the structure

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<sup>5</sup> Plaintiff did not argue that a physical structure was identified. The specification does mention “memory” and “switches” with reference to the “dispersion pattern storage and selection” functional box. ('295 patent, figure 3, item 102) While plaintiff’s expert explained that these are computer memory and (ostensibly) electrical switches, nothing in the specification says one way or another.

<sup>6</sup> The applicability of many of the cases cited by plaintiff depends on this critical (but unestablished) fact. If this invention is implemented on a computer, and the “pulse vector generator” is a function defined primarily in software, then the case law provides an avenue for establishing the applicability of § 112, ¶ 6, determining whether sufficient corresponding structure has been identified, and for evaluating definiteness under § 112, ¶ 2. It is worth noting, however, that if a person having ordinary skill

of the “pulse vector generator” is found in its “input, output, or connections.” (D.I. 111 at ¶ 53) In response, Dr. Jayant pointed out that:

For example, tables 1 and 2 show that the positions of pulses within the pulse vectors may be reflective of an algebraic codebook table. ('295 Patent, 6:50-63, 27:38-47) However, the specification does not disclose how those pulse vectors are generated, nor does it disclose what, other than the amorphous “pulse vector generator,” generates those pulse vectors. For example, the specification does not disclose whether a pulse vector generator outputs stored pulse vectors in response to various inputs, or whether a pulse vector generator synthesizes and outputs pulse vectors in real-time.

(D.I. 131 at ¶ 53 (emphasis in original)) The specification explains “operation of the . . . excitation vector generator,” but the explanation of the operation of the “pulse vector generator” is conclusory: “the pulse vector generator 101 algebraically generates the signed pulse vectors corresponding to the number of channels (three in this embodiment) in accordance with the rule described in table 1.” ('295 patent, 7:6-9; *see also id.*, 6:46-49; 9:3-8)

4. Table 1, as discussed above, shows where the pulses may be placed in a given vector or matrix, but the specification does not explain the “algebraic”

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in the art would expect the pulse vector generator to be implemented in hardware (e.g. electronic circuitry), then such structures would need to be identified.

process by which the pulse vector is generated.<sup>7</sup> Column 7 of the specification discusses various relationships involved in generating the excitation vector in the first embodiment, including a vector  $di$ , which is the “signed pulse vector for channel  $i$ .” (*Id.*, 7:32) In the first embodiment, the vector  $di$  may be a potential output from the pulse vector generator as identified by a mathematical relationship: “ $di = \pm\delta(n - pi)$ ,  $n = 0 - L - 1$ ” where an input, “ $pi$  [, is the] signed pulse vector candidate for channel  $i$ .” (*Id.* at 7:32-34) The specification does not explain whether this is an algebraic relationship employed by the pulse vector generator. (*Id.* at 7:10-57) Plaintiff’s expert, Dr. Min, explained that  $+\delta$  “is the pulse polarity” and that “ $pi$  is the pulse position candidate for channel  $i$  . . . as shown in table 1.”<sup>8</sup> (D.I. 138 at ¶ 8) Drawing upon the second embodiment, which discloses “a CELP speech

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<sup>7</sup> At oral argument, plaintiff’s counsel displayed a slide and explained that:

The next portion of the table [1] says, you need to indicate where the pulse position is, and it indicates here, for example, Channel 1, the pulse position candidates are 0, 10, 20, 30, and up to 70. One of ordinary skill in the art can understand that you can convert that position and interpret it in bit format. You see on the right-hand side her[e], it’s very simple. Position 0 could be converted into 000. Position 10 could be converted into 0001. And so this, your Honor, is the algorithm.

(D.I. 233 at 31 (citing plaintiff’s demonstrative slide 13)) These materials do not reflect the intrinsic record or Dr. Min’s opinion. The court declines to consider them.

<sup>8</sup> The specification does not draw this connection between  $pi$  and table 1. The court notes that table 1 uses a different notation: “ $P^1$ ,” “ $P^2$ ,” and “ $P^3$ ,” and that  $P^2$  and  $P^3$  refer to matrices and not vectors. Dr. Min does not discuss these differences in either of his reports.

coder,”<sup>9</sup> Dr. Min opined that the “combination index for pulse vectors”<sup>10</sup> is the input for the pulse vector generator. (D.I. 138 at ¶ 5 (citing ’295 patent, 10:1-5; 8:58-59)) The second embodiment builds on the first, “this embodiment applies the excitation vector generator explained in the first embodiment to the random codebook of the CELP speech encoder of [figure] 1.” (’295 patent, 8:40-43) However, nothing in the specification suggests that the applicant intended the second embodiment to be read into the first to explain the operation of the example in the first embodiment so as to impart structure to the “pulse vector generator” in the first embodiment. The parties agreed that the specification discloses a pulse vector, but the inputs, outputs, and connections associated with the pulse vector generator are described at a high level without sufficient detail to explain how the pulse vector generator “interacts with other components . . . in a way that might inform the structural character of the limitation-in-question or otherwise impart structure” to the pulse vector generator.<sup>11</sup> *Williamson*,

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<sup>9</sup> The first embodiment discloses an “excitation vector generator.” (’295 patent, 6:16-18) The second embodiment discloses “a CELP speech coder.” (*Id.*, 8:37-39) Dr. Min does not explain why these two disclosures should be read together to explain the algebraic function that defines how the pulse vector generator operates in the first embodiment.

<sup>10</sup> This “input” is also described as the “combination index for pulse positions and pulse polarities.” (’295 patent, 8:58-59) By definition, the combination index may be related to *pi* as articulated in the first embodiment.

<sup>11</sup> At best, the specification and Dr. Min provide insight into the mathematical relationships between some of the (possible) inputs into the “pulse vector generator” and some of the (possible) outputs, but none of this information relates to the structure of the “pulse vector generator” itself.

792 F.3d at 1351. For these reasons, the court concludes that defendants have rebutted the presumption against means-plus-function claiming. Therefore, “pulse vector generator” is governed by § 112, ¶ 6.

5. When § 112, ¶ 6 applies, a “claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112, ¶ 6. “A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). Construing a claim under § 112, ¶ 6 “is a two-step process. The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson*, 792 F.3d at 1351. Means-plus-function claim language is indefinite “if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim.” *Id.* at 1352 (citation omitted).

6. The parties agree that the pulse vector generator performs the function of “generat[ing] a pulse vector having a signed unit pulse.” (’295 patent, 28:18-19; D.I. 130 at 7; *see also* D.I. 109 at 6) Dr. Min explained that “a person skilled in the art would associate the[] pulse generation rules [as in tables 1 and 2 and elsewhere in the specification] as the structures corresponding to the recited function.” (D.I. 111, ¶ 56) Dr. Jayant opined that “the specification does not disclose corresponding structure for performing . . . [the] function,” and that tables 1 and 2 merely “show

that the positions of pulses within the pulse vectors may be reflective of an algebraic codebook table” without disclosing how to generate pulse vectors. (D.I. 131, ¶¶ 52-53) In the first embodiment, “the pulse vector generator 101 algebraically generates [three] pulse vectors in accordance with the rule described in table 1.” (’295 patent, 6:46-48; *see also id.*, 7:6-9) The specification refers to table 1 as “a pulse generation rule.” (*Id.*, 8:22-28; 9:3-8; 9:25; 9:39) The seventh embodiment discloses another set of candidate positions for the pulses: “[t]he five signed unit pulses constituting the random vector have pulses each selected from the candidate positions defined for each of zero to fourth groups shown in table 2.” (’295 patent, 27:28-30) Taken together, tables 1 and 2 are rules for where, in vector space, individual pulses may be located; however, neither table 1 nor table 2 describes an algorithm<sup>12</sup> governing the operation of the pulse vector generator.

7. Plaintiff argued that “the prefix ‘pulse vector’ imparts structure to the term ‘generator.’ (D.I. 109 at 5) Defendants responded that “[t]he prefix ‘pulse vector’ does nothing more than restate the specified function of the ‘generator.’ (D.I. 143 at 1) “Pulse vector” cannot impart corresponding structure to “generator,” because “purely functional language, which simply restates the function associated with the means-plus-function limitation, is insufficient to provide the required corresponding structure.” *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1317 (Fed. Cir.

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<sup>12</sup> The specification discloses algorithms. (*See, e.g.*, ’295 patent, 16:46-48, figure 9 (“vector quantization algorithm”)) Table 1 is identified as a “rule” and nothing in the record suggests that the applicant intended for the “rule” of table 1 or the “pulse position candidates” of table 2 to disclose an algorithm.

2012) (citations omitted). Plaintiff responded that “the term is not indefinite because the specification discloses ‘a specific set of instructions or rules’ for generating pulse vectors.”<sup>13</sup> (D.I. 137 at 3, quoting *Apple*, 757 F.3d at 1298) Plaintiff contended that “the specification ‘disclose[s] adequate defining structure to render the bounds of the claim understandable to one of ordinary skill in the art.’ (D.I. 137 at 4, quoting *AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1245 (Fed. Cir. 2007)) *AllVoice Computing* is inapposite, because the specification in *AllVoice* included an algorithm described in a flow chart in figure 8A, and the patentee’s expert “set forth several straightforward ways that the algorithm represented in figure 8A could be implemented by one skilled in the art using well-known features of the Windows operating system.”<sup>14</sup> *AllVoice Computing*, 504 F.3d at 1345. Plaintiff argued that “a person of ordinary skill in the art<sup>15</sup> would have been familiar

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<sup>13</sup> This citation to *Apple* relates to the question of whether § 112, ¶ 6 applies and not to whether “a specific set of instructions or rules” can provide sufficient corresponding structure to avoid indefiniteness.

<sup>14</sup> It is not clear that the invention of the ’295 patent is implemented in software. In its reply brief, plaintiff argued (by analogy to *Apple*, 757 F.3d 1286) that “a ‘pulse vector generator’ is a [computer software] algorithm.” (D.I. 137 at 2) However, the specification does not mention computers, processors, or software. Dr. Min opined that “memory” is computer memory and that “switch” is either an electrical component or something implemented in software. (D.I. 111, ¶¶ 64-74) Dr. Jayant disagreed. (D.I. 131, ¶ 66)

<sup>15</sup> The parties agreed that a person having ordinary skill in the art “would have had at least the equivalent of a master’s degree in electrical engineering or related discipline, or at least [three] years of practical or research experience in the field of digital

with algebraic codebook tables, such as the ones in tables 1 and 2, and understood how a pulse vector generator inserts a non-zero number representing a pulse into at least one of the pulse position candidates shown in the tables.” (D.I. 137 at 3 (citing D.I. 138, ¶¶ 6-9)) Defendants argued that plaintiff cannot “rely on the knowledge of one of skill in the art to compensate for the lack of disclosure in the ’295 patent itself.” (D.I. 143 at 3 & n.2, citing *Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013); *Aristocrat Techs. Australia Pty Ltd. v. Intl Game Tech.*, 521 F.3d 1328, 1336-37 (Fed. Cir. 2008)) The Court in *Aristocrat* distinguished *AllVoice Computing* and explained that “[t]he question [] is not whether the algorithm that was disclosed was described with sufficient specificity, but whether an algorithm was disclosed at all.” *Aristocrat*, 521 F.3d at 1337. The *Aristocrat* court explained that

the proper inquiry for purposes of § 112, 6 analysis is to look at the disclosure of the patent and determine if one of skill in the art would have understood that disclosure to encompass software to perform the function and been able to implement such a program, not simply whether one of skill in the art would have been able to write such a software program.

*Id.* (citations and quotations omitted). Dr. Min did not explain that the ’295 patent discloses software, nor did he express the opinion that a person having ordinary skill in the art would recognize tables 1 and 2 as disclosing computer-implemented algorithms.

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signal processing for speech or audio applications.” (D.I. 131, ¶ 36; D.I. 111, ¶ 46)

Instead, Dr. Min opined that “the term ‘pulse vector generator’ connotes an algorithm,” and that “a person of ordinary skill would understand [mathematically] how a pulse vector generator generates pulse vectors.”<sup>16</sup> (D.I. 111, ¶ 54; D.I. 138, ¶ 5) In light of *Aristocrat*, the distinction here is between understanding the mathematical operation involved in calculating a pulse vector and understanding the patent specification as describing software to perform the function (and being able to program a computer to perform the function) associated with the pulse vector generator. Based upon the extrinsic record at hand, Dr. Min has established the former and not the latter.<sup>17</sup> Under § 112, ¶ 6, the term “pulse vector generator” lacks sufficient disclosure of structure and, therefore, is indefinite under § 112, ¶ 2, because it “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124.

8. “Dispersion pattern storage:”<sup>18</sup> “Memory for storing dispersion patterns.” Section 112, ¶ 6 does not

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<sup>16</sup> See *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009) (“A patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function. To allow that form of claiming under § 112, ¶ 6, would allow the patentee to claim all possible means of achieving a function.”).

<sup>17</sup> There is no evidence in the record that a person having ordinary skill in the art would also be able to program the software necessary to create a computer-implemented “pulse vector generator,” if such a structure were implemented on computer.

<sup>18</sup> Found in ’295 patent, claims 1 and 3.

apply.<sup>19</sup> Not indefinite. The specification discloses that “[a] memory stores at least one type of dispersion pattern for each of the channels.”<sup>20</sup> (’295 patent, abstract; figure 3, items 102, M1, M2, and M3)

9. “Dispersion pattern selector:”<sup>21</sup> “Switch for selecting a dispersion pattern.” Section 112, ¶ 6 does not apply.<sup>22</sup> Not indefinite. The specification recites sufficiently definite structure. For example, figure 3 discloses “a dispersion pattern storing and selecting section 102 having dispersion pattern storing sections and switches.” (’295 patent, 6:20-22; *see also* figure 3, items 102, SW1, SW2, and SW3; 6:31-37; 6:66-7:5; 8:66-9:3; 11:31-41; 11:50-57; and 12:44-13:2) Extrinsic evidence: Dr. Min explained that figure 3 “graphically represents a switch that selects a dispersion pattern from multiple dispersion patterns” and that a person of ordinary skill in the art would recognize that the selector is a switch. (D.I. 111, ¶¶ 64-66)

10. “A first selector:”<sup>23</sup> Section 112, ¶ 6 does not apply.<sup>24</sup> Not indefinite. Claim 1 recites “a first selector

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<sup>19</sup> In order to rebut the presumption that § 112, ¶ 6 does not apply, defendants carry the burden to demonstrate “that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function. *Williamson*, 792 F.3d at 1349 (citations omitted). Defendants failed to rebut the presumption.

<sup>20</sup> Dr. Min explained that a person having ordinary skill in the art would recognize “dispersion pattern storage” as “memory.” (D.I. 111, ¶¶ 60-63)

<sup>21</sup> Found in ’295 patent, claim 1.

<sup>22</sup> *See supra* note 19.

<sup>23</sup> Found in ’295 patent, claim 1.

<sup>24</sup> Dr. Min opined that “a first selector” would be understood by a person having ordinary skill in the art as “a first switch.” (D.I. 111, ¶ 64) Dr. Jayant explained “that the terms “dispersion

that pre-selects dispersion patterns of the plurality of fixed dispersion patterns.” (’295 patent, 28:30-31) Figure 3 discloses “a dispersion pattern storing and selecting section 102 having dispersion pattern storing sections and switches.” (’295 patent, 6:20-22; *see also* figure 3, items 102, SW1, SW2, and SW3) The “switches SW1 to SW2 [are] for selecting one kind of dispersion pattern from M kinds of dispersion patterns stored in the respective storing sections M1 to M3.” (’295 patent, 6:34-37) Moreover, “in the CELP speech coder using the excitation vector generator of the first embodiment in the random codebook, a pre-selection for dispersion patterns stored in the dispersion pattern storing and selecting section is carried out . . . before searching the index of random codebook.” (’295 patent, 11:52-57 (emphasis added)) While the specification does not identify which specific switch is the first selector, the specification discloses an algorithm for the operation of the first selector:

[W]hen the adaptive codebook gain is larger than the threshold value as a result of the comparison, the control signal provides an instruction to select the dispersion pattern obtained by the pre-training to reduce the quantization distortion in vector quantization processing for random excitations. Also, when the adaptive code gain is not larger than the threshold value as a result of the comparison, the control signal provides an instruction to carry out the pre-selection for the dispersion

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pattern selector,” “a first selector,” and “a second selector” (i.e., “the ‘selector’ elements”) are not understood by persons of ordinary skill in the art to have sufficiently definite meanings as the names for structure.” (D.I. 131, IT 63)

pattern different from the dispersion pattern obtained from the result of the pretraining.

(’295 patent, 12:49-59) For these reasons, § 112, ¶ 6 does not apply. *See Williamson*, 792 F.3d at 1349.

11. ”A second selector:”<sup>25</sup> Section 112, ¶ 6 applies. Indefinite. Claim 1 recites “a second selector that determines the selected dispersion pattern, of the pre-selected dispersion patterns, to be convoluted with the pulse vector.” (’295 patent, 28:32-34) The specification explains that “[t]he pulse vector dispersion section 103 performs convolution of the pulse vectors output from the pulse vector generator and the dispersion patterns output from the dispersion pattern storing and selecting section 102 in every channel so as to generate N dispersed vectors.” (’295 patent, 6:38-43) The specification does not mention “a second selector,” and the specification contains no algorithms describing the operation of “a second selector.”<sup>26</sup> Therefore, § 112, ¶ 6 applies. *See Williamson*, 792 F.3d at 1349.

12. Construing a claim under § 112, ¶ 6 “is a two-step process. The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson*, 792 F.3d at 1351. Means-plus-function claim language is indefinite “if a

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<sup>25</sup> Found in ’295 patent, claim 1.

<sup>26</sup> Plaintiff argued that the specification “describes that each switch in figure 3 can be replaced with two switches—a first switch for pre-selecting one group of dispersion patterns, and a second switch for selecting from the pre-selected group a dispersion pattern with a certain index.” (D.I. 109 at 11-12 (citing ’295 patent, 11:50-57)) The cited passage does not identify any structures, nor does it discuss the function associated with “a second selector” as described in the claims.

person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim.” *Id.* at 1352 (citation omitted). The function of “a second selector,” under § 112, ¶ 6, is “determin[ing] the selected dispersion pattern, of the pre-selected dispersion patterns, to be convoluted with the pulse vector.” The structural relationships are described as follows:

The pulse vector dispersion section 103 performs convolution of the pulse vectors output from the pulse vector generator 101 and the dispersion patterns output from the dispersion pattern storing and selecting section 102 in every channel so as to generate N dispersed vectors.

(’295 patent, 6:38-42) A “second selector” is located somewhere within the “dispersion pattern storing and selecting section 102” in the functional block diagram, figure 3. However, the specification does not identify a structure corresponding to “a second selector” within the dispersion pattern storing and selecting section. Plaintiff did not identify how “a second selector” “determines the selected dispersion pattern,” and Dr. Min’s declarations provided no additional insight. (D.I. 111, ¶¶ 64-74; D.I. 138, ¶¶ 14-15) For these reasons, “a second selector” as construed under § 112, ¶ 6 is indefinite under § 112, ¶ 2.

13. “An arranging unit.”<sup>27</sup> “Circuitry or a combination of circuitry and software that operates to insert signals into symbols of a CQI transmission slot.”

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<sup>27</sup> Found in ’538 patent, claims 9 and 14.

Section 112, ¶ 6 does not apply.<sup>28</sup> Not indefinite. Claim 9 recites:

A radio communication apparatus comprising:

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an arranging unit configured to arrange two reference signals (RS), which are produced by multiplying two reference signal sequences with values having opposite phases from each other, in the Nth symbol and the Mth symbol of a CQI signals transmission slot, and to arrange channel quality indicator (CQI) signals in symbols of the CQI signals transmission slot other than the Nth symbol and the Mth symbol, . . .

(’538 patent, 18:60-19:17) The claim language itself provides sufficiently definite structure for “an arranging unit” “by describing the claim limitation’s operation, such as its input, output, or connections.” *Apple*, 757 F.3d at 1299. The specification, with reference to figures 5 and 8-11, also demonstrates the input, output, or connections associated with the “arranging unit.” Defendants have failed to rebut the presumption that § 112, ¶ 6 does not apply.<sup>29</sup>

14. “Format for transmitting an ACK/NACK signal.”<sup>30</sup> “A first slot structure for transmitting an ACK/NACK signal.” Claim 10 depends on claim 9, which recites:

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<sup>28</sup> See *supra* note 19.

<sup>29</sup> Defendants relied solely on the application of § 112, ¶ 6 as their basis for indefiniteness. (See D.I. 130 at 21-23; D.I. 143 at 11)

<sup>30</sup> Found in ’538 patent, claim 10.

A radio communication apparatus comprising

a transmitting unit configured to transmit the spread ACK/NACK signal in the ACK/NACK signal transmission slot;

an arranging unit configured to arrange two reference signals (RS), which are produced by multiplying two reference signal sequences with values having opposite phases from each other, in the Nth symbol and the Mth symbol of a CQI signals transmission slot, and to arrange channel quality indicator (CQI) signals in symbols of the CQI signals transmission slot other than the Nth symbol and the Mth symbol, . .

(‘538 patent, 18:60-19:15) The slot structure associated with the ACK/NACK signal is disclosed in claim 9 and in the specification. (‘538 patent, 19:5-6; figures 1, 8, 9, 10, and 11) Claims 9 and 10 are not limited to the transmission of a reference signal in the ACK/NACK signal transmission slot.<sup>31</sup> For example,

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<sup>31</sup> The parties argued the construction of claims 10 and 15 together. Plaintiff had proposed “a slot structure for transmitting an ACK/NACK signal and a reference signal.” (D.I. 102 at 7) Neither party addressed the differences between these two claims as it relates to the inclusion of a reference signal in the ACK/NACK signal. Plaintiff contended that the specification explicitly includes “reference signal[s]’ in the ACK/NACK and CQI formats.” (D.I. 109 at 24) Plaintiff clarified that “all of the embodiments of the ‘538 patent discuss the reference signals, as their positions are critical to the claimed invention.” (D.I. 137 at 12 (emphasis in original)) Defendants responded that the intrinsic record provides “no evidence of a ‘clear intention’ to include . . . [the reference signal] limitations in the meaning of ‘format’ and that it is improper to import the “slot structure” limitation into the claims. (D.I. 130 at 24-25) As discussed herein, the differing

claim 10 distinguishes between “the spread ACK/NACK signal in the ACK/NACK signal transmission slot” and “the reference signals (RS) and the CQI signals arranged in the CQI signals transmission slot.” (’538 patent, 19:21-24)

15. ”Format for transmitting an ACK/NACK signal.”<sup>32</sup> “A first slot structure for transmitting an ACK/NACK signal and a reference signal.” Claim 15 depends on claim 14, which recites:

A radio communication apparatus comprising: . . . .

an arranging unit configured to arrange the spread ACK/NACK signal in the 1st, 2nd, 6th and 7th symbols of the ACK/NACK signal transmission slot and to arrange first reference signals (1st RS) in 3rd, 4th and 5th symbols of the ACK/NACK signal transmission slot; and

a transmitting unit configured to transmit the ACK/NACK signal and the first reference signals (1st RS) arranged in the ACK/NACK signal transmission slot, . . .

(’538 patent, 20:1-21) This specific slot structure associated with the ACK/NACK signal is disclosed in claim 14 and in the specification. (’538 patent, 20:14-18; figures 1, 8, 9, 10, and 11) Claim 14 includes the limitation that the ACK/NACK signal transmission slot includes symbol positions for a reference signal. Claim 15 recites:

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limitations of claims 10 and 15 support different constructions of the relevant terms.

<sup>32</sup> Found in ’538 patent, claim 15.

The radio communication apparatus according to claim 14, wherein

the transmitting unit transmits the ACK/NACK signal and the first reference signals (1st RS) arranged in the ACK/NACK signal transmission slot or the second reference signals (2nd RS) and the CQI signals arranged in the CQI signals transmission slot using a physical resource that supports a mixture of a format for transmitting an ACK/NACK signal and a format for transmitting CQI signals.

(’538 patent, 20:32-41) Claim 15 includes the limitation that the ACK/NACK signal is transmitted with the first reference signals.

16. ”Format for transmitting CQI signals:”<sup>33</sup> “A second slot structure for transmitting the CQI signals and the reference signals.” “Format for transmitting CQI signals:”<sup>34</sup> “A second slot structure for transmitting the CQI signal and the second reference signals.” A slot structure is described in the claims and the specification. (’538 patent, 19:10-14; 19:23-24; 20:22-32; 20:37-38; figures 5, 8, 9, 10, 11, and 16) In claim 10, reference signals and CQI signals are arranged and transmitted in the “CQI signals transmission slot.” (’538 patent, 19:15-17; 19:23-24) Claim 15 (including the second reference signals) is similarly limited. (’538 patent, 20:22-29; 20:36-38)

17. ”A physical resource that supports a mixture of a format for transmitting an ACK/NACK signal and a

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<sup>33</sup> Found in ’538 patent, claim 10.

<sup>34</sup> Found in ’538 patent, claim 15.

format for transmitting CQI signals.”<sup>35</sup> “A physical resource that supports transmitting, at the same time, a first slot structure for transmitting the spread ACK/NACK signal, and a second slot structure for transmitting the CQI signals and the reference signals.” “A physical resource that supports a mixture of a format for transmitting an ACK/NACK signal and a format for transmitting CQI signals.”<sup>36</sup> “A physical resource that supports transmitting, at the same time, a first slot structure for transmitting an ACK/NACK signal and the first reference signals, and a second slot structure for transmitting the CQI signals and the second reference signals.” The ACK/NACK signal transmission slot and the CQI signals transmission slot are transmitted at the same time. Plaintiff argued that the construction of “mixture” “incorporates the limitation that the formats must be sent ‘at the same time.’ (D.I. 109 at 24) Defendants’ expert, Dr. Stephen B. Wicker (“Dr. Wicker”), opined that “[r]esource blocks are made up of multiple resource elements, not all of which are transmitted simultaneously. Each symbol within a single slot is transmitted consecutively. Two signals can be transmitted in those symbols within the same resource block, but sent consecutively, rather than simultaneously.” (D.1.133, ¶ 65) Based upon this explanation, defendants contended that the ACK/NACK signal and the CQI signals can be sent “at different times.” (D.I. 130 at 25)

18. The specification discusses the background art in which the “ACK/NACK signal is transmitted to the base station using an uplink control channel such as a PUCCH (Physical Uplink Control Channel).”

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<sup>35</sup> Found in ’538 patent, claim 10.

<sup>36</sup> Found in ’538 patent, claim 15.

(’538 patent, 1:22-24) It is possible “to “code-multiplex ACK/NACK signals from a plurality of mobile stations by spreading using ZC (Zadoff-Chu) sequences and Walsh sequences.”<sup>37</sup> (’538 patent, 1:46-49) The specification identifies the problem to be solved as: “in a PUCCH of [the] 3GPP LTE [specification], not only the above-described ACK/NACK signals but also CQI (Channel Quality Indicator) signals are multiplexed.” (’538 patent, 3:24-26) However, “Walsh sequences are not applicable to CQI signals and therefore the Walsh sequences cannot be used to separate an ACK/NACK signal and CQI signal,” but it is possible to separate these signals with “little inter-code interference” by using ZC sequences to despread an ACK/NACK signal and CQI signal spread using ZC sequences associated with different cyclic shifts.” (’538 patent, 3:32-40) The specification explains that, “when despreading is performed using ZC sequences to separate a CQI signal from an ACK/NACK signal, a little inter-code interference from the ACK/NACK signal remains.” (’538 patent, 3:47-50) Specifically, with respect to reference signals (“RS”):

As shown from FIG. 1 and FIG. 5, an ACK/NACK signal and CQI signal employ different signal formats and their RSs are defined in different positions (that is, the positions of these RS are optimized independently in case where only an ACK/NACK signal is received and in case where only a CQI signal is received). Therefore, there is a problem that the amount of interference from an ACK/NACK signal to RSs of a CQI signal varies depending on the content of data of the

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<sup>37</sup> The court notes that code-division multiplexing is a method of multiplexing signals that are sent at the same time.

ACK/NACK signal or the phases of W 1 and W 2 used for the ACK/NACK signal. That is to say, even though RSs are important portions for receiving a CQI signal, there is a possibility that the amount of interference in these RSs cannot be predicted, thereby deteriorating CQI receiving performance.

(’538 patent, 3:50-63) This interference is the result of transmitting the two signals (ACK/NACK and CQI) at the same time. According to the specification, the solution to this interference involves “add[ing] a phase according to part of the orthogonal sequence [used to spread the ACK/NACK signal], to a reference signal of a channel quality indicator signal including the reference signal to which the phase is added.” (’538 patent, 4:11-17) In claims 9 and 14, the “arranging unit” adds this phase to the reference signals transmitted in the CQI signals transmission slot. (’538 patent, 19:7-14; 20:14-18; 20:22-29) Nothing in the specification or the claims suggests that, within the scope of claims 10 and 15, the ACK/NACK signal transmission slot and the CQI signals transmission slot are transmitted sequentially or at different times.<sup>38</sup>

19. “Multiplexing the aperiodic channel quality indicator report, with data.”<sup>39</sup> “Multiplexing the aperiodic channel quality indicator report with user data.” “Without multiplexing the aperiodic channel quality

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<sup>38</sup> The specification mentions that there are situations where the ACK/NACK signal and the CQI signals are transmitted at different times, but the problem the ’538 patent seeks to solve is what happens when these two signals are transmitted at the same time.

<sup>39</sup> Found in ’239 patent, claim 8.

indicator report with data.”<sup>40</sup> “Without multiplexing the aperiodic channel quality indicator report with user data.” The mobile station (“MS”) or user equipment (“UE”) transmits a “channel quality indicator” (“CQI”) report to the base station. (’239 patent, 1:20-21; 9:30-32) Based upon the quality of channel, the aperiodic CQI may be transmitted from the UE to the base station with or “without multiplexing with user data.”<sup>41</sup> (’239 patent, 10:56-61)

20. The court has provided a construction in quotes for the claim limitations at issue. The parties are expected to present the claim construction consistently with any explanation or clarification herein provided by the court, even if such language is not included within the quotes.

/s/ [Illegible]  
Senior United States District Judge

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<sup>40</sup> Found in ’239 patent, claim 8.

<sup>41</sup> The specification states that “in case a data buffer at the UE is non-empty, user data and CQI are multiplexed with each other.” (’239 patent, 8:43-44 (emphasis added)) “It is desirable to define a control signaling scheme . . . , wherein the [aperiodic CQI] report only contains CQI information, i.e. without multiplexing the CQI information with Uplink Shared Channel data.” (’239 patent, 9:30-34) “One main aspect of the invention is to use a selected transport format for CQI report in a predetermined reporting mode just in selected conditions. More generally, a control channel signal from a base station to a terminal is defined, which comprises a selected transport format, which is to be used by the terminal for user data transmission to the base station.” (’239 patent, 9:49-54 (emphasis added))

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**APPENDIX C**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed January 2, 2019]

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Civ. No. 15-634-JFB

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GODO KAISHA IP BRIDGE 1,

*Plaintiff,*

v.

TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED, A Chinese Corporation, TCT MOBILE  
LIMITED, a Hong Kong Corporation, TCT  
MOBILE (US), INC., A Delaware Corporation, and  
TCT MOBILE, INC., A Delaware Corporation,

*Defendants.*

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**ORDER**

This matter is before the Court on the defendants' motion for judgment as a matter of law on willful infringement (D.I. 469). For reasons stated on the record,

IT IS HEREBY ORDERED AND ADJUDGED that the motion for judgment as a matter of law (D.I. 469) is denied as stated on the record at trial.

DATED this 31st day of December 2018.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge

**APPENDIX D**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed April 26, 2019]

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Civ. No. 15-634-JFB

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GODO KAISHA IP BRIDGE 1,

*Plaintiff,*

v.

TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED, A Chinese Corporation, TCT MOBILE  
LIMITED, a Hong Kong Corporation, TCT MOBILE  
(US), INC., A Delaware Corporation, and  
TCT MOBILE, INC., A Delaware Corporation,

*Defendants.*

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**MEMORANDUM & ORDER**

This matter is before the Court on a motion for post-trial relief filed by plaintiff Godo Kaisha IP Bridge 1 (“IP Bridge”) (D.I. 504). This action was tried to a jury from October 30, 2018, to November 8, 2018, on IP Bridge’s claim that TCL’s accused mobile phone devices infringed claims 9 and 12 of U.S. Patent No. 8,385,239 (“the ’239 patent”) and claims 15 and 16 of U.S. Patent No. 8,351,538 (“the ’538 patent”).

**I. BACKGROUND**

The jury found that TCL infringes all four asserted claims, found all four claims valid, and awarded

damages in the amount of \$950,000 for both patents.<sup>1</sup> D.I. 487, Verdict (sealed) at 4. The jury rejected IP Bridge's willfulness claim. *Id.* at 2.

The parties agree that each of the accused products is capable of connecting to a LTE network in the United States. D.I. 430, PTO, Ex. 1, Joint Statement of Uncontested Facts at 20. Evidence adduced at trial, apparently credited by the jury, established that without practicing the asserted patent claims, an LTE phone will not work. The jury's verdict in favor of IP Bridge reflects a finding that products that are capable of using and communicating over LTE networks infringe the asserted claims because the asserted claims have been found to be essential to mandatory portions of the LTE standard. Thus, the evidence establishes that there is no colorable difference between other TCL LTE products and the accused products as they relate to the patent claims at issue.

The record shows that IP Bridge sought damages in the form of a reasonable royalty based on sales data disclosed during discovery and sought ongoing royalties absent an injunction. The experts expressed opinions on reasonable royalty rates as applied to revenue from infringing sales up to March 31, 2018. The jury was instructed: "[i]f you find that IP Bridge has established infringement, IP Bridge is entitled to at least a reasonable royalty to compensate it for that infringement." D.I. 481, Initial Jury Instructions at 45, Instruction No. 36. The Court further instructed the jury:

A royalty is a payment made to a patent holder in exchange for the right to make, use,

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<sup>1</sup> That figure represents a FRAND royalty rate of four cents per patent per infringing product.

or sell the claimed invention. A reasonable royalty is the amount of royalty payment that a patent holder and the alleged infringer would have agreed to in a hypothetical negotiation taking place at a time prior to when the infringement first began.

*Id.*, Instruction No. 37. The jury was also instructed, in determining damages to consider whether the asserted patent “is a standard essential patent, that is, the LTE wireless communications standard cannot be practiced without infringing the patent.” D.I. 483, closing Jury Instructions at 4, Instruction No. 46. The verdict form asked: “What has IP Bridge proven, by a preponderance of the evidence, to be a fair, reasonable, and non-discriminatory (‘FRAND’) royalty for use of the invention covered by all of the infringed and valid Asserted Patent(s)?” D.I. 512, Verdict at 4. The verdict form, without objection from either party, did not require the jury to determine a per unit royalty rate.

In its motion for post-trial relief, IP Bridge moves to amend the judgment under Federal Rule of Civil Procedure 59(e). IP Bridge seeks: (1) supplemental damages and an accounting of infringing sales of all adjudicated products through the date of the verdict; (2) prejudgment interest calculated at the prime rate, compounded quarterly, and postjudgment interest at the legal rate on sales of adjudicated products;<sup>2</sup> (3) ongoing royalties, at three times the rate found by the jury, for all TCL LTE products, both adjudicated and

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<sup>2</sup> The parties agree that TCL was provided with notice of infringement of the asserted patents later than July 24, 2015 when IP Bridge filed its complaint. D.I. 430, Pretrial Order, Ex. 1, Joint Statement of Uncontested Facts at 3.

non-adjudicated;<sup>3</sup> (4) enhanced (trebled) past damages due to exceptional circumstances including litigation misconduct; and (5) fees and costs to make IP Bridge whole.

IP Bridge argues that it is entitled to supplemental damages to cover sales between the date of the last produced sales data (on which the jury based its determination) and the date of the verdict. It seeks prejudgment interest at the prime rate as a more appropriate measure of the harm it suffered as a result of the infringement. Further, it contends it is entitled to ongoing royalties to account for TCL's continued infringement of the asserted patents for both the adjudicated products and other TCL LTE products.<sup>4</sup> It also argues royalty rate should be trebled with respect to post-verdict damages to account for changed circumstances, TCL's pre-complaint "hold-out," and the ongoing infringement. Also, IP Bridge argues that enhanced (trebled) past damages are warranted, despite the jury's finding of no willful infringement, due to TCL conduct in failing to negotiate a license to SEPs subject to FRAND obligations. Last, IP Bridge contends that the exceptional nature of this case warrants the award of attorneys' fees, and nontaxable costs and expenses under 35 U.S.C. § 285.

In response, TCL concedes that IP Bridge is entitled to post judgment interest at the legal rate under 28 U.S.C. § 1961, but opposes IP Bridge's motion in all

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<sup>3</sup> IP Bridge also asks that the Court award supplemental discovery and an accounting regarding the identity and sales of non-accused LTE products.

<sup>4</sup> Adjudicated products are identified in Exhibit 15 to the Joint Pretrial Order (collectively, the "Accused Products"). D.I. 430-2, Pretrial Order, Ex. 15.

other respects. It challenges IP Bridge's interest arguments, contending that any award of prejudgment interest should use the T-bill rate compounded annually, rather than the prime rate compounded quarterly. It also argues that there is no legal support for ongoing royalties' damages for unadjudicated products or for an award of enhanced damages in the absence of a finding of willful infringement. In its Answering Brief, TCL includes a request for fees and costs for preparing its opposition to IP Bridge's motion, under either 35 U.S.C. § 285 or the Court's inherent authority. D.I. 514, Brief at 20. TCL contends that IP Bridge's motion is "exceptional" because it is meritless and vexatious.

## II. LAW

### A. Standard of review

Federal Rule of Civil Procedure 59(e) expressly recognizes a court's authority to alter or amend its judgments. Fed. R. Civ. P. 59(e). "Consistently with this original understanding, the federal courts generally have invoked Rule 59(e) only to support reconsideration of matters properly encompassed in a decision on the merits[,] and legal issues collateral to the main cause of action. *White v. New Hampshire Dept't of Emp't Sec.*, 455 U.S. 445, 451 (1982). The principal limitation on that discretion is that a motion to amend "may not be granted where to do so would undermine the jury's fact-finding role and trample on the defendant's Seventh Amendment right to a jury trial." *Robinson v. Watts Detective Agency, Inc.*, 685 F.2d 729, 742 (1st Cir. 1982).

Specifically, Rule 59(e) has been invoked to correct damage awards that were improperly calculated, and to include prejudgment interest to which a party was

entitled. See *Lubecki v. Omega Logging, Inc.*, 674 F. Supp. 501 (W.D. Pa. 1987), *aff'd*, 865 F.2d 251 (3d Cir. 1988); 11 Wright and Miller, Federal Practice and Procedure, § 2817 n. 28–29.

The rule governing motions to alter or amend judgment is the proper basis for bringing a request for prejudgment interest. *J.A. McDonald, Inc. v. Waste Sys. Int'l Moretown Landfill, Inc.*, 247 F. Supp. 2d 542, 546 (D. Vt. 2002). The method used to calculate amount of judgment and prejudgment interest involves matters of law and is based on undisputed facts, and therefore is appropriately resolved by way of a motion to amend judgment. *Commercial Assocs. v. Tilcon Gammino, Inc.*, 801 F. Supp. 939, 942 (D. R. I. 1992), *aff'd* 998 F.2d 1092 (1st Cir. 1993).

#### B. Interest

“Prejudgment interest on a damages award for patent infringement ‘is the rule’ under 35 U.S.C. § 284[.]” *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1574 (Fed. Cir. 1996). The purpose of prejudgment interest “to ensure that the patent owner is placed in as good a position as he would have been had the infringer entered into a reasonable royalty agreement.” *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655 (1983). An award of interest from the time that the royalty payments would have been received merely serves to make the patent owner whole, since the damages consist not only of the value of the royalty payments but also of the foregone use of the money between the time of infringement and the date of the judgment. *Id.* at 655-56. “The rate of prejudgment interest and whether it should be compounded or un-compounded are matters left largely to the discretion of the district court” and “must be guided by the purpose of prejudgment interest, which

is to ensure that the patent owner is placed in as good a position as he would have been had the infringer entered into a reasonable royalty agreement.” *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 969 (Fed. Cir. 1986) (internal quotation marks and citations omitted). “Courts have recognized that the prime rate best compensate[s] a patentee for lost revenues during the period of infringement because the prime rate represents the cost of borrowing money, which is ‘a better measure of the harm suffered as a result of the loss of the use of money over time.’” *IMX, Inc. v. LendingTree, LLC*, 469 F. Supp. 2d 203, 227 (D. Del.) *on reconsideration in part*, No. CIV. 03 1067 SLR, 2007 WL 1232184 (D. Del. Apr. 25, 2007) (quoting *Mars, Inc. v. Conlux USA Corp.*, 818 F. Supp. 707, 720–21 (D. Del.), *aff’d*, 16 F.3d 421 (Fed. Cir. 1993); *see also Amgen Inc. v. Hospira, Inc.*, 336 F. Supp. 3d 333, 364 (D. Del. 2018). “[I]t is not necessary that a patentee demonstrate that it borrowed at the prime rate in order to be entitled to prejudgment interest at that rate.” *Uniroyal, Inc. v. Rudkin–Wiley Corp.*, 939 F.2d 1540, 1545 (Fed.Cir.1991) (citation omitted).

Post-judgment interest should accrue at the statutory rate as specified in 28 U.S.C. § 1961(a). *Amgen Inc.*, 336 F. Supp. 3d at 364. Section 1961(a) provides, “Interest shall be allowed on any money judgment in a civil case recovered in a district court. . . . Such interest shall be calculated from the date of the entry of the judgment . . . .” 28 U.S.C. § 1961(a). Section 1961(a) does not provide for interest until a money judgment fixing the amount owed to the prevailing party. *Eaves v. Cty. of Cape May*, 239 F.3d 527, 534 (3d Cir. 2001). “The statute does not, by its terms, mandate that the judgment from which interest is calculated must be a final judgment.” *In re Lower Lake*

*Erie Iron Ore Antitrust Litig.*, 998 F.2d 1144, 1177-78 (3d Cir. 1993); *see also Skretvedt v. E.I. DuPont De Nemours*, 372 F.3d 193, 216 (3d Cir. 2004) (“The fact that the December 13, 2001, judgment was not a final order for purposes of appeal would not otherwise prevent postjudgment interest from running under § 1961 . . .”).

### C. Ongoing Infringement

Under 35 U.S.C. § 284, damages for patent infringement are authorized “[u]pon finding for the claimant” in an amount “adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer[.]” 35 U.S.C. § 284. Patentees are entitled to supplemental damages accounting for any infringing sales that occurred before the verdict but that were not reflected in the last financial discovery produced. *See, e.g., E.I. DuPont de Nemours and Co. v. Unifrax I LLC*, No. 14–1250–RGA, 2017 WL 4004419, \*7-\*8 (D. Del. 2017).

To provide relief against ongoing infringement, a court can consider several remedies: “(1) it can grant an injunction; (2) it can order the parties to attempt to negotiate terms for future use of the invention; (3) it can grant an ongoing royalty; or (4) it can exercise its discretion to conclude that no forward-looking relief is appropriate in the circumstances.” *Whitserve, LLC v. Comput. Packages, Inc.*, 694 F.3d 10, 35 (Fed. Cir. 2012). An ongoing royalty permits an adjudged infringer to continue using a patented invention for a price. *Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1313 n.13 (Fed. Cir. 2007) (defining an ongoing royalty and distinguishing a compulsory license). The Federal Circuit has identified 35 U.S.C. § 283, which authorizes “injunctions in accordance with the

principles of equity,” as statutory authority for awarding ongoing royalties. *See id.* at 1314 (citing § 283 and stating that “[u]nder some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate”). If a permanent injunction is not warranted, courts have the power to assess a reasonable ongoing royalty in light of continued infringement when the parties are unable to negotiate a license regarding the future use of a patented invention. *See Paice*, 504 F.3d at 1315; *see also Bard Peripheral Vascular, Inc. v. WL Gore & Assocs., Inc.*, 670 F.3d 1171, 1192 (Fed. Cir. 2012) (explaining that the “award of an ongoing royalty instead of a permanent injunction to compensate for future infringement is appropriate in some cases”). When a patentee requests running royalty damages, and the jury awards damages through trial, district courts have authority to craft a compulsory ongoing royalty for future sales of products the jury found to infringe. *See Paice*, 504 F.3d at 1315.<sup>5</sup>

The criteria for adjudicating a violation of a prohibition against continued infringement by a party whose products have already been adjudged to be infringing is a matter of Federal Circuit law. *TiVo Inc. v. EchoStar Corp.*, 646 F.3d 869, 881–82 (Fed. Cir. 2011). The inquiry as to whether there “is a fair ground of doubt as to the wrongfulness of the defendant’s conduct” in continued infringement in patent cases is “one of colorable differences between the newly accused product and the adjudged infringing

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<sup>5</sup> Accordingly, while this remedy involves monetary relief, there is no Seventh Amendment right to jury trial for ongoing royalties. *See Paice*, 504 F.3d at 1315-16 (“[T]he fact that monetary relief is at issue in this case does not, standing alone, warrant a jury trial.”).

product.” *Id.* at 882; *see also Abbott Labs. v. TorPharm, Inc.*, 503 F.3d 1372, 1380 n.3 (Fed. Cir. 2007). Thus, the party seeking to enforce an injunction (or obtain ongoing royalties) must prove both that the newly accused product is not more than colorably different from the product found to infringe and that the newly accused product actually infringes. *Id.*; *see also Apple Inc. v. Samsung Elecs. Co.*, No. 12-CV-00630-LHK, 2018 WL 905943, at \*4 (N.D. Cal. Feb. 15, 2018) (applying the injunction standard on continued infringement by newly accused products to ongoing royalties). The Federal Circuit states:

The analysis must focus not on differences between randomly chosen features of the product found to infringe in the earlier infringement trial and the newly accused product, but on those aspects of the accused product that were previously alleged to be, and were a basis for, the prior finding of infringement, and the modified features of the newly accused product. Specifically, one should focus on those elements of the adjudged infringing products that the patentee previously contended, and proved, satisfy specific limitations of the asserted claims. Where one or more of those elements previously found to infringe has been modified, or removed, the court must make an inquiry into whether that modification is significant. If those differences between the old and new elements are significant, the newly accused product as a whole shall be deemed more than colorably different from the adjudged infringing one, and the inquiry into whether the newly accused product actually infringes is irrelevant.

*TiVo Inc.*, 646 F.3d at 881–82. The significance of the differences between the two products is much dependent on the nature of the products at issue. *Id.*

#### D. Enhanced Damages

“[A]n award of enhanced damages requires a showing of willful infringement.” *In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc) (emphasis added); *accord i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 858 (Fed. Cir. 2010). “Awards of enhanced damages” are reserved for “egregious infringement behavior” the Court has “variously described . . . as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or—indeed—characteristic of a pirate.” *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, — U.S. —, —, 136 S. Ct. 1923, 1932 (2016). In other words, reprehensible conduct undertaken with knowledge of its wrongfulness. *See id.* at 1930–32. Willfulness “is a classical jury question of intent. When trial is had to a jury, the issue should be decided by the jury.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1341 (Fed. Cir. 2016).

#### E. Attorney Fees, Expenses and Costs

Section 285 provides, in its entirety, “[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party.” 35 U.S.C. § 285. “When deciding whether to award attorney fees under § 285, a district court engages in a two-step inquiry.” *MarcTec, LLC v. Johnson & Johnson*, 664 F.3d 907, 915 (Fed. Cir. 2012). The court first determines whether the case is exceptional and, if so, whether an award of attorney fees is justified. *Id.* at 915–16. The Supreme Court defines “an ‘exceptional’ case [as] 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.*, 572 U.S. 545, 554 (2014). An “exceptional” case is “‘uncommon,’ ‘rare,’ or ‘not ordinary[.]’” *Id.* at 553. District courts may “consider a ‘nonexclusive’ list of ‘factors,’ including ‘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 554 n.6 (quoting *Fogerty v. Fantasy, Inc.*, 510 U.S. 517, 534 n.19 (1994)).

### III. DISCUSSION

#### A. Supplemental Damages

The Court finds that IP Bridge is entitled to supplemental damages for any infringing sales that occurred before the verdict but were not reflected in the last financial discovery produced on March 31, 2018. The Court will order an accounting of infringing sales of all adjudicated products through the date of verdict.

#### B. Interest

The Court finds that prejudgment interest calculated at the prime rate, compounded quarterly, is an appropriate approximation of the amount necessary to make the patentee whole for infringement of its patents as to the adjudicated products. The parties agree that TCL had notice of infringement no later than July 24, 2015 when IP Bridge filed its complaint, and prejudgment interest should accrue beginning on that date with respect to the accused products.

TCL does not challenge IP Bridge’s request for post-judgment interest. On January 2, 2019, the Court

entered judgment following the jury verdict for IP Bridge and against TCL on the jury's verdict in the amount of \$950,000. D.I. 512, Judgment Following Verdict (incorporating Special Interrogatories). As of that date, there existed a money judgment for IP Bridge that identified the parties for and against whom the judgment was being entered and set out a definite and certain designation of the amount owed. Accordingly, the Court will award IP Bridge post-judgment interest on the \$950,000 damages award beginning on date of entry of that judgment. Prejudgment interest, however, will not have been quantified in a money judgment until the date of the final judgment awarding prejudgment interest and ongoing royalties following this opinion. Accordingly, the Court will award IP Bridge post-judgment interest on the prejudgment interest commencing on the date of entry of a final judgment.

### C. Ongoing Royalties

The Court finds that an award of ongoing royalties to IP Bridge is appropriate. The Court finds, based on the evidence, expert testimony, the parties' arguments, and the jury's damages award, that IP Bridge was meant to recover a running royalty as opposed to a lump-sum, paid-through-expiration license. The Court finds the jury verdict reflects an appropriate determination of the FRAND royalty rate and the Court will not supplant the jury's determination. The Court finds IP Bridge's argument that a post-verdict royalty should be enhanced because there is a difference between a hypothetical negotiation at the time of infringement and a hypothetical negotiation once validity and infringement have been determined has less force in the context of a standard essential patent. A SEP patent must be licensed at a fair,

reasonable, and nondiscriminatory rate. The jury determined that rate. There is no reason for the Court to choose a royalty rate higher than the jury's rate. Although IP Bridge seeks royalties at three times the rate found by the jury, the court finds the rate established by the jury verdict is the appropriate measure.

Accordingly, the Court finds IP Bridge shall recover a reasonable royalty in the amount of four cents per unit per patent on adjudicated products from and after March 31, 2018. The Court also finds that, going forward, royalties for unadjudicated products—any LTE products TCL sells—should be awarded. The record establishes that there is no colorable difference between the accused products and products that are able to use and communicate over LTE networks. The evidence adduced at trial shows that LTE phones do not operate on the LTE network without infringing the asserted claims. The jury determined that the asserted claims were standard essential patent claims.

IP Bridge contends that TCL has released numerous LTE products beyond those adjudicated at trial. D.I. 506-4, Ex. 6, excerpts and product manuals downloaded from publicly available websites, including TCL's website. TCL has not responded to the merits of that factual contention, it argues only that the court lacks authority to impose an ongoing royalty on unadjudicated products. Because IP Bridge showed at trial that the asserted claims are standard essential patents and any LTE products would necessarily infringe the asserted patent claims, the Court finds that TCL's other LTE products are not colorably different than the accused products. The Court finds that TCL's other LTE products infringe IP Bridge's

patent claims in the same way the accused products do.

IP Bridge would ordinarily be entitled to an injunction against continued infringement. Because an injunction is not generally appropriate in an action involving a SEP, the patentee is instead entitled to an ongoing royalty. The Court will award an accounting of and an ongoing royalty for non-adjudicated TCL LTE products sold after November 21, 2017 (the date of IP Bridge's final identification of accused products). D.I. 506-5, Ex. 8, Identification of Accused Products.

#### D. Enhanced (trebled) Past Damages

The jury found no willful infringement and the Court will abide by that determination. IP Bridge's allegations of "hold out" and TCL's supposedly being an "unwilling licensee" have no relevance in view of the jury's verdict. As the Court pointed out at the close of evidence, IP Bridge's "unwilling licensee" theory was part and parcel of its willfulness claim. The Court also rejects IP Bridge's theory that TCL's "patent hold-out" conduct and its litigation conduct demonstrate bad faith or flagrant conduct warranting enhanced damages, notwithstanding the jury's determination. The jury heard essentially the same evidence that IP Bridge relies on in support of its position. The Court sees no reason to disturb the jury's finding that TCL's infringement was not willful.

The Court agrees with TCL that nothing about this case "stands out from others" as to either the strength of IP Bridge's claims or the manner in which the case was litigated. IP Bridge sought, but failed, to prove willful infringement. It recovered far less in damages than it sought. IP Bridge is now constrained by the consequences of its litigation strategies. The jury was

presented with opposing expert opinions and chose one over the other.

E. Attorney Fees and Nontaxable Costs and Expenses

With respect to IP Bridge's motion for an award of attorney fees and related nontaxable costs and expenses, the Court finds that this is not a case so exceptional as to justify an award of such fees and expenses under 35 U.S.C. § 285. Although this patent case was hotly contested and involved numerous disputes between the parties, the record does not show that the either party adopted unreasonable or frivolous litigation positions, litigated in an unreasonable manner, or acted in bad faith. Such zealous representation is the rule, not the exception, in most patent cases.

Similarly, the Court will deny TCL's corresponding request for reimbursement of its fees and expenses for responding to IP Bridge's motion. The Court largely resolved the post-trial motions in IP Bridge's favor. IP Bridge is the prevailing party and TCL has not shown that IP Bridge's litigation tactics have been frivolous or vexatious.

IT IS ORDERED:

1. The plaintiff's motion for post-trial relief is granted in part and denied in part as set forth in this Memorandum and Order.
2. The plaintiff's motion is denied with respect to enhanced damages, attorney fees, and nontaxable costs and expenses.
3. The defendant shall provide an accounting of infringing sales of all adjudicated products from

March 31, 2018, through the date of verdict to the plaintiff within three weeks of the date of this order.

4. The defendant shall identify all non-accused LTE products to plaintiff and provide an accounting of all infringing sales of non-accused LTE products from and after November 21, 2017, to the plaintiff within four weeks of the date of this order.

5. The plaintiff shall recover prejudgment interest, calculated at the prime rate, compounded quarterly, on the amount of \$950,000.00 from and after July 24, 2015, to January 2, 2019.

6. The plaintiff shall recover postjudgment interest at the legal rate on the amount of \$950,000 from and after January 2, 2019 until such judgment is paid.

7. The plaintiff shall recover postjudgment interest at the legal rate on the amount of prejudgment interest recovered from the defendant from and after the date a final judgment is entered.

8. The plaintiff shall recover ongoing royalties at the rate of four cents per unit per patent for products adjudicated to infringe the '239 patent and the '538 patent from January 2, 2019, to expiration of the patent.

9. The plaintiff shall recover ongoing royalties at the rate of four cents per unit per patent for LTE products not colorably different from the adjudicated products from this date to expiration of the '239 and '538 patents.

10. The parties shall submit final accountings and proposed final judgment orders to the Court within two months of the date of this order.

11. TCL's Request for Fees and Costs for Responding to IP Bridge's Motion (D.I. 504) is denied.

48a

DATED this 24th day of April, 2019.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge

**APPENDIX E**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed April 26, 2019]

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Civ. No. 15-634-JFB

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GODO KAISHA IP BRIDGE 1,

*Plaintiff,*

v.

TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED, A Chinese Corporation, TCT MOBILE  
LIMITED, a Hong Kong Corporation, TCT MOBILE  
(US), INC., A Delaware Corporation, and TCT  
MOBILE, INC., A Delaware Corporation,

*Defendants.*

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**MEMORANDUM & ORDER**

This matter is before the Court on a motion for judgment as a matter of law filed by defendants TCL Communication Technology Holdings Limited, TCT Mobile (US), Inc., TCT Mobile Limited, and TCT Mobile, Inc. (collectively, “TCL”) (D.I. 502).<sup>1</sup>

**I. BACKGROUND**

TCL renews its motion for judgment as a matter of law (JMOL) of noninfringement and invalidity under Federal Rule of Civil Procedure 50(b). This action

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<sup>1</sup> The parties request oral argument on the motion (D.I. 524 and 525), but the Court finds it is not necessary.

was tried to a jury from October 30, 2018, to November 8, 2018, on IP Bridge’s claim that TCL’s accused mobile phone devices infringed claims 9 and 12 of U.S. Patent No. 8,385,239 (“the ’239 patent”) and claims 15 and 16 of U.S. Patent No. 8,351,538 (“the ’538 patent”). The jury found that TCL infringes all four asserted claims, found all four claims valid, and awarded damages in the amount of \$950,000 for both patents. D.I. 487, Jury Verdict (sealed).

TCL first argues that a judgment of non-infringement should be granted under Rule 50(b). It contends that IP Bridge failed to prove that each and every one of the requirements of the asserted claims were met by the accused products and argues that that the narrow exception to the requirements for proving infringement carved out in *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321 (Fed. Cir. 2010), does not apply here.<sup>2</sup> It argues that IP Bridge showed merely that the asserted claims were essential to the LTE standard, which was never contested. It relies on the testimony of IP Bridge’s expert, Dr. Paul Min, contending that he stated that an express limitation of the claims was not really required. For the ’538 patent, it points to Dr. Min’s testimony that there must be code somewhere that met the limitation in question (the “orthogonal-

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<sup>2</sup> In *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321, 1327 (Fed. Cir. 2010), the Federal Circuit court of Appeals found that

if an accused product operates in accordance with a standard, then comparing the claims to that standard is the same as comparing the claims to the accused product . . . . An accused infringer is free to either prove that the claims do not cover all implementations of the standard or to prove that it does not practice the standard.

*Id.*

ity” limitation) and his purported failure to identify the limitation. TCL contends Dr. Min’s analysis was insufficient as a matter of law to prove literal infringement and because IP Bridge’s showing of literal infringement was based only on Dr. Min’s analysis, the jury’s literal infringement finding verdict should be set aside and judgment should be entered in TCL’s favor.

TCL also contends that it is entitled to a judgment of invalidity of the ’239 patent, arguing it proved by clear and convincing evidence that the asserted claims were obvious. It argues that IP Bridge’s arguments as to the non-obviousness of the ’538 patent lack merit. TCL contends that its expert’s testimony regarding the scope and content of the prior art; the differences between the claimed invention and the prior art; and the level of ordinary skill in the art were unrebutted by IP Bridge and it further contends IP Bridge provided no evidence of any secondary considerations (or objective indicia) of non-obviousness. Instead, it argues that IP Bridge’s arguments are insufficient as a matter of law to defeat the TCL’s asserted combinations and contends a judgment of invalidity as a matter of law should be entered in TCL’s favor.

In opposition, IP Bridge argues that the jury’s findings are supported by sufficient evidence.

## II. LAW

### A. Standard of Review

The law of the regional circuit—here the Third Circuit—governs the standards for deciding motions for JMOL under Fed. R. Civ. P. 50(b) and new trial under Fed. R. Civ. P. 59(a). *See WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1325 (Fed. Cir. 2016); *Leader Techs., Inc. v. Facebook, Inc.*, 678 F.3d 1300, 1305

(Fed. Cir. 2012). Under Rule 50(b), in ruling on a renewed motion, “the court may: (1) allow judgment on the verdict, if the jury returned a verdict; (2) order a new trial; or (3) direct the entry of judgment as a matter of law.” Fed. R. Civ. P. 50(b). A judgment as a matter of law is appropriate when “the verdict is not supported by legally sufficient evidence.” *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993). In the Third Circuit, a “court may grant a judgment as a matter of law contrary to the verdict only if ‘the record is critically deficient of the minimum quantum of evidence’ to sustain the verdict.” *Acumed LLC v. Advanced Surgical Servs., Inc.*, 561 F.3d 199, 211 (3d Cir. 2009) (quoting *Gomez v. Allegheny Health Servs., Inc.*, 71 F.3d 1079, 1083 (3d Cir.1995)).

“In considering that issue the court ‘may not weigh the evidence, determine the credibility of witnesses, or substitute its version of the facts for the jury’s version.’” *Id.* (quoting *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir.1993)). “Entry of judgment as a matter of law is a ‘sparingly’ invoked remedy, granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the 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) (citation omitted). A renewed post-verdict JMOL motion under Federal Rule of Civil Procedure Rule 50(b) “may not be made on grounds not included in the earlier [Rule 50(a)] motion.” *Duro-Last, Inc. v. Custom Seal, Inc.*, 321 F.3d 1098, 1105 (Fed. Cir. 2003).

## B. Infringement

To prove literal infringement, a patent owner must prove that every element of the claim is present in the

accused device. *Warner-Jenkinson v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997). “If an accused product operates in accordance with a standard, then comparing the claims to that standard is the same as comparing the claims to the accused product.” *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d at 327. “An accused infringer is free to either prove that the claims do not cover all implementations of the standard or to prove that it does not practice the standard.” *Id.* However, if the relevant section of the standard is optional rather than mandatory, it would not be sufficient for the patent owner to establish infringement by arguing that the product admittedly practices the standard. *Id.*

### C. Invalidity — Obviousness

To be patent-eligible, an invention must not have been obvious to a skilled artisan at the time of invention. See 35 U.S.C. § 103. “Whether a patent is invalid as obvious is ultimately a determination of law based on underlying determinations of fact.” *Geo. M. Martin Co. v. All. Mach. Sys. Int’l LLC*, 618 F.3d 1294, 1300 (Fed. Cir. 2010). A legal determination of obviousness must be based on four factual inquiries: “1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the claimed invention and the prior art; and 4) secondary considerations of nonobviousness[.]” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 662–63 (Fed. Cir. 2000). “[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Rather, “[a] party seeking to invalidate a patent on obviousness grounds must demonstrate by clear and convincing evidence that a skilled artisan would have

been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1347 (Fed. Cir. 2014). This analysis, known as the “teaching, suggestion, or motivation” test, must be “expansive and flexible,” and not “rigid.” *KSR*, 550 U.S. at 407.

### III. DISCUSSION

#### A. Infringement

The Court has reviewed the evidence submitted in support of and opposition to the motion (D.I. 506, 515, 522, and 523 (sealed)). The Court agrees with IP Bridge that substantial evidence supports the jury’s finding that the TCL infringes the asserted claims of the patents at issue. The jury was instructed that to recover on its claim of direct infringement by literal infringement,

IP Bridge must prove by a preponderance of the evidence that TCL made, used, sold, offered for sale within, or imported into the United States a product that meets all of the requirements of the invention defined in a claim and did so without the permission of IP Bridge during the time the ’239 and/or the ’538 patent was in force.

You must compare the Accused Products with each and every one of the requirements of a claim to determine whether the requirements of that claim are met. You must determine whether or not there is infringement separately for each asserted claim.

D.I. 481, Initial Jury Instructions, Instruction No. 19.

The jury's verdict is supported by the testimony of the plaintiff's expert, Dr. Min, record evidence, and the concessions and admissions of the defendant's expert, Dr. Wicker. At trial, Dr. Min testified that: (1) the asserted claims are essential to mandatory (not optional) functionality of the LTE standard (i.e., functionality that must be performed by any device that complies with the LTE standard); and (2) the accused products comply with the LTE standard. TCL did not present evidence to counter that showing. Dr. Min identified mandatory requirements of the LTE standard and explained how the mandatory portions relate to and practice the elements of the asserted claims. In essence, he testified that if functionality is mandatory, a device that is capable of connecting to an LTE network must have that functionality and explained that there is no way to implement the LTE standard without practicing each of the asserted claims. He stated that he analyzed extensive TCL documents, including user manuals, compliance matrices, certificates of compliance, and source code, to determine that the accused products practice the LTE standard.

Also, IP Bridge did not merely present evidence of infringement based on the LTE standard under *Fujitsu*, Dr. Min also testified that he analyzed the source code and confirmed that the accused products operate consistently with the relevant portions of the LTE standard, and thus infringe. TCL's focus on isolated testimony from Dr. Wicker that arguably favors its position on noninfringement is misplaced. Questions from the jury show that it considered Dr. Wicker's opinion and considered dependent as well as independent claims. D.I. 484, 485, and 486, Jury Questions. The jury was entitled to credit Dr. Min's testimony and—as it did—to reject Dr. Wicker's opin-

ion. That there is some evidence of record that may support TCL's position is not sufficient to overturn a jury's verdict.

With respect to the '239 patent, Dr. Min proffered evidence that the accused products practice the "multiplexing mode" limitation of the asserted claims. Dr. Min also testified that the accused products meet the "orthogonal sequences" limitation of the '538 patent (i.e., that the spreading orthogonal sequences are selected "from a plurality of orthogonal sequences"). Dr. Wicker did not dispute that testimony.

TCL's reliance on testimony from Dr. Wicker and a Qualcomm engineer that purportedly shows that the source code stores 0s and 1s, rather than the 1s and -1s required by the LTE standard, is also misplaced. The jury obviously credited Dr. Min's testimony that in order to function on an LTE network, the accused products—indeed, all LTE devices—are required to use 1s and -1s.

The Court declines to supplant the jury's determinations of credibility. Accordingly, the Court finds TCL has not shown that there is insufficient evidence to support the jury's finding that TCL infringed the asserted claims of the asserted patents.

#### B. Invalidity

Further, the Court finds that TCL has not shown that it is entitled to judgment as a matter of law on invalidity. The jury was instructed that in order to find invalidity by obviousness, it must find that TCL established, by clear and convincing evidence that "that the claimed invention would have been obvious to persons having ordinary skill in the art at the time the invention was made" and that "obviousness may be shown by considering one or more than one item of

prior art.” D.I. 481, Jury Instructions, Instruction No. 28. The jury was also instructed to consider the following factors to determine whether TCL had established that the claimed invention was obvious:

1. the scope and content of the prior art relied upon by TCL;
2. the difference or differences, if any, between each claim of the Asserted Patents that TCL contends is obvious and the prior art;
3. the level of ordinary skill in the art at the time the invention of the Asserted Patents was made; and
4. additional considerations, known as objective indicators, if any, that indicate that the invention was obvious or not obvious.

*Id.* Further, the Court instructed the jury to perform a separate analysis for each of the claims. *Id.*

The record shows there were several independent grounds on which a reasonable jury could have based its determination that TCL failed to meet its heavy burden of proving by clear and convincing evidence that the asserted claims are obvious. Based on the evidence adduced at trial, a reasonable jury could have concluded either: (1) that TCL had not shown that Kim '168 is prior art to the '239 patent;<sup>3</sup> (2) that TCL

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<sup>3</sup> For Kim '168 to be prior art to the '239 patent, TCL was required to show that Kim '168 is entitled to the February 3, 2008 priority date of its provisional application (“Kim '808 provisional”), which comes before the priority date of the '239 patent. To do that, it had to show that the claims of Kim '168 are supported by the Kim '808 provisional application and the portions of Kim '168 relied upon by TCL for invalidity are supported by the Kim '808 provisional application. *See Dynamic*

had not shown that a person of ordinary skill in the art would have been motivated to combine Kim '168 and Kim '201; or (3) that TCL had not shown that the combination of Kim '168 and Kim '201 would render all the limitations of the '239 patent asserted claims obvious. Dr. Min testified that neither the claims of Kim '168 nor the portions of Kim '168 relied on by TCL for invalidity are supported by the Kim '808 provisional application, and thus Kim '168 is not prior art. Although Dr. Wicker testified at trial that a person of ordinary skill in the art would have been motivated to combine prior art shown in the Kim '168 and Kim '201 references, that testimony is controverted by Dr. Min. In rebuttal, Dr. Min took the position that, because the inventors of the Kim patent references filed two separate patent applications, as opposed to a single combined patent application, a person of ordinary skill in the art would not have been motivated to combine the Kim patent references. Dr. Min testified that a person of ordinary skill in the art would not have been motivated to combine Kim '168 and Kim '201 in view of their fundamentally different approaches to sending CQL. The jury obviously credited Dr. Min's, as it was entitled to do.

Similarly, there were independent grounds for the jury's determination that TCL failed to prove by clear and convincing evidence that the asserted claims of the '538 were obvious based on the combination of prior art references relied on by TCL. Although Dr. Wicker testified that 3GPP TSG RAN WG1 #49 R1-072857 ("the first Texas Instruments paper"), 3GPP TSG RAN WG1 #49 R1-072212 ("the second Texas Instruments paper"), and U.S. Patent No. 8,005,153

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*Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1376, 1381 (Fed. Cir. 2015).

(“Muharemovic”), in combination, disclosed every element of the asserted claims of the ’538 patent, the jury was free to reject that testimony. The jury could credit the testimony of Dr. Min that the references did not disclose elements of the asserted claims and that a person of ordinary skill in the art would not have been motivated to combine the prior art references. Again, the jury was free to credit IP Bridge’s evidence over that presented by TCL.

Again, the Court will not the jury’s credibility determinations. TCL has not shown that it is entitled to a judgment of invalidity. The record supports the jury’s conclusion that TCL did not prove by clear and convincing evidence that the asserted claims of the asserted patents are invalid. Accordingly,

IT IS ORDERED that:

1. The defendants’ motion for judgment as a matter of law (D.I. 502) is denied.
2. A final judgment on the verdict will be entered.

Dated this 24th day of April, 2019.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge

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**APPENDIX F**

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

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2019-2215

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GODO KAISHA IP BRIDGE 1,  
*Plaintiff-Appellee,*  
v.

TCL COMMUNICATION TECHNOLOGY  
HOLDINGS LIMITED, TCT MOBILE LIMITED,  
TCT MOBILE (US) INC., TCT MOBILE, INC.,  
*Defendants-Appellants.*

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Appeal from the United States District Court for the  
District of Delaware in No. 1:15-cv-00634-JFB-SRF,  
Senior Judge Joseph F. Bataillon.

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Decided: August 4, 2020

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KEVIN JOHN POST, Ropes & Gray LLP, New York, NY,  
argued for plaintiff-appellee. Also represented by  
ALEXANDER E. MIDDLETON, STEVEN PEPE; DOUGLAS  
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JOHN NILSSON, Arnold & Porter Kaye Scholer LLP,  
Washington, DC, argued for defendants-appellants.  
Also represented by NICHOLAS M. NYEMAH, ANDREW  
TUTT.

Before PROST, *Chief Judge*, NEWMAN and O'MALLEY,  
*Circuit Judges*.

O'MALLEY, *Circuit Judge*.

In this appeal, the parties dispute whether the patentee was permitted to prove that the Appellants' products infringed the claims of the asserted patent by showing that: (1) the patent claims are essential to mandatory aspects of the Long-Term Evolution ("LTE") standard; and (2) the accused products practice that standard. Appellants assert that, if Appellee wanted to resort to that theory of infringement, it was required to ask the court to decide the question of the claims' essentiality to the standard in the claim construction context and that the court needed to decide that question as a matter of law. Unsurprisingly, Appellee disagrees. We find no error in the submission of these questions to the jury in the context of an infringement trial.

#### BACKGROUND

This appeal arises from a patent infringement action filed in the United States District Court for the District of Delaware. Patent Owner Godo Kaisha IP Bridge 1 ("IP Bridge") sued TCL Communication Technology Holdings Limited, TCT Mobile Limited, TCT Mobile (US) Inc., and TCT Mobile, Inc. (collectively, "TCL"), alleging infringement of U.S. Patent Nos. 8,385,239 and 8,351,538.

The district court held a jury trial in 2018. At trial, IP Bridge's theory of infringement hinged on what it told the jury were two "bedrock facts": that the patents-in-suit are essential to the LTE standard and that TCL's accused devices are LTE-compatible. Relying on *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321 (Fed. Cir. 2010) (holding, on appeal from a summary

judgment decision, that a district court may rely on an industry standard in analyzing infringement), IP Bridge put forth evidence to demonstrate that (1) the asserted claims are essential to mandatory sections of the LTE standard; and (2) the accused products comply with the LTE standard. *Godo Kaisha IP Bridge 1 v. TCL Commc'n Tech. Holdings Ltd.*, No. CV 15-634-JFB, 2019 WL 1879984, at \*3 (D. Del. Apr. 26, 2019) (“*Infringement Op.*”). As the district court pointed out, TCL did not present any evidence to counter that showing. *Id.*

After a seven-day jury trial, the jury found that TCL was liable for infringement of the asserted claims by its sale of LTE standard-compliant devices such as mobile phones and tablets. The jury also awarded IP Bridge damages in the amount of \$950,000. *Godo Kaisha IP Bridge 1 v. TCL Commc'n Tech. Holdings Ltd.*, No. CV 15-634-JFB, 2019 WL 1877189, at \*1 (D. Del. Apr. 26, 2019) (“*Damages Op.*”). Following the verdict, both parties filed motions for post-trial relief.

In its motion for judgment as a matter of law (“JMOL”), TCL contended that IP Bridge’s theory of infringement was flawed because the *Fujitsu* “narrow exception” to proving infringement in the standard way—*i.e.*, by showing that each element in the asserted claim is present in the accused devices—should not apply in this case. *Infringement Op.* at \*1. Specifically, TCL argued that IP Bridge could not rely on the methodology approved in *Fujitsu* because *Fujitsu* only approved that methodology in circumstances where the patent owner asks the district court to assess essentiality in the context of construing the claims of the asserted patents. The district court did not accept TCL’s argument that IP Bridge’s theory of infringement was legally flawed. It denied TCL’s

motion, concluding that substantial evidence supported the jury's infringement verdict. *Id.* at \*3–4.

IP Bridge also sought post-trial relief in the context of a motion to amend the judgment under Federal Rule of Civil Procedure 59(e). IP Bridge sought supplemental damages and an accounting of infringing sales of all adjudicated products through the date of the verdict, and ongoing royalties for TCL's LTE standard-compliant products, "both adjudicated and non-adjudicated." *Damages Op.* at \*2. The court awarded the requested pre-verdict supplemental damages. It also found that the jury's award represented a FRAND royalty rate of \$0.04 per patent per infringing product and awarded on-going royalties in that amount for both the adjudicated products and certain unadjudicated products. It reasoned that, because IP Bridge demonstrated at trial that LTE standard-compliant devices do not operate on the LTE network without infringing the asserted claims, the unaccused, unadjudicated products "are not colorably different than the accused products." *Id.* at \*6. TCL timely appealed the court's infringement finding and its rulings regarding royalties. We affirm all of the court's rulings and the verdict predicated thereon. We write only to address—and refute—TCL's contention that whether a patent is essential to any standard established by a standard setting organization is a question of law to be resolved in the context of claim construction.

#### DISCUSSION

We review a denial of JMOL under the law of the regional circuit. *Energy Transp. Grp., Inc. v. William Demant Holding A/S*, 697 F.3d 1342, 1350 (Fed. Cir. 2012). "In the Third Circuit, review of denial of JMOL is plenary." *Finjan, Inc. v. Secure Computing Corp.*,

626 F.3d 1197, 1202 (Fed. Cir. 2010) (citations omitted). JMOL is “‘granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find’ for the nonmovant.” *TransWeb, LLC v. 3M Innovative Props. Co.*, 812 F.3d 1295, 1301 (Fed. Cir. 2016) (quoting *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993)). Infringement is a question of fact, “reviewed for substantial evidence when tried to a jury.” *ACCO Brands, Inc. v. ABA Locks Mfrs. Co.*, 501 F.3d 1307, 1311 (Fed. Cir. 2007). A factual finding is supported by substantial evidence if a reasonable jury could have found in favor of the prevailing party in light of the evidence presented at trial. *See Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1357–58 (Fed. Cir. 1999).

In cases involving standard essential patents, we have endorsed standard compliance as a way of proving infringement. *See, e.g., Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014) (because a “standard *requires* that devices utilize specific technology, compliant devices *necessarily* infringe certain claims . . . cover[ing] technology incorporated into the standard”); *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263 (Fed. Cir. 2004) (affirming non-infringement judgment because patentee did not show that a particular claim limitation was mandatory in the standard). This appeal presents a question not expressly answered by our case law: who determines the standard-essentiality of the patent claims at issue—the court, as part of claim construction, or the jury, as part of its infringement analysis?

On appeal, as it did before the district court, TCL argues that IP Bridge’s theory of infringement relied on an improper reading of our decision in *Fujitsu*. TCL states that, to establish literal infringement, a patentee must demonstrate that every limitation set forth in a claim is present in the accused product. In TCL’s view, *Fujitsu* carved out a narrow exception to this requirement by stating that “[i]f a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement.” TCL Br. 31–32 (quoting *Fujitsu*, 620 F.3d at 1327). TCL argues that, under *Fujitsu*, the court must first make a threshold determination *as part of claim construction* that all implementations of a standard infringe the claims. It argues that IP Bridge never asked the district court to conduct such an analysis and the question should not have gone to the jury.

IP Bridge responds that standard-essentiality is a classic fact issue, and is the province of the factfinder. IP Bridge Br. 27. In IP Bridge’s view, *Fujitsu* does not stand for the proposition that the determination of standard-essentiality must occur in the context of claim construction. IP Bridge asks us to read *Fujitsu* in the context of its procedural posture—*Fujitsu* involved an appeal from summary judgment and there was no involvement of a jury for that reason. We agree with IP Bridge that standard-essentiality is a question for the factfinder.

In *Fujitsu* the appellant asked us to find no evidence of direct infringement because the district court relied on the standard, rather than the accused products, in assessing infringement. We rejected the appellant’s demand for a rule “precluding the use of industry standards in assessing infringement.” *Fujitsu*, 620

F.3d at 1326. The holding of *Fujitsu*, in its proper context, is illuminating:

We hold that a district court may rely on an industry standard in analyzing infringement. If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement. We agree that claims should be compared to the accused product to determine infringement. However, if an accused product operates in accordance with a standard, then comparing the claims to that standard is the same as comparing the claims to the accused product. We accepted this approach in *Dynacore* where the court held a claim not infringed by comparing it to an industry standard rather than an accused product. An accused infringer is free to *either prove* that the claims do not cover all implementations of the standard *or to prove* that it does not practice the standard.

*Id.* at 1327 (emphasis added). We recognized in *Fujitsu* that the fact that a patent's claims cover an industry standard does not necessarily establish that all standard-compliant devices implement the standard in the same way. And we noted that an asserted patent claim might not cover all implementations of an industry standard. In such cases, we guided, infringement *must* be proven by comparing the claims to the accused products, or by proving that the accused devices "implement any relevant optional sections of the standard." *Id.* at 1328. Thus, *Fujitsu* teaches that where, but only where, a patent covers mandatory

aspects of a standard, is it enough to prove infringement by showing standard compliance.

TCL's entire appeal rests on its misreading of a single statement from *Fujitsu*. *See id.* at 1327 (“If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement.”). But we did not say in *Fujitsu* that a district court must first determine, as a matter of law and as part of claim construction, that the scope of the claims includes any device that practices the standard at issue. To the contrary, in reviewing the district court's summary judgment decision (where no facts were genuinely in dispute), we stated that, if a district court *finds* that the claims cover any device that practices a standard, then comparing the claims to that standard is the same as the traditional infringement analysis of comparing the claims to the accused product. That statement assumed the absence of genuine disputes of fact on the two steps of that analysis, which would be necessary to resolve the question at the summary judgment stage. The passing reference in *Fujitsu* to claim construction is simply a recognition of the fact that the first step in any infringement analysis is claim construction.

Our reading of *Fujitsu* is buttressed by that decision's reference to *Dynacore*. There, too, we reviewed a decision stemming from a summary judgment motion. We affirmed the judgment of non-infringement because the patentee did not show that a particular claim limitation was mandatory in the standard. *Dynacore*, 363 F.3d at 1278. We also noted the district court's finding that the patentee's experts “contribute[d] little other than a conclusory opinion,” failing to raise a dispute over material facts for trial. *Id.* at

1277–78.<sup>1</sup> Although we referenced the claim construction by which the patentee was bound, *Dynacore* considered the possibility of the dispute going to the jury and rejected it based on undisputed facts. Thus, under *Dynacore*, which *Fujitsu* referenced in its holding, standard-essentiality of patent claims is a fact issue. Like any other fact issue, it may be amenable to resolution on summary judgment in appropriate cases. But that does not mean it becomes a question of law.

Determining standard-essentiality of patent claims during claim construction, moreover, hardly makes sense from a practical point of view. Essentiality is, after all, a fact question about whether the claim elements read onto mandatory portions of a standard that standard-compliant devices must incorporate. This inquiry is more akin to an infringement analysis (comparing claim elements to an accused product) than to a claim construction analysis (focusing, to a large degree, on intrinsic evidence and saying what the claims mean). As we explained in *Fujitsu*, one way an accused infringer can successfully defeat allegations of infringement in the standard essential patent context, is by rebutting a patentee’s assertion that its patents are essential to the standard. 620 F.3d at 1327. This statement would make no sense if claim construction were sufficient to resolve the question.

Accordingly, we reject TCL’s reading of *Fujitsu*. Where, as here, there are material disputes of fact regarding whether asserted claims are in fact essential to all implementations of an industry standard,

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<sup>1</sup> Here, by contrast, IP Bridge’s expert testified at length about how each claim limitation is present in mandatory portions of the LTE standard and how TCL’s LTE standard-compliant devices practice mandatory portions of the standard.

the question of essentiality must be resolved by the trier of fact in the context of an infringement trial. Viewed through this lens, we find that substantial evidence fully supports the jury's infringement verdict.<sup>2</sup>

### CONCLUSION

We have carefully considered TCL's remaining arguments—including its argument that the district court abused its discretion in awarding on-going royalties in this case. We see no reason to disturb the district court's conclusions. Accordingly, we affirm.

**AFFIRMED.**

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<sup>2</sup> TCL's own documents and marketing materials make clear that its products are standard-compliant—a conclusion TCL does not refute on appeal. And the jury was free to credit IP Bridge's substantial expert evidence that IP Bridge's patent claims are essential to mandatory portions of the standard.

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**APPENDIX G**

NOTE: This order is nonprecedential.

UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

[Filed: December 4, 2020]

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2019-2215

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GODO KAISHA IP BRIDGE 1,  
*Plaintiff-Appellee,*  
v.

TCL COMMUNICATION TECHNOLOGY  
HOLDINGS LIMITED, TCT MOBILE LIMITED,  
TCT MOBILE (US) INC., TCT MOBILE, INC.,  
*Defendants-Appellants.*

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Appeal from the United States District Court for the  
District of Delaware in No. 1:15-cv-00634-JFB-SRF,  
Senior Judge Joseph F. Bataillon.

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ON PETITION FOR REHEARING EN BANC

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK,  
MOORE, O'MALLEY, REYNA, WALLACH, TARANTO, CHEN,  
HUGHES, and STOLL, *Circuit Judges*.

PER CURIAM.

ORDER

Appellants TCL Communication Technology Hold-  
ings Limited, TCT Mobile (US) Inc., TCT Mobile  
Limited and TCT Mobile, Inc. filed a petition for

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rehearing en banc. A response to the petition was invited by the court and filed by Appellee Godo Kaisha IP Bridge 1. The petition was first referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied. The petition for rehearing en banc is denied.

The mandate of the court will issue on December 11, 2020.

FOR THE COURT

December 4, 2020

Date

/s/ Peter R. Marksteiner

Peter R. Marksteiner  
Clerk of Court

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**APPENDIX H**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

[Filed November 6, 2018]

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C.A. No. 1:15-cv-634-JFB-SRF

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GODO KAISHA IP BRIDGE 1, *a Japanese Corporation,*  
*Plaintiff,*

v.

TCL COMMUNICATION TECHNOLOGY  
HOLDINGS LIMITED, *a Chinese corporation,*  
TCT MOBILE LIMITED, *a Hong Kong corporation,*  
TCT MOBILE (US), Inc., *a Delaware corporation,* AND  
TCT MOBILE, INC., *a Delaware Corporation,*  
*Defendants.*

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DEFENDANTS' BENCH BRIEF  
REGARDING JURY INSTRUCTIONS ON  
DIRECT INFRINGEMENT

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*Counsel for Defendants TCL Communication Technology Holdings Limited, TCT Mobile Limited, TCT Mobile (US), Inc., and TCT Mobile, Inc.*

Dated: November 6, 2018

The fragments of the transcript that IP Bridge cites to suggest that TCL went back on a pledge to the Court are misleading, to say the least. The parties were debating the preliminary instruction on direct infringement, which IP Bridge had objected to as omitting discussion of *Fujitsu Ltd. v. Netgear, Inc.*, 620 F.3d 1321 (Fed. Cir. 2010). The Court made a decision to maintain its preliminary instruction on direct infringement, which omitted discussion of *Fujitsu*, explaining, “I think that the Federal Circuit Bar Association and the AIPLA is probably more articulate than I on jury instructions, but I’m willing to revisit this issue foreclosing instructions, so I’m going to overrule your objection.” 328:9-13. In response, Mr. Batchelder protested that “what I don’t want to see in the opening from the defendant is them saying, Batchelder just presented this theory of standards

based infringement, but the Court just told you that he was wrong because the law is you must compare the accused products with the claims directly, so if you are going to reserve that issue, we can't have that argument." 331:18-24. It was in the context of predicting the Court's final instructions on this issue that Mr. Nilsson "I certainly am not going to refer to the Court jury instruction, but I am going to say to prove literal infringement, you need to compare the claim language to what you're accusing, because that's what the law is." 330:1-5. Then the Court stated clearly, "[s]o you're both going to get to argue your heads on it and eventually I'm going to do the law. If I do the law differently than what you cited, I'm sure it will come back to haunt you. But if I do exactly what your side says, you can say, see, I told you so. So right now, that's where we are." (331:4-9 (emphasis added).) Out of concern that this is about to occur, IP Bridge distorts the record.

The Court's instruction on Direct Infringement, Jury Instruction No. 19, appropriately requires the jury to "compare the Accused Products with each and every one of the requirements of a claim" to determine if IP Bridge has met its burden to prove direct infringement. IP Bridge bears the burden of showing that each limitation of the asserted claims' limitations is found literally in the accused products. The Federal Circuit's decision in *Fujitsu* did not overrule this fundamental tenet of patent law.

In *Fujitsu*, the Court of Appeals reaffirmed that "claims should be compared to the accused product to determine infringement." 620 F.3d at 1327. The Federal Circuit identified a limited circumstance in which that comparison could be made by reference to an industry standard: "*If a district court construes the claims and finds that the reach of the claims includes*

*any device that practices a standard*, then this can be sufficient for a finding of infringement.” *Id.* (emphasis added). And this, of course, makes sense. If, at the time of claim construction, IP Bridge had presented claim constructions incorporating the supposedly relevant portions of the 3GPP industry standards, the Court would have had the opportunity to “construe[] the claims and find[] that the reach of the claims includes any device that practices a standard.” *Id.* Or, as the evidence at trial suggests, it may well have found otherwise. But IP Bridge did not do this. It never mentioned the 3GPP industry standards on which its theory of infringement at trial has been premised for the asserted patents. (D.I. 109.) The consequence has been that it has presented a theory of infringement at trial that virtually ignores the settled principle that “[e]ach element contained in a patent claim is deemed material to determining the scope of the patented invention[,]” and every element must be found in the accused device. *Warner-Jenkinson v. Hilton Davis Chem.* ment order recognized that *Fujitsu’s* holding applies only when a district court construes the claims to find that the reach of the claims includes any device that practices a standard.<sup>1</sup>

In *WiA V Networks, LLC v. 3Com Corp.*, 2010 WL 3895047, at \*2 (N.D. Cal. Oct. 1, 2010), the plaintiff’s infringement theory was premised in part on the defendant’s products being compliant with a wireless industry standard. *Id.* at 2. The court rejected plaintiff’s argument on the basis that the products’ compliance with the protocol did not automatically establish that plaintiff’s patents cover *all* implementations of the protocol. *Id.* The court, citing

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<sup>1</sup> DI. 446, pg 11.

*Fujitsu*, explained that “only in situations *where a properly construed patent* covers all required elements of an industry standard will it be enough to prove infringement by showing compliance with the standard,” and it highlighted plaintiff’s failure to show that practicing the asserted patents is “essential to complying with the protocol in all instances.” *Id.*; see also *Paone v. Microsoft Corp*, 881 F. Supp. 2d 386, 400-01 (granting summary judgment of no infringement where plaintiff failed to show that all real world implementations of standard would infringe).

The AIPLA Model Patent Jury Instructions<sup>2</sup> (Ex. A), and the Federal Circuit Bar Association Model Patent Jury Instructions (Ex. B), on direct infringement—both of which have been updated since *Fujitsu*—continue to require juries to compare the accused product to each asserted patent claim<sup>3</sup>. Final jury instructions in standard essential patent cases *post-Fujitsu* have similarly instructed jurors to undertake a comparison of the accused product with each and every one of the limitations of each asserted claim.<sup>4</sup> For these reasons, the Court’s jury instruction on direct infringement properly explains that that it is IP Bridge’s burden to prove infringement by showing that the accused

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<sup>2</sup> 1P Bridge cited the 2017 AIPLA Model Patent Jury Instructions in support of its proposed direct infringement instruction. (D.I. 435, pg. 26.)

<sup>3</sup> The District of Delaware’s Model Instructions similarly require jurors to compare the accused product to each asserted patent claim. (Ex. C).

<sup>4</sup> *Interdigital Communications Inc., v. ZTE Corporation (Ex. D)*, *Ericsson Inc., v. D-Link Corp., (Ex. E)*, *Golden Bridge Tech v. Apple Inc., (Ex. F)*, *Cellular Communications Equipment L.L. C., v. Apple Inc., (Ex. G)*, *Optis Wireless Tech., LLC v. Huawei Techs (Ex. H)*.

products include each and every requirement of the asserted claim as construed by this Court.

Respectfully submitted,

/s/Benjamin J. Schladweiler

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(US), Inc., and TCT Mobile, Inc.*

Dated: November 6, 2018

CERTIFICATE OF SERVICE

I, Benjamin J. Schladweiler, hereby certify that on November 6, 2018, a true and correct copy of the foregoing Defendants' Bench Memorandum was served via electronic mail upon the following counsel of record:

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