

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**WIRELESS PROTOCOL INNOVATIONS, INC.,**  
*Appellant*

v.

**TCT MOBILE, INC., TCT MOBILE (US) INC.,**  
*Appellees*

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2021-2112

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2016-  
01494.

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Decided: July 19, 2022

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KAYVAN B. NOROOZI, Noroozi PC, Los Angeles, CA, ar-  
gued for appellant.

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Before PROST, TARANTO, and CHEN, *Circuit Judges*.

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CHEN, *Circuit Judge*.

This is the second appeal arising from *inter partes* review of U.S. Patent No. 8,274,991 ('991 patent). On February 13, 2018, the Patent Trial and Appeal Board (Board) issued a final written decision finding that claims 1 and 3–5 of the '991 patent are unpatentable as obvious in view of two separate prior art combinations. *TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.*, IPR No. 2016-01494, 2018 WL 914699, at \*1, \*16 (P.T.A.B. Feb. 13, 2018) (*Final Written Decision*). Patent Owner Wireless Protocol Innovations, Inc. (WPI) appealed to this court. On appeal, we reversed the Board's unpatentability finding with respect to the first ground. *Wireless Protocol Innovations, Inc. v. TCT Mobile, Inc.*, 771 F. App'x 1012, 1016–18 (Fed. Cir. 2019) (*Wireless Protocol I*). We also vacated the Board's unpatentability finding with respect to the second ground because we found that it was premised on an incorrect construction of “grant pending absent state.” *Id.* at 1018. We remanded for further proceedings in view of our construction that the claimed “grant pending absent state” does “not [] permit the transmission of upstream data.” *Id.*

On remand, the Board reconsidered the second ground raised in TCT's petition and found that U.S. Patent No. 6,466,544 (Sen) does not disclose the “grant pending absent state” limitation because Sen's “Packet Standby” state permits some transmission of data packets. The Board nonetheless found all challenged claims were unpatentable because it would have been obvious to modify Sen to include a “grant pending absent state” as construed by this court. *TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.*, IPR No. 2016-01494, 2021 WL 1686514, at \*10 (P.T.A.B. Apr. 28, 2021) (*Remand Decision*). TCT raised that unpatentability argument based on the modification of Sen to meet the “grant pending absent state” claim limitation for the first time on remand.

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WPI appeals, arguing, among other things, that the Board violated WPI's due process rights by issuing its remand decision 21 months after this court's mandate and that the remand decision improperly relied on a new theory. We disagree with WPI that the Board violated WPI's due process rights or any statute, regulation, or internal operating procedure by not meeting the *goal* to issue remand decisions within six months of this court's mandate as set forth in the Board's Standard Operating Procedure 9. However, after review of the *inter partes* review record, we agree with WPI that TCT improperly raised the Sen-modification argument on remand. WPI's patent owner response sufficiently put TCT on notice of WPI's particular understanding of the claim, including the construction of "grant pending absent state" we ultimately adopted in our prior decision. In this circumstance, TCT's failure to raise its Sen-modification argument in its reply means that TCT forfeited the Sen-modification argument. Accordingly, we *reverse* the Board's remand decision.

## I

## A

The '991 patent relates to controlling data flow in point-to-multipoint communication systems. '991 patent col. 1 ll. 26–29. Generally, when customer premises equipment (CPE) seeks to transmit data upstream to a base station controller (BSC), the CPE must undergo a process known as "contention" where it competes with other CPEs for bandwidth. *Id.* at Abstract, col. 1 ll. 39–42. The CPE sends a request to the BSC for a desired amount of bandwidth and, once that bandwidth becomes available, the BSC permits the CPE to send data upstream. *Id.* col. 1 ll. 43–45. The challenged claims recite methods wherein a CPE transitions among three different "states" to facilitate communication with a centralized BSC.

In the first state, the "grant pending state," the CPE actively transmits data upstream to the BSC and uses a

process called “piggybacking” to also attach requests for further bandwidth. *Id.* col. 1 ll. 55–62, col. 2 ll. 37–45. This allows the CPE to continue to send data without repeatedly entering into contention for data slots. *Id.* col. 1 ll. 39–45, col. 1 ll. 61–63. In the second state, the “grant pending absent state,” the CPE requests bandwidth without engaging in contention and without relying on the request “piggybacking” on transmission of upstream data. *Id.* col. 2 ll. 16–25, col. 2 l. 66 – col. 3 l. 3. Rather, as we concluded in *Wireless Protocol I*, when the CPE is in the “grant pending absent state,” the CPE “sends no upstream data.” *Wireless Protocol I* at 1018 (quoting ’991 patent col. 2 ll. 8–22). In the third state, the “idle” state, the CPE must contend for bandwidth. ’991 patent col. 2 ll. 30–41. The CPE transitions among these states based on its data transmission needs.

Claim 1 of the ’991 patent is representative and reads:

1. A method for obtaining uplink (UL) transmission bandwidth in a point-to-multipoint communication system, where a customer premises equipment (CPE) is communicating with a base station controller (BSC) over a link shared with other CPEs, comprising the steps of:

operating the CPE in a grant pending state wherein the CPE awaits receipt of a bandwidth grant from the BSC, receives the bandwidth grant, transmits data to the BSC using the granted bandwidth, transmits further bandwidth requests using the granted bandwidth and transitioning from the grant pending state to a grant pending absent state once the CPE has transmitted upstream data to the BSC within a bandwidth specified by the bandwidth grant received from the BSC during the grant

pending state and the CPE has no pending bandwidth requests;

operating the CPE in the grant pending absent state awaiting arrival of data for transmission to the BSC and transmitting a first type bandwidth request to the BSC without entering into contention when the CPE receives data for transmission;

transitioning operation of the CPE from the grant pending absent state to the grant pending state after a subsequent bandwidth grant is received at the CPE; and

transitioning operation of the CPE from the grant pending absent state to an idle state if the CPE does not transmit any first type bandwidth request to the BSC during a timeout period.

Claims 3–5 directly or indirectly depend on claim 1 and WPI does not make any separate patentability arguments regarding those claims.

## B

In October 2015, WPI filed a patent infringement action against TCT in the Eastern District of Texas, asserting the '991 and other patents. TCT responded by filing petitions for *inter partes* review, including one challenging claims 1 and 3–5 of the '991 patent. In the petition, TCT presented three unpatentability grounds. The first two grounds relied on World Intellectual Property Organization Publication No. 99/61993 (Abi-Nassif) in combination with a technical specification referred to as “DOCSIS 1.1.” *TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.*, IPR No. 2016-01494, Dkt. No. 2, at 4 (P.T.A.B. July 27, 2016) (*Petition*). The third ground relied on Sen, U.S. Patent No. 6,655,307 (Rydnell), and patent owner admitted prior art. *Id.* TCT's petition did not propose constructions for any

claim terms but—consistent with our 2019 decision’s construction—did describe the “grant pending absent state” as the state in which “the CPE does not send data to the BSC and no grant is pending.” *Petition* at 10; *see also id.* at 12 (describing the “grant pending absent state” as the state “in which the CPE is: . . . ‘awaiting arrival of data for transmission to the BSC’”). Sen, the petition argued, teaches the “grant pending absent state” by disclosing a “Packet Standby” state in which a device equivalent to the claimed CPE transmits empty packets but is “inactive (i.e., not transmitting data).” *Id.* at 65; *see also id.* at 65–66 (“The Packet Standby state 44 permits the [CPE equivalent] to stay connected to the network even though it does not need to send any data, thereby facilitating a fast switch from the inactive state to being able to transmit data immediately when the [CPE equivalent] becomes active (i.e., has data to transmit).”).

On February 13, 2017, the Board instituted *inter partes* review on all three grounds. Its institution decision, however, did not indicate whether the “grant pending absent state” permitted or precluded transmission of data. *TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.*, IPR No. 2016-01494, Dkt. No. 8, at 4 (P.T.A.B. Feb. 13, 2017) (*Institution Decision*) (citing ’991 patent col. 2 ll. 23–29).

WPI’s patent owner response argued that Sen fails to disclose “transitioning” between the “grant pending absent” and “grant pending” states after a “subsequent bandwidth grant,” because Sen “resum[es] packet transmission independently of any subsequent bandwidth grant.” *Response* at 56. In other words, in WPI’s view, Sen lacks a true transition between a no-data-transmission grant pending absent state and a data-transmission grant pending state because data transmission can occur both before and after a bandwidth grant, i.e., “independently of any subsequent bandwidth grant.” In support of that argument, WPI cited to and quoted a portion of Sen indicating that, while in the Packet Standby state, it can “transmit

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the packets via the reduced amount of the original bandwidth when the packets again need to be transmitted.” *Id.* at 57.

On reply, TCT argued that “Sen clearly teaches [the grant pending absent state] (by its [] [P]acket [S]tandby state 44),” *Reply* at 18, and that Sen discloses maintaining network connection in the Packet Standby state “*even though it may not need to send any data,*” *Reply* at 20 (emphasis in original). The identified CPE-equivalent in Sen transitions to the Packet Standby state when “it has no further data to transmit” and remains in that state “to await new data.” *Id.* at 21. In light of the parties’ apparent mutual understanding that the claimed CPE does not transmit data when in the claimed “grant pending absent state,” TCT’s reply maintained that Sen’s Packet Standby state teaches that limitation and never argued that Sen could be readily modified to include a “grant pending absent state.” *See generally id.*

In its final written decision, the Board concluded that “[t]he claim *does not preclude* the sending of any data while the CPE is in the grant pending absent state.” *Final Written Decision* at \*14 (emphasis added). Based on this understanding of the “grant pending absent state,” where the CPE can transmit data upstream, the Board found all challenged claims to be unpatentable as obvious based on Abi-Nassif in combination with DOCSIS 1.1, *id.* at \*11, and Sen alone or in combination with Rydnell, *id.* at \*16. WPI appealed the final written decision to this court.

We reversed the Board’s decision with respect to the first ground of unpatentability based on Abi-Nassif and DOCSIS 1.1. *Wireless Protocol I* at 1017–18. We also vacated the Board’s decision with respect to the second ground because the Board “applied a flawed claim construction . . . counter to what the specification plainly teaches.” *Id.* at 1018. Consistent with the specification and the parties’ submissions, we held that the “grant

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pending absent state’ as properly construed [*does*] *not* [] *permit* the transmission of upstream data while the CPE is in that state.” *Id.* (emphasis added). We remanded for the Board to consider the second ground—Sen alone or in combination with Rydnell—in view of the proper construction. *Id.* In so doing, we specifically declined to “prejudge what arguments TCT has properly preserved or should now be permitted to advance or what determinations as to Sen, Rydnell, and admitted prior art are supported by the evidence.” *Id.*

On remand, the Board permitted the parties to submit additional briefing and expert testimony “limited to the issue of whether Sen describes operating a CPE in a grant pending absent state as interpreted by the Federal Circuit” because “the Federal Circuit’s interpretation of ‘grant pending absent state’ was neither proposed nor addressed by either party during the trial.” J.A. 2813.

In its opening remand brief, TCT argued, as it had in the original proceeding, that Sen expressly discloses a “grant pending absent state.” *TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.*, IPR No. 2016-01494, Dkt. No. 56, at 11 (P.T.A.B. Feb. 15, 2020). TCT also argued *for the first time* that, in the alternative, it would have been obvious to a skilled artisan to modify Sen to meet that limitation. *Id.* “If Sen were understood as expressly teaching the transmission of both data packets and control packets,” TCT argued that “[o]ne of skill in the art would readily understand that the feature of sending control packets in [Sen’s] Packet Standby state could be employed without corresponding use of the feature of sending data packets in the Packet Standby state.” *Id.* The parties disputed the merits of the Sen-modification argument, and whether TCT could raise that argument on remand, throughout the remand briefing and during additional oral argument.

On April 28, 2021, the Board issued its remand decision finding that Sen does not disclose the claimed “grant

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pending absent state,” but all challenged claims were unpatentable as obvious based on TCT’s argument that “one of ordinary skill in the art would understand that Sen could be modified to permit only the sending of control packets while in its Packet Standby state.” *Remand Decision* at \*9. WPI appealed, arguing that the Board improperly relied on a new unpatentability theory on remand. Appellant’s Br. 19. For the following reasons, we agree that the Board improperly relied on the modification of Sen, because TCT forfeited the argument by failing to present it prior to remand.

We have jurisdiction pursuant to 35 U.S.C. § 1295(a)(4)(A).

## II

The main substantive dispute between the parties is whether Sen renders obvious the “grant pending absent state” limitation. We must first consider, however, whether TCT preserved that argument by timely raising it before the Board. Failure to timely assert a right or raise an argument constitutes forfeiture. *In re Google Tech. Holdings LLC*, 980 F.3d 858, 862–63 (Fed. Cir. 2020) (quoting *United States v. Olano*, 507 U.S. 725, 733 (1993)). In this case, we find that TCT was on notice of WPI’s claim construction position on “grant pending absent state” by no later than WPI’s patent owner response, and TCT thus forfeited the Sen-modification argument by failing to even attempt to introduce it prior to remand. Our decision in *Wireless Protocol I* did not set forth a new claim construction never contemplated by the parties. Rather, the record of the original proceedings and first appeal show that both WPI and TCT understood that no data transmission occurs during the claimed “grant pending absent state.”

Beginning with the petition, both parties consistently understood “grant pending absent state” to refer to a state in which the CPE does *not* transmit data. *Petition* at 10, 12; *Preliminary Response* at 6; *Response* at 56–57; *Reply* at 18, 20. Both parties cited to and quoted portions of the

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specification stating that “[d]uring the grant pending absent state, the customer premises equipment sends no upstream data to the base station controller.” See *Petition* at 10 (citing ’991 patent col. 7 ll. 24–27); *Preliminary Response* at 6 (citing ’991 patent col. 6 l. 26 – col. 7 l. 44). Based on that mutual understanding, the parties disputed whether Sen disclosed the “grant pending absent state” and whether Sen disclosed transitioning to and from that state. *Petition* at 65; *Preliminary Response* at 36–42; *Response* at 56–57; *Reply* at 20–21.

TCT acknowledges it understood, prior to its reply, that WPI sought to distinguish the claimed “grant pending absent state” from Sen’s Packet Standby state because Sen’s Packet Standby state involves some active data transmission. In its responsive brief in *Wireless Protocol I*, TCT noted that “[b]efore the Board, WPI argued that Sen did not teach a ‘grant pending absent state’ because Sen *had access to bandwidth* (albeit significantly reduced bandwidth) while in the [P]acket [S]tandby state.” J.A. 3083 (emphasis added). TCT further argued that the Board explicitly rejected WPI’s understanding of the “grant pending absent state” by concluding that the claim language “does not preclude the sending of any data . . . in the grant pending absent state.” *Id.* (quoting *Final Written Decision* at \*14). The record supports TCT’s explanation of WPI’s position during the original *inter partes* review proceedings as to the meaning of “grant pending absent state.”

Before the Board, WPI argued Sen did not disclose “transitioning” between the “grant pending absent” and “grant pending” states because Sen described “resuming packet transmission independently of any subsequent bandwidth grant.” *Response* at 56. For support, WPI cited to and quoted a portion of Sen indicating that, when in the Packet Standby state, it can “transmit the packets via the reduced amount of the original bandwidth when the packets again need to be transmitted.” *Id.* at 57. In other

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words, active data transmission in Sen occurs regardless of whether Sen is in the Packet Standby state.

Accordingly, TCT was on notice of WPI's positions on claim construction and Sen's disclosure as to the "grant pending absent state" limitation. Our prior decision's claim construction in no way departed from WPI's understanding of the claim. Under these circumstances, if TCT wanted to raise the argument that Sen's Packet Standby state could be modified to not send data packets, it needed to at least try to introduce that argument for the Board's consideration no later than in its reply, rather than wait until the case returned on remand. We thus conclude that TCT forfeited the modification of Sen unpatentability argument and we reverse the Board's finding that claims 1 and 3–5 of the '991 patent are unpatentable as obvious in view of the Sen-based ground.

### III

Because we have found forfeiture for the reasons given above, we need not and do not reach the question of whether TCT had to raise its Sen-modification argument in its *petition* for it to be timely raised, i.e., whether raising it in reply would itself have been too late. Appellant's Br. 19–28. The Board's remand decision did not consider, for example, TCT's Sen-modification argument in view of existing standards for when a petitioner may introduce new argument and evidence in a reply that was not presented in the petition. *See Chamberlain Grp. v. One World Techs.*, 944 F.3d 919, 924–25 (Fed. Cir. 2019) (contrasting improperly raising a "new issue" with permissibly clarifying a previous position). That is, the Board did not explore under what circumstances it is permissible for a petitioner, in reply, to adapt an argument in the petition in response to a claim construction dispute raised by the patent owner in its patent owner response. Nor does this particular question appear to be addressed by the Board's Consolidated Trial Practice Guide or in a precedential Board decision.

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Therefore, the boundaries of that distinction are not at issue here.

Instead, the Board permitted additional argument because, under their view, our construction on appeal “was neither proposed nor addressed by either party during the trial.” J.A. 2813. TCT argues this was proper under this court’s decision in *SAS Institute*. Appellee’s Br. 31–32 (citing *SAS Inst., Inc. v. ComplementSoft, LLC*, 825 F.3d 1341 (Fed. Cir. 2016), *rev’d on other grounds sub nom. SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018)). However, the circumstances of the present case are distinguishable. In *SAS Institute*, the Board adopted a claim construction in its final written decision of its own making that differed from the Board’s own construction in its institution decision and the parties had, leading up to the final written decision, relied on and developed their arguments according to the Board’s earlier construction. *Id.* at 1351. Here, in contrast, the parties were given ample notice of and opportunity to address what would eventually become our claim construction—as well as any arguments arising therefrom—including prior to remand. Because the parties’ original briefs were premised on the understanding that the “grant pending absent state” did not allow data transmission, there is no concern about “chang[ing] theories in mid-stream” or “moving targets” warranting additional argument on remand. *Id.*; *see also* Oral Arg. at 8:09–45, 20:18–21:00.

Moreover, *SAS Institute* did not specify the scope of the remand in terms of potential new unpatentability arguments. Nor did *SAS Institute* delineate the scope of a petitioner’s ability to adapt unpatentability arguments on reply or remand in the face of a claim construction argument by the patent owner. That issue presents a substantial legal and policy question about the nature of *inter partes* review, namely, the degree to which a petitioner is bound to the specific elements of the unpatentability argument contained in its petition when the patent owner later

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counters with a claim construction that undermines the petitioner's original unpatentability ground. For the reasons set forth above, this case does not present an opportunity to explore such questions.

#### CONCLUSION

We have considered the parties' remaining arguments and do not find them persuasive. In view of the foregoing, we reverse the Board's remand decision finding the challenged claims unpatentable as obvious.

**REVERSED**