

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TCT MOBILE, INC. AND TCT MOBILE (US) INC.,  
Petitioner,

v.

WIRELESS PROTOCOL INNOVATIONS, INC.,  
Patent Owner.

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Case IPR2016-01704  
Patent 8,565,256 B2

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Before KEVIN F. TURNER, MITCHELL G. WEATHERLY, and  
KAMRAN JIVANI, *Administrative Patent Judges*.

WEATHERLY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
Determining Claims 1, 4, and 7 Unpatentable  
35 U.S.C. § 318(a)

I. INTRODUCTION

A. BACKGROUND

TCT Mobile, Inc. and TCT Mobile (US) Inc. (collectively “TCT”) filed a petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1, 4, and 7 (the “challenged claims”) of U.S. Patent No. 8,565,256 B2 (Ex. 1001, “the ’256 patent”). 35 U.S.C. § 311. TCT supported the Petition

with evidence including the declaration of Stuart J. Lipoff (Ex. 1005). Wireless Protocol Innovations, Inc. (“WPI”) timely filed a Preliminary Response. Paper 5 (“Prelim. Resp.”). WPI supported its Preliminary Response with evidence including the declaration of Gary Lomp, Ph.D. (Ex. 2001). On March 3, 2017, based on the record before us at the time, we instituted an *inter partes* review of claims 1, 4, and 7. Paper 6 (“Decision on Institution” or “Dec.”). We instituted the review on the following challenges:

| References                                                                                                                                                                                                 | Basis    | Claims challenged |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|
| Data-Over-Cable Service Interface Specifications, <sup>1</sup> Radio Frequency Interface Specification, Second Interim Release, Document Control No. SP-RFIV1.1-I02-990731 (1999) (Ex. 1019, “DOCSIS 1.1”) | § 102(b) | 1, 4, and 7       |
| DOCSIS 1.1 and International Patent Publication No. WO 99/61993, published Dec. 2, 1999 (Ex. 1022, “Abi-Nassif”)                                                                                           | § 103    | 1, 4, and 7       |

After we instituted this review, Patent Owner filed a Patent Owner Response in opposition to the Petition (Paper 19, “PO Resp.”) that was supported by a Second Declaration from Gary Lomp, Ph.D. (Ex. 2004). Petitioner filed a Reply in support of the Petition (Paper 27, “Reply”). Patent Owner did not move to amend any claim of the ’256 patent.

We heard oral argument on December 7, 2017. A transcript of the argument has been entered in the record (Paper 35, “Tr.”).

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<sup>1</sup> We refer to the first version of the Data-Over-Cable Service Interface Specifications as “DOCSIS.”

We have jurisdiction under 35 U.S.C. § 6(c). The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons expressed below, we conclude that Petitioner has demonstrated by a preponderance of evidence that claims 1, 4, and 7 are unpatentable.

#### B. RELATED PROCEEDINGS

TCT and WPI identified as related proceedings the co-pending district court proceedings of *Wireless Protocol Innovations, Inc. v. TCL Corporation, et al.*, Case Number 6:15-cv-918 (E.D. Tex.) and *Wireless Protocol Innovations, Inc. v. ZTE Corporation, et al.*, Case Number 6:15-cv-919 (E.D. Tex.). Pet. 2–3; Paper 4, 2. WPI identified two issued U.S. Patents and one pending U.S. Patent Application as being related to the '256 patent including: 9,125,051 B2; and 9,154,961 B2; and U.S. Application No. 14/805,051. Paper 4, 3. Related U.S. Patent No. 8,274,991 B2 is the subject of *inter partes* review in IPR2016-01494. IPR2016-01494, Paper 8. Related U.S. Patent No. 9,125,051 B2 is the subject of petitions for *inter partes* review filed by TCT in IPR2016-01861 and -01865. Although not identified by either party, U.S. Patent No. 9,125,051 B2 is the subject of petitions for *inter partes* review filed by TCT in IPR2016-01861 and -01865.

#### C. THE '256 PATENT

The '256 patent relates to “point-to-multipoint communication; in particular, the invention relates to control of contention for data slots by customer premises equipment in a wireless point-to-multipoint communication system.” Ex. 1001, 1:32–35. “Contention” refers to the

process by which many instances of customer provided equipment (one being a “CPE”) negotiate for assignment of data slots available from a base station controller (“BSC”). *Id.* at 1:46–53. The Specification identifies problems with conventional methods when two CPEs “collide” while requesting a data slot, especially when the traffic from the CPEs is not “bursty” (e.g., traffic generated by online games and voice sources). *Id.* at 1:54–2:13. To address such problems, the Specification describes a system of “using a new state machine to control [] contention” that includes “a grant pending absent state in which the [CPE] is polled with a unicast request slot.” *Id.* at 2:17–25. The Specification briefly describes the grant pending absent state as follows:

By virtue of the grant pending absent state, the customer premises equipment can request a data slot without entering into contention and generating excess contention traffic. After a suitable delay without more data being received to send upstream, the state machine can exit the grant pending absent state. This delay preferably is long enough for receipt of new non-bursty data for a communication, for example 50 ms.

*Id.* at 2:30–36.

Of the challenged claims, only claim 1 is independent, and dependent claims 4 and 7 depend directly from claim 1. *Id.* at 10:11–13 (claim 4), 10:26–28 (claim 7). Claim 1 is directed to a “method for obtaining uplink (UL) transmission bandwidth” and recites:

1. A method for obtaining upstream (UL) transmission bandwidth for a customer premises equipment (CPE) communicating with a base station controller (BSC) over a link shared with other CPEs, the method comprising:

contending with other CPEs to transmit a first type bandwidth request to the BSC in a contention slot and awaiting receipt of a bandwidth grant from the BSC;

transmitting upstream data to the BSC within a data slot specified by the bandwidth grant received from the BSC in response to successful transmission of the first type bandwidth request;

transmitting a second type bandwidth request within the data slot specified by the bandwidth grant using piggybacking for requesting a subsequent data slot for accommodating UL transmission of data in a current data backlog; and

transmitting from the CPE a third type bandwidth request in a bandwidth request opportunity for enabling the CPE to transmit new data subsequently received by the CPE within a first period of time and operating the CPE in an idle state if no new data arrives at the CPE within the first period of time.

*Id.* at 9:49–10:3 (as modified by Certificate of Correction).

## II. ANALYSIS

### A. CLAIM INTERPRETATION

“A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (affirming that USPTO has statutory authority to construe claims according to Rule 42.100(b)). When applying that standard, we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification, and absent any special definition, we give claim terms their ordinary and customary meaning. *See In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010); *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.” (internal quotation marks omitted)). Only terms which are in controversy need to be construed, and then only to the extent

necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

We instructed the parties to address expressly during the trial the meaning of “operating the CPE in an idle state if no new data arrives at the CPE within the first period of time” as recited in claim 1. Dec. 15–16. WPI argues that the broadest reasonable interpretation of this phrase is “operating the CPE in an **idle state, in which the CPE awaits arrival of data packets to send as upstream data to the BSC, on condition that** no new data arrives at the CPE within the first period of time.” PO Resp. 8–9. In so arguing, WPI relies on a commensurate passage in the Specification describing idle state 20. *Id.* at 9 (citing Ex. 1001, 6:43–45).

TCT argues that we should reject WPI’s interpretation because the ’256 patent does not define a special meaning for idle state and the cited portion of the Specification merely describes one type of “idle state.” Reply 4. TCT also cites another description of “idle state” in the Specification that reads: “The state machine preferably also includes an idle state in which the customer premises equipment awaits arrival of data packets to send as upstream data to the base station controller.” *Id.* (citing Ex. 1001, 2:37–39). However, TCT concludes that all claims are unpatentable even if we were to accept WPI’s proposed interpretation. *Id.* at 6.

Based on our review of the Specification, we determine that both passages cited by the parties support WPI’s argument that “idle state” as used in claim 1 refers to a state in which the CPE awaits arrival of data packets to send as upstream data to the BSC. Accordingly, we adopt WPI’s interpretation of “idle state.”

However, we also note that the Specification describes at least two different states in which the CPE “awaits arrival of data packets to send as upstream data to the BSC.” For example, the CPE awaits arrival of data while it is still receiving unicast polling requests from the BSC. See Ex. 1001, 7:16–26 (describing grant pending absent state in which “CPE 13 can use [a] . . . unicast request slot to request a data slot” (i.e., without contention) for upstream data “if more data is received” by CPE 13). CPE also awaits arrival of data packets when it has no grant pending and is not receiving unicast polling requests from BSC 12. *Id.* at 6:43–45. The Specification refers to this type of state as “idle state 20.” The claimed “idle state” refers to the second of these two states in which CPE awaits arrival of data packets to send as upstream data.

#### B. THE PARTIES’ POST-INSTITUTION ARGUMENTS

In our Decision on Institution, we concluded that the argument and evidence adduced by TCT demonstrated a reasonable likelihood that claims 1, 4, and 7 were unpatentable as obvious based on the challenges identified in the table in Part I.A above. Dec. 15. We must now determine whether Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable over the cited prior art. 35 U.S.C. § 316(e). In this regard, we previously instructed Patent Owner that “any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived.” Paper 7, 6; see also *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that patent owner’s failure to proffer argument at trial as instructed in scheduling order constitutes waiver). Additionally, the Board’s Trial Practice Guide states that the Patent Owner Response “should identify all the involved claims that are believed to be

patentable and state the basis for that belief.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

### C. LEGAL STANDARDS

TCT challenges the patentability of claims 1, 4, and 7 on the grounds that the claims are anticipated by DOCSIS 1.1 or obvious in light of Abi-Nassif and DOCSIS 1.1. To prevail in its challenges to the patentability of the claims, TCT must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to WPI. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* that we apply in determining whether a claim is reasonably likely to be unpatentable as obvious under 35 U.S.C. § 103(a) as follows:

(1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) resolving the level of ordinary skill in the pertinent art,<sup>2</sup> and (4) considering objective evidence indicating obviousness or nonobviousness. *KSR*, 550 U.S. at 406 (citing *Graham*, 383 U.S. at 17–18). In an *inter partes* review, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Thus, to prevail Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. With these standards in mind, we address each challenge below.

#### D. ANTICIPATION BY DOCSIS 1.1

TCT argues that DOCSIS 1.1 anticipates claims 1, 4, and 7. Pet. 51–57. For the reasons expressed below, we are persuaded that TCT has demonstrated by a preponderance of evidence that DOCSIS 1.1 anticipates claims 1, 4, and 7.

##### 1. Overview of DOCSIS 1.1

TCT contends that DOCSIS 1.1 “describes every limitation claimed by the ’256 Patent in a manner nearly identical (albeit using different terminology) to the patent’s described embodiments.” Pet. 29. DOCSIS 1.1

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<sup>2</sup> The parties do not dispute that a person having ordinary skill in the art refers to a person holding an undergraduate degree in electrical engineering or having an equivalent educational experience, and three or more years working in a relevant field employing digital communications technology to deliver telecommunication services, or alternatively a relevant field involving the design of telecommunication products. Pet. 5 (citing Ex. 1005 ¶ 32); PO Resp. 6.

is a complex and detailed standard by which cable providers deliver internet services to subscribers. *See generally* Ex. 1019. It specifies interactions among various hardware in the network, which is schematically depicted at a high level in Figure 1-1 that is reproduced below.

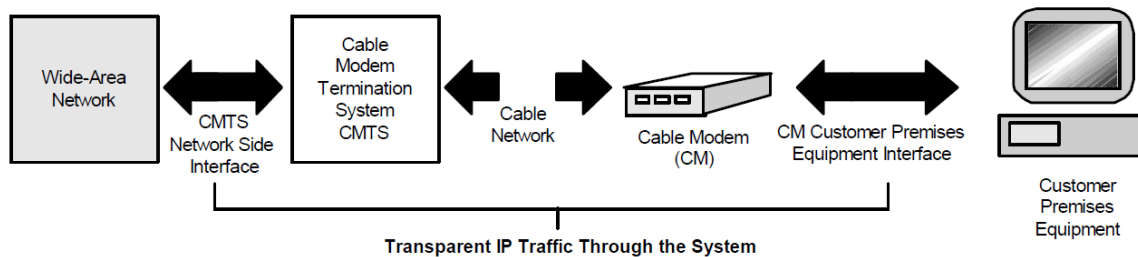


Figure 1-1 illustrates IP traffic over a “Data-Over-Cable” system.

Figure 1-1 illustrates the communication pathway from customer premises equipment to cable modems (“CM”), which relay data traffic over the cable network to a “cable modem termination system” (“CMTS”) located at the provider’s end. Ex. 1019 § 1.3.1. DOCSIS 1.1 uses a time division multiple access (“TDMA”) method for the CM to transmit data upstream in which the CMTS manages usage of time slots by CMs via a MAC protocol similar to the one discussed in *Abi-Nassif*. *Id.* §§ 3.5.2, 7.1. In operation, the CMTS regularly broadcasts a Bandwidth Allocation Map (“MAP”) message, which allocates upstream transmission opportunities (i.e., bandwidth) among the various CMs. *Id.* §§ 6.3.4, 7.1.1 *et seq.*, Appendix O (“Bandwidth Allocation Map”); Ex.1005 ¶¶ 146–47.

The CMTS may broadcast an interval for requesting bandwidth, which the CMs interpret as an invitation to contend for bandwidth by sending requests during that interval. *Id.* § 7.1.2.1, § 7.1.3. Alternatively, the CMTS may unicast an interval to a specific CM, which allows a specific CM to request a data slot without contending with other CMs. *Id.* DOCSIS 1.1 also offered enhanced quality of service (“QoS”), when

compared to DOCSIS 1.0, in which certain types of data (e.g., voice over IP, high bandwidth FTP) that required high levels of network performance (e.g., high bandwidth, low latency, low jitter) are prioritized. *Id.* §§ 8.1.1.2, 8.1.6.

DOCSIS 1.1 describes the use of two “service flows” that use unicast polling to prioritize certain types of upstream data transmission. One, the real-time polling service (“rtPS”), enables the CM to reserve upstream data slots for real-time traffic like voice over IP (“VoIP”) while avoiding having to contend for those slots. *Id.* § 8.2.2, C.2.2.6.4; Ex. 1005 ¶ 163. The polling interval for the rtPS is on the order of tens of milliseconds or less. Ex. 1019 § 8.2.2. Another, the non-real-time polling service (“nrtPS”), reserves upstream data slots for applications like high bandwidth FTP transfers. *Id.* § 8.2.4. Like the rtPS, the nrtPS also allows the CM to reserve data slots without resorting to contention. *Id.*; Ex. 1005 ¶¶ 164–66.

## 2. Claim 1

Claim 1 recites a “method for obtaining upstream (UL) transmission bandwidth” via a series of four steps performed by a CPE while communicating with a BSC over a link shared among other CPEs, which we summarize as: (1) “contending” for bandwidth using a “first type bandwidth request,” (2) “transmitting” data in the time slot awarded in response to the first type bandwidth request, (3) “transmitting” a “second type bandwidth request” within the originally granted time slot using “piggybacking,” and (4) “transmitting” a “third type bandwidth request in a bandwidth request opportunity . . . within a first period of time and operating the CPE in an idle state if no new data arrives at the CPE within the first period of time.” See Ex. 1001, 9:49–10:3. WPI does not contest that DOCSIS 1.1 describes steps 1–3, but argues only that DOCSIS 1.1 fails to describe step 4 of the method

of claim 1. PO Resp. 34–39. For the reasons expressed below, we determine that TCT has established by a preponderance of evidence that DOCSIS 1.1 anticipates claim 1.

a) First Step

The first step of claim 1 recites: “contending with other CPEs to transmit a first type bandwidth request to the BSC in a contention slot and awaiting receipt of a bandwidth grant from the BSC.” Ex. 1001, 9:53–55. TCT argues that the nrtPS of DOCSIS 1.1, which provides unicast and contention request opportunities to its CM, describes the first step because the CMTS sends a MAP message that defines “slots available for contention transmission,” and CMs respond with a first type bandwidth request during those time slots. Pet. 52–53 (citing Ex. 1019 ¶¶ 7.1, 7.1.2.1, 7.1.3, 7.1.6, 7.4.1, 8.2.4, Figures 7-1, 7-2). We are persuaded by TCT’s showing that DOCSIS 1.1 describes first step of claim 1.

b) Second Step

The second step of claim 1 recites: “transmitting upstream data to the BSC within a data slot specified by the bandwidth grant received from the BSC in response to successful transmission of the first type bandwidth request.” Ex. 1001, 9:56–59. TCT argues that DOCSIS 1.1 describes the second step because, after being granted upstream slots in response to a contention request, the CM transmits data to the CMTS in those slots. *See id.* at 53 (citing § 7.1 (including “CM tx opportunity” illustrated in Figure 7-1), § 7.1.6 (including “data PDU” transmitted at t10 in Figure 7-2)). We are persuaded by TCT’s showing that DOCSIS 1.1 describes the second step of claim 1.

c) Third Step

The third step of claim 1 recites: “transmitting a second type bandwidth request within the data slot specified by the bandwidth grant using piggybacking for requesting a subsequent data slot for accommodating UL transmission of data in a current data backlog.” Ex. 1001, 9:60–64. TCT argues that DOCSIS 1.1 describes the third step because, in the context of its high bandwidth FTP example, the CMTS may deprioritize the associated nrtPS service flow from a particular CM, which causes fragmentation of the data that the CM handles using piggybacking. *See id.* at 54–55. For example, deprioritizing the FTP transmission may result in the CM receiving only a “partial grant” that is insufficient to transmit the entire dataset. Ex. 1019, § 8.3; Ex. 1005 ¶ 249. In response, the CM uses the partial grant to begin sending the data and adds a piggyback request to indicate that more bandwidth is required. Ex. 1019, §§ 8.2.4, 8.3, 8.3.1.1, Figure 8-8, Appendix O; Ex.1005 ¶ 250. The CM may continue sending additional piggyback requests until it has completed its transmission of data. Ex.1019, §§ 8.3.1.1, 8.3.3.1 (“First Fragment, piggyback mode” and “Middle Fragment, piggyback mode”), Figure 8-8; Ex.1005 ¶ 251. We are persuaded by TCT’s showing that DOCSIS 1.1 describes third step of claim 1.

d) Fourth Step

The fourth step of claim 1 recites:

transmitting from the CPE a third type bandwidth request in a bandwidth request opportunity for enabling the CPE to transmit new data subsequently received by the CPE within a first period of time and *operating the CPE in an idle state if no new data arrives at the CPE within the first period of time.*

Ex. 1001, 9:65–10:3 (emphasis added). WPI contends that DOCSIS 1.1 fails to describe the emphasized portion of the fourth step of claim 1 for three reasons. PO Resp. 34–39. We address each in turn below, and we determine that none of WPI’s contentions are persuasive.

First, WPI contends that the “idle state” shown in Figure K-1 of DOCSIS 1.1 is not associated with the “timeout” relied upon by TCT. *Id.* at 35–37 (citing Ex. 2001 ¶¶ 30, 38). WPI’s argument is unpersuasive because it rests upon the false premise that Figure K-1 of DOCSIS 1.1 depicts the “idle state” identified by TCT. TCT contends that DOCSIS 1.1 describes the claimed idle state as the state occurring after the timeout period expires for non-contention requests by the CM (i.e., the CM’s responses to unicast polling that occurs as part of the nrtPS service flow). Pet. 55–56 (citing Ex. 1019 §§ 7.1.3, 7.1.6, 7.4.1, 8.2.4); Reply 13.

Second, WPI contends that the timeout period in the nrtPS service flow simply terminates that service flow rather than causing the CM to enter an “idle state.” PO Resp. 37–38 (citing Ex. 2001 ¶¶ 39–40, Ex. 2004 ¶ 8). TCT persuasively explains that when the CM is receiving unicast polling requests pursuant to the nrtPS service flow and it fails to receive data to send in response for too long (i.e., the service flow times out), the service flow (and its unicast polling requests) terminates and the CM continues to wait for data packets to send upstream. Pet. 56 (citing Ex. 1019 §§ 8.1.1.1, 8.1.5.3, Appendix C.2.2.5.7; Ex. 1005 ¶ 257); Reply 9–10 (citing Ex. 1050 ¶¶ 12–13). We determine that cited the testimony of Mr. Lipoff to accurately explain the manner in which the CM enters the “idle state” recited in claim 1 after no new data arrives “within the first period of time” as supported by the portions of DOCSIS 1.1 that Mr. Lipoff cites in his testimony. Ex. 1005

¶¶ 167, 257 (citing Ex. 1019, §§ 8.1.1.1, 8.1.5.3, Appendix C.2.2.5.7); Ex. 1050 ¶¶ 12–13 (citing Ex. 1019 §§ 8.2.2, 8.2.4, Appendix C.2.2.5.7). We also rely upon and find helpful the cross examination testimony of Mr. Lipoff in which he explains the CM’s transition to an idle state upon expiration of the timeout period for unicast polling. Ex. 2008, 161:18–163:12.

Third, WPI argues that the termination of the nrtPS service flow is based on inactivity at the CMTS (i.e., the alleged BSC) rather than the no new data arriving at the CM (i.e., the alleged CPE), *id.* at 38–39 (citing Ex. 2001 ¶ 42). WPI’s argument is unpersuasive because it is based upon an implied interpretation of the claim that the CPE must initiate the transition into the claimed idle state. WPI specifically rejects such an implied interpretation of the claim. PO Resp. 10–11. Moreover, as explained above, we determine that inactivity at the CM of DOCSIS 1.1 that extends past the timeout period for the nrtPS service flow will cause the CMTS to notify the CM that the service flow has ended and that it must use contention to obtain bandwidth to transmit later arriving data.

e) Conclusion

For all the foregoing reasons, we determine that TCT has established by a preponderance of evidence that DOCSIS 1.1 anticipates claim 1.

3. *Dependent Claims 4 and 7*

Claims 4 and 7 both depend directly from claim 1 and recite exactly the same limitation, namely: “wherein the CPE operates in a deferring state when it transmits the first type bandwidth request.” Ex. 1001, 10:11–13

(claim 4), 10:26–28 (claim 7).<sup>3</sup> Accordingly, we analyze both claims the same way.

Based on our review of the record, we determine that TCT has demonstrated by a preponderance of evidence that DOCSIS 1.1 anticipates dependent claims 4 and 7. WPI does not contend that the limitations introduced in claims 4 and 7 are a basis for patentability over DOCSIS 1.1. PO Resp. 39. Instead, WPI argues that claims 4 and 7 are patentable due to their dependency from claim 1 and the deficiencies that WPI marshals against TCT’s challenges to claim 1. *Id.*

#### E. OBVIOUSNESS IN VIEW OF ABI-NASSIF AND DOCSIS 1.1

TCT argues that the combination of Abi-Nassif and DOCSIS 1.1 renders claims 1, 4, and 7 unpatentable as obvious. Pet. 39–51, 58–63. TCT frames its challenge based on this combination by analyzing it two ways, one with Abi-Nassif being modified by teachings in DOCSIS 1.1, *id.* at 39–51, and another with DOCSIS 1.1 being modified by teachings in Abi-Nassif, *id.* at 58–63. We consider the pair of these separately identified challenges as if TCT had merely cast its challenge as being based on Abi-Nassif and DOCSIS 1.1 considered together.<sup>4</sup> For the reasons expressed

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<sup>3</sup> With our prior authorization, Paper 24, WPI filed a motion for a certificate of correction to correct claim 4 to depend from claim 17 rather than claim 1. Paper 25, Appendix A, p. 1. We address this motion in Part III below.

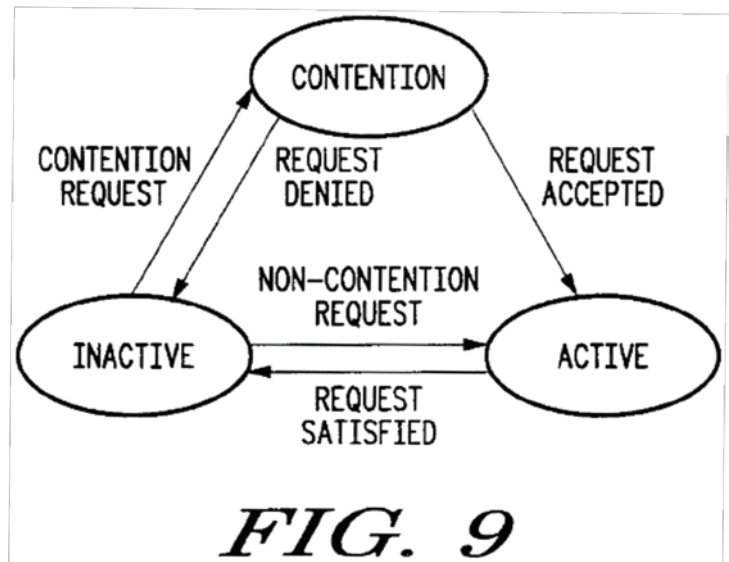
<sup>4</sup> Our reviewing court has previously found that:

In a case of this type where a rejection is predicated on two references each containing pertinent disclosure which has been pointed out to the applicant, we deem it to be of no significance, but merely a matter of exposition, that the rejection is stated to be on A in view of B instead of on B in view of A, or to term one reference primary and the other secondary.

below, we are persuaded that TCT has established by a preponderance of evidence that the combined teachings of Abi-Nassif and DOCSIS 1.1 render claims 1, 4, and 7 obvious.

*1. Overview of Abi-Nassif*

TCT contends that Abi-Nassif “discloses every limitation of the ’256 Patent claims other than the trivial aspect of transitioning to an idle state if new data does not arrive ‘within a first period of time.’” Pet. 23. Abi-Nassif describes a medium access control (“MAC”) protocol for coordinating access to a shared medium communication network such as data-over-cable using hybrid fiber-optic and coaxial cable. Ex. 1022, 1:6–9, 17:23–33. The MAC protocol provides rules for resolving collisions among secondary stations 104 as they request access to upstream channel 107. *Id.* at 18:19–19:9. The secondary stations can access the network using contention-free and contention-based methods. *Id.* at 19:10–20:20. Abi-Nassif refers to the operating states of its network as ACTIVE, INACTIVE, and CONTENTION and describes an ability for secondary station 104 to transition from INACTIVE to ACTIVE without entering into contention. *Id.* at 22:30–24:4, Fig. 9. Abi-Nassif’s Figure 9, reproduced at right, is a state



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*In re Bush*, 296 F.2d 491, 496 (CCPA 1961).

diagram reflecting these three states.

A MAC user is in the INACTIVE state “so long as it has no data to transmit or it is waiting for an opportunity to transmit a request.” *Id.* at 22:30–23:1. When the MAC user has data to transmit, it can transition into the ACTIVE state and transmit data upstream in one of two ways. *Id.* at 23:1–21. In one example, the MAC user transitions to the CONTENTION state and then the ACTIVE state using contention-based request for bandwidth is granted. *Id.* at 23:7–11. *See id.*, Figure 9 (INACTIVE to CONTENTION via “CONTENTION REQUEST” and then to ACTIVE via “REQUEST ACCEPTED”). In the other example, the MAC user transitions from INACTIVE directly to ACTIVE after “receiving a contention-free opportunity to transmit a request . . . as in the case of unicast polling.” *See id.* (INACTIVE to ACTIVE via “NON-CONTENTION REQUEST”). Thus, Abi-Nassif describes two different types of INACTIVE states. In the first INACTIVE state, the MAC user must use a contention request to secure a communication channel. In the second INACTIVE state, the MAC user can secure a channel using responses to unicast polling, a type of non-contention request. Abi-Nassif does not expressly describe, however, how it transitions between the first and second INACTIVE states.

Although the preferred embodiment of Abi-Nassif is a wired network, Abi-Nassif also suggests that its methods may be used over a wireless network. *Id.* at 17:32–18:2.

## 2. Claim 1

TCT contends that Abi-Nassif describes every element recited in claim 1 other than a portion of the fourth step, namely “operating the CPE in an idle state if no new data arrives at the CPE within the first period of

time.” Pet. 23, 39–46. TCT identifies the operation of the rtPS or nrtPS service flows from DOCSIS 1.1, which are unicast polling services that each terminate for non-use after a timeout period expires, as constituting this final step. *Id.* at 46–48. TCT argues that, based on the combined teachings of Abi-Nassif and DOCSIS 1.1, an ordinarily skilled artisan would have found it obvious to incorporate into Abi-Nassif the timeout period from DOCSIS 1.1 that governs when the CPE enters the claimed idle state. *Id.* at 46–47 (citing Ex. 1005 ¶¶ 211–12).

TCT argues that because Abi-Nassif expressly incorporates DOCSIS 1.0, an ordinarily skilled artisan would have found it obvious to incorporate the revised DOCSIS 1.1 and its improvements into Abi-Nassif to provide higher QoS and increase the efficiency of Abi-Nassif’s use of bandwidth. *Id.* at 49–50 (citing Ex. 1005 ¶¶ 205–10). TCT also argues that because Abi-Nassif explicitly incorporates DOCSIS 1.0 and DOCSIS 1.1 indicates that it is backward compatible with DOCSIS 1.0, an ordinarily skilled artisan would have used teachings in DOCSIS 1.1 relating to enhanced QoS features to improve the implementation of unicast polling already described in Abi-Nassif. *Id.* at 48–49 (citing Ex. 1005 ¶¶ 95–106, 203, 204).

WPI argues that neither Abi-Nassif nor DOCSIS 1.1 describe the fourth step recited in claim 1. PO Resp. 25–32. WPI’s argument focuses solely upon deficiencies that it identifies in the alleged teaching by DOCSIS 1.1 of “operating the CPE in an idle state if no new data arrives at the CPE within the first period of time.” *Id.* For the reasons, expressed in Section II.D.2.d) above, we find WPI’s arguments to be unpersuasive. We also determine that Abi-Nassif describes all other elements of claim 1 for the

reasons and based upon the evidence set forth by TCT in the Petition and cited by Mr. Lipoff in support of his testimony. *See* Pet. 41–51, 59–63 (citing Ex. 1005 ¶¶ 95–106, 124, 125, 134, 178, 189, 193–213, 222–36).

WPI also argues that TCT’s rationale for combining teachings of Abi-Nassif and DOCSIS 1.1 “merely amount to awareness” that “is not sufficient.” *Id.* at 33. WPI cites no legal authority for its argument. *Id.* Instead, WPI relies upon testimony from Dr. Lomp that mimics WPI’s brief. We determine that TCT has easily demonstrated by a preponderance of evidence that an ordinarily skilled artisan would have found it desirable to incorporate features from DOCSIS 1.1 into Abi-Nassif as identified by TCT to improve the operational efficiency of Abi-Nassif.

For all the reasons expressed above, we determine that TCT has established by a preponderance of evidence that the combined teachings of Abi-Nassif and DOCSIS 1.1 render claim 1 obvious.

### *3. Dependent Claims 4 and 7*

Based on our review of the record, we determine that TCT has demonstrated by a preponderance of evidence that the combined teachings of Abi-Nassif and DOCSIS 1.1 render dependent claims 4 and 7 unpatentable as obvious. WPI does not contend that the limitations introduced in claims 4 and 7 are a basis for patentability over the combination of Abi-Nassif and DOCSIS 1.1. PO Resp. 34, 40. Instead, WPI argues that claims 4 and 7 are patentable due to their dependency from claim 1 and the deficiencies that WPI marshals against TCT’s challenges to claim 1. *Id.*

### III. MOTION FOR CERTIFICATE OF CORRECTION

On July 14, 2017, we issued an Order authorizing WPI to file a motion for a Certificate of Correction pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322(a)(3). Paper 24 (the “Order”). The panel instructed the parties to address whether, under *Southwest Software, Inc. v. Harlequin Inc.*, 226 F.3d 1280, 1293–97 (Fed. Cir. 2000), the unpatentability of claim 4 as originally issued in the ’256 patent remains at issue throughout this proceeding. Order 3. WPI filed its Motion, Paper 25 (the “Motion” or “Mot.”), and TCT filed its Opposition, Paper 26 (the “Opposition” or “Opp.”).

#### A. MATERIAL FACTS

WPI seeks correction of claims 3–6, 8–12, 18, and 19. Mot. 3. Of those claims, only claim 4 is among the claims challenged in this proceeding. WPI seeks to alter the dependency of claim 4 such that it depends from claim 17 instead of claim 1. Mot. Appendix A, p. 1. The alleged error in claim 4 was evident no later than the issuance of the ’256 patent on October 22, 2013. Ex. 1001, cover page (10). The ’256 patent already includes one Certificate of Correction, issued May 27, 2014. Ex. 1001, Certificate of Correction. WPI asserted claim 4 against TCT in district court litigation in October of 2015 and has continuously asserted that TCT infringes claim 4 in that litigation. Opp. 1. WPI sought permission to file the Motion in a teleconference on July 13, 2017, Order 24, a few weeks after filing its Patent Owner Response on June 5, 2017, and more than 42 months after the alleged error was evident. WPI has not proffered any explanation for its delay in seeking the requested Certificate of

Correction. *See generally* Mot. (never providing any reason for delay in seeking correction).

B. ANALYSIS

WPI argues that the Office made mistakes that entitle WPI to seek correction of the '256 patent under 35 U.S.C. § 254, Mot. 1, which states:

Whenever a mistake in a patent, incurred through the fault of the Patent and Trademark Office, is clearly disclosed by the records of the Office, the Director may issue a certificate of correction stating the fact and nature of such mistake, under seal, without charge, to be recorded in the records of patents. A printed copy thereof shall be attached to each printed copy of the patent, and such certificate shall be considered as part of the original patent. Every such patent, together with such certificate, shall have the same effect and operation in law on the trial of actions for causes thereafter arising as if the same had been originally issued in such corrected form. The Director may issue a corrected patent without charge in lieu of and with like effect as a certificate of correction.

35 U.S.C. § 254. The parties agree that the U.S. Court of Appeals for the Federal Circuit has held that Certificates of Correction issuing under § 254 do not have retroactive effect. Mot. 6; Opp. 3–4. The Federal Circuit, in applying § 254, has held:

We conclude that this language requires that, for causes arising after the PTO issues a certificate of correction, the certificate of correction is to be treated as part of the original patent—i.e., as if the certificate had been issued along with the original patent. By necessary implication, for causes arising before its issuance, the certificate of correction is not effective.

*Southwest Software*, 226 F.3d at 1295.

WPI's unexplained delay in seeking correction of the '256 patent, its continued assertion of claim 4 in litigation against TCT, and TCT's reliance on the recitation of claims in the '256 patent as issued all counsel against

granting the Motion with respect to claim 4. WPI also seeks correction of claims 3, 5, 6, 8–12, 18, and 19, which are not before us. Mot. 3. We determine that the most appropriate course for WPI to correct the errors alleged with respect to all claims is to file another request with the Office at the conclusion of these proceedings pursuant to 37 C.F.R. § 1.322. *See also* MPEP §§ 1002.02, 1003, 1480, 1485. For this reason, we deny the Motion without prejudice with respect to all issues presented.

#### IV. CONCLUSION

For the reasons stated above, we determine that TCT has demonstrated by a preponderance of the evidence that claims 1, 4, and 7 are unpatentable as anticipated by DOCSIS 1.1 and obvious over the combined teachings of Abi-Nassif and DOCSIS 1.1.

#### V. ORDER

For the reasons given, it is:

ORDERED that claims 1, 4, and 7 of U.S. Patent 8,565,256 B2 are held to be *unpatentable* as anticipated by DOCSIS 1.1;

FURTHER ORDERED that claims 1, 4, and 7 of U.S. Patent 8,565,256 B2 are held to be *unpatentable* as obvious under 35 U.S.C. § 103 in view of the combined teachings of Abi-Nassif and DOCSIS 1.1;

FURTHER ORDERED that WPI's Motion for Certificate of Correction is *denied without prejudice*; and

FURTHER ORDERED because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2016-01704  
Patent 8,565,256 B2

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