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Paper 11
Date: June 26, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

INTELLECTUAL VENTURES II LLC,
Patent Owner.

IPR2025-00217
Patent 10,952,153 B2

Before KRISTEN L. DROESCH, JASON W. MELVIN, and AARON W. MOORE, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Tesla, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–5, 10–15, and 20 (the "challenged claims") of U.S. Patent No. 10,952,153 B2 (Ex. 1001, "the '153 patent"). Paper 2 ("Pet."). Intellectual Ventures II LLC ("Patent Owner") filed a Preliminary Response. (Paper 7, "Prelim. Resp."). Pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), we have authority to determine whether to institute review.

An *inter partes* review may not be instituted unless "the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, we institute review.

A. REAL PARTIES IN INTEREST

Petitioner and Patent Owner each identifies itself as the real party in interest. Pet. 80; Paper 3 (Patent Owner's Mandatory Notices).

B. RELATED MATTERS

The parties identify the following related federal district-court litigation involving the '153 patent:

Intellectual Ventures II LLC v. Tesla, Inc., No. 1-24-cv-00390 (W.D. Tex. April 11, 2024); *Intellectual Ventures II LLC v. Tesla, Inc.*, No. 6-24-cv-00188 (W.D. Tex. April 12, 2024); *Intellectual Ventures II LLC v. Tesla, Inc.*, No. 1-24-cv-00884 (W.D. Tex. April 12, 2024). Pet. 80; Paper 3.

C. THE '153 PATENT

The '153 patent is titled "Power control in a wireless network" and relates to network-device transmit power control (TPC) commands that may

have a plurality of predefined levels. Ex. 1001, codes (54), (57). The '153 patent describes that "wireless communication system[s] often employ one of either an open loop scheme or a closed loop scheme to control uplink transmit power of a mobile radio." *Id.* at 1:58–60. Uplink refers to the link from user equipment (UE) to a base station. *Id.* at 1:60–67. Transmitting with increased power results in fewer errors as compared with decreased power, but can interfere with other signals sharing the radio link. *Id.* at 1:35–41. Transmissions are evaluated using "signal to noise-plus-interference ratio (SNIR)," and open-loop control uses a "SNIR Target value that is derived by the network and signaled to the UE." *Id.* at 2:1–7, 2:24–26. In closed-loop control, "received SNIR measurement is made by the network on an uplink signal" and then transmit power control (TPC) commands are sent from the network to the UE. *Id.* at 2:36–45.

Because the "open loop method is relatively slow at compensating for changes due to interfering signals from other transmitters" and "closed loop methods demand a very high command update rate," the '153 patent uses a combination of both approaches. *Id.* at 2:33–35, 2:44–48, 2:63–3:48. In addition, it discloses that a UE may accumulate TPC commands to determine uplink power level. *E.g., id.* at 7:4–6, 7:43–46, 9:28–40.

D. CHALLENGED CLAIMS

Claim 1 is independent and is reproduced below:[1]

1. A user equipment (UE) comprising:

[1.1] a transmitter;

a receiver; and

[1] We include bracketed limitation designations, consistent with the parties. *See generally* Pet.; Prelim. Resp.

a processor operatively coupled to the transmitter and the receiver,

[1.2] wherein the processor is configured to cause:

the receiver to receive, from a network device, an indication that transmit power control (TPC) command accumulation is enabled,

[1.3] the receiver to receive, from the network device, on a single physical channel, scheduling information and power control information that includes a multi-level TPC command, and

[1.4] the transmitter to transmit, to the network device, an uplink signal based on the received scheduling information and the multi-level TPC command.

Ex. 1001, 13:59–14:7. Claims 2–5 and 10 depend directly from claim 1. *Id.* at 14:8–19, 14:35–37. Claim 11 is independent and recites a method with limitations similar to claim 1's. *Id.* at 14:38–49. Claims 12–15 and 20 depend directly from claim 11. *Id.* at 14:50–60, 15:9–11.

E. Prior Art and Asserted Grounds

Petitioner asserts the following unpatentability grounds:

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1, 2, 4, 5, 11, 12, 14, 15	103(a)	Andersson[3], Baker[4], Khan[5]

[2] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011), effective March 16, 2013, amended the applicable statutes. Because the application from which the '153 patent issued claims priority to an application filed before this date, the pre-AIA version of § 103 applies.

[3] US 6,334,047 B1, iss. Dec. 25, 2001 (Ex. 1009).

[4] US 2001/0036238 A1, pub. Nov. 1, 2001 (Ex. 1010).

[5] US 2004/0190485 A1, pub. Sept. 30, 2004 (Ex. 1005).

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
3, 13	103(a)	Andersson, Baker, Khan, Dick[6]
1, 2, 4, 5, 10–12, 14, 15, 20	103(a)	Zeira[7], Baker, Khan, Tong[8]
3, 13	103(a)	Zeira, Baker, Khan, Tong, Dick

Pet. 16. Petitioner relies also on the Declaration of Dr. Michael D. Kotzin. Ex. 1003.

II. ANALYSIS

A. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner asserts that ordinarily skilled artisans "would have a bachelor's degree in electrical engineering, computer engineering, computer science, or equivalent training, and approximately two years of experience working in the field of wireless communication systems or design of similar communication systems." Pet. 15. Petitioner's proposed definition, which Patent Owner does not dispute, appears reasonable and consistent with the asserted prior art and the '153 patent, and we adopt it here.

B. CLAIM CONSTRUCTION

Petitioner submits that no claim term requires express construction. Pet. 15. Patent Owner does not propose any express constructions. At this stage, we agree we can determine whether institution is warranted without express construction. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375

[6] US 2004/0077370 A1, pub. Apr. 22, 2004 (Ex. 1008).
[7] US 6,600,772 B1, iss. July 29, 2003 (Ex. 1004).
[8] US 6,529,741 B1, Mar. 4, 2003 (Ex. 1007).

(Fed. Cir. 2019) ("The Board is required to construe 'only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

To the extent that the scope of a particular claim term impacts a party's argument during trial, the party should propose an express construction and show how the record supports it. Below, we note instances where the construction afforded a claim term may affect the analysis.

C. OBVIOUSNESS OVER ANDERSSON, BAKER, AND KHAN

Petitioner relies on Andersson for the claimed physical elements (Pet. 28–33), and further on Andersson's dedicated physical control channel (DPCCH) (*id.* at 36–38), the format of which is shown in Figure 5, reproduced below:

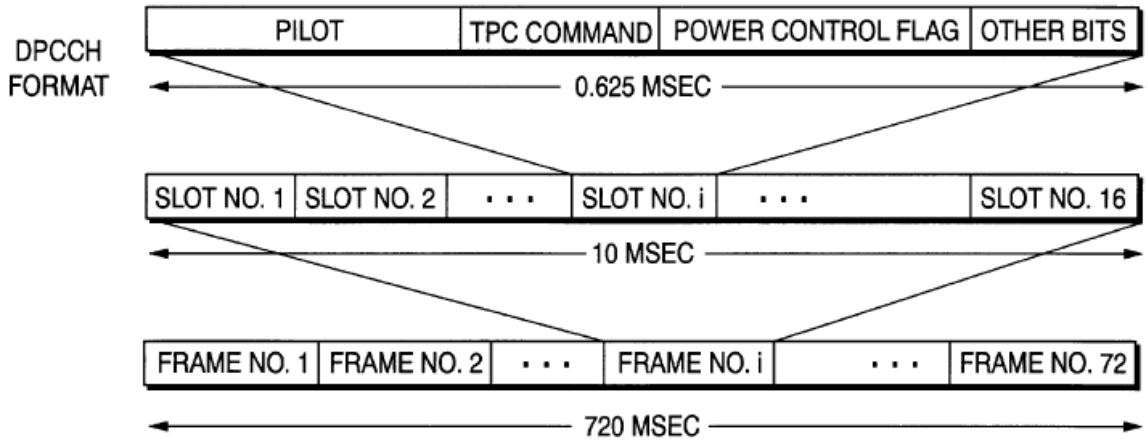


Fig. 5

Ex. 1009. Figure 5 depicts a "sample power control message format" such that the channel is divided into 72 frames, each corresponding to a 720 ms time period, where each frame is made of 16 time slots, and each slot

includes "a pilot field used for synchronization, a traffic power control (TPC) command which may include a command to increase, decrease, or maintain transmit power, a power control indicator or flag, and other bits." *Id.* at 9:11–21.

Petitioner asserts that Andersson discloses the claimed TPC command accumulation because it discloses that the UE may incrementally adjust its power after receiving each TPC command. Pet. 34 (citing Ex. 1009, 3:39–56, 9:4–6, 9:18–24, 12:45–48). Petitioner asserts that Andersson's power-control indicator or flag determines what type of power-control adjustment is applied and therefore indicates that a particular type of power-control adjustment is enabled. *Id.* at 34–35 (citing Ex. 1009, 9:1–11, 10:58–61; Ex. 1003 ¶ 90).

Petitioner relies on Khan for the claimed scheduling information, and asserts that skilled artisans would have used Khan's teachings to configure Andersson's "other bits." Pet. 39–41. Khan discloses scheduling grants (SG) multiplexed on the same physical channel as TPC commands. Ex. 1005 ¶¶ 3, 32, 43, Fig. 5. Petitioner reasons that incorporating scheduling grants with TPC commands as taught by Khan would allow for a larger number of active wireless units, reduce complexity (and thus power usage), reduce latency, and makes sense because "scheduling information is control information and naturally belongs within a control channel, such as Andersson's DPCCH." Pet. 26–27.

1. TPC command accumulation

For how skilled artisans would have configured Andersson's power control flag, Petitioner points to Baker. Pet. 34–36. Baker discloses a "Power Control Algorithm (PCA)" parameter that indicates to the UE which of two

power-control schemes to apply. Ex. 1010 ¶¶ 21–23. When PCA is 1, each received TPC command changes the UE's transmit power, whereas when PCA is 2, the UE changes transmit power only when five identical TPC commands are received. *Id.*; Pet. 35–36 (citing Ex. 1003 ¶¶ 91–92).

Petitioner equates Baker's PCA of 1 to TPC command accumulation being enabled. *Id.* at 35. Petitioner equates a PCA of 2 to TPC command accumulation being not enabled "because the UE will not iteratively update the transmission power based on each TPC command." *Id.*

Patent Owner asserts that applying Baker's PCA of 2 would not indicate TPC command accumulation is disabled because "both values of the PCA parameter in Baker result in TPCs being added to an accumulator." Prelim. Resp. 30 (emphasis omitted).

The parties' dispute on this issue turns on claim construction. Petitioner's approach requires we read "accumulation" as updating transmission power for each received TPC command. That is consistent with some aspects of the '153 patent's description. *See* Ex. 1001, 9:29–42 ("[S]tep is the magnitude of the amount added to an accumulator upon receipt of each TPC command. . . . [T]he transmit power $P_{Tx}(k)$ may be updated each time a new TPC command is received."). Patent Owner's approach requires only that TPC commands cumulatively affect transmission power. That also appears consistent with the '153 patent's description. *See id.* at 9:35–36 ("The transmit power $P_{Tx}(k)$ may be updated for every frame period."). Based on those disclosures, it appears that the Specification supports Patent Owner's broader construction.

We need not resolve the "accumulation" claim-construction dispute at this stage, because Petitioner's Zeira-based ground justifies institution, as

discussed below. The parties should address the proper construction for "TPC command accumulation" in the instituted trial.

2. Dedicated vs. shared channels

Petitioner relies on Andersson's "dedicated physical control channel (DPCCH)" for transmitting the TPC commands and an indication of TPC command accumulation, and for the claimed "single physical channel" used to transmit scheduling information and power control information. Pet. 17–18, 26–27, 36–41. For including scheduling information in the channel, Petitioner asserts that skilled artisans would have modified Andersson's DPCCH in light of Khan's teachings to include scheduling information. *Id.* at 39–41.

Patent Owner submits that the asserted combination is unworkable and that skilled artisans would not have made it because Andersson's DPCCH is a dedicated channel sent to a single UE, whereas Khan's TPC commands and scheduling information are sent using a shared channel—"a channel that is shared by the UEs attached to a particular base station." Prelim. Resp. 34–35. Because Khan's TPCs and scheduling grants "are intended for different UEs that share the channel," unlike Andersson's TPC commands in a dedicated channel, Patent Owner asserts, "the two frame structures cannot be combined in the manner Petitioner suggests." *Id.* at 35–36. Although Andersson describes "other bits" in its data structure, Patent Owner asserts that those "would necessarily be intended for the UE that the DPCCH is dedicated for" and would not work for Khan's scheduling grants. *Id.*

Petitioner's expert, Dr. Kotzin, asserts that skilled artisans would only use Khan's technique "that TPC commands and uplink scheduling

information could be communicated in the same channel," not Khan's entire structure. Ex. 1003 ¶ 75. Patent Owner takes issue with that, relying on its own expert's testimony that Khan's approach—"delivering scheduling grants and TPCs on the same channel—is inseparable from its shared-channel structure." Prelim. Resp. 37 (quoting Ex. 2005 ¶ 112). According to Patent Owner's expert, Dr. Lomp, Khan discloses that its methods are motivated by the unique demands of shared-channel access. Ex. 2005 ¶ 112.

We do not agree with Patent Owner that the present record shows Andersson's and Khan's approaches couldn't or wouldn't be combined in the manner Petitioner asserts. Although shared-channel applications may have motivated Khan's approach, it seems that scheduling grants applicable to a particular UE could be transmitted to that UE along with Andersson's TPC commands. Thus, Patent Owner does not undermine Petitioner's prior-art combination on the present record. The additional record developed through trial may ultimately support Patent Owner on this point, but at present, this argument does not justify denial of institution.

Patent Owner additionally takes issue with Petitioner's asserted benefits such as "allowing for a larger number of active wireless units," reducing complexity, and reducing latency. Prelim. Resp. 38 (quoting Pet. 26–27). Those disputes raise potential factual issues that are best resolved through trial.

3. Reasonable expectation of success

Petitioner asserts that skilled artisans would have had a reasonable expectation of success because the combination is predictable, and Andersson specifically notes that signaling techniques are omitted from its

description. Pet. 27. In light of that note, Petitioner reasons, skilled artisans would know to look elsewhere for the various signaling techniques, which would include scheduling grants as described in Khan. *Id.* at 27–28. And Petitioner submits that Andersson's "other bits" sent with its TPC commands would facilitate sending those scheduling grants. *Id.* at 28.

Patent Owner challenges that reasoning, asserting instead that Andersson's statements cannot apply to Khan's control channel, because of its shared nature. Prelim. Resp. 40. This argument follows Patent Owner's distinction between dedicated and shared channels, and does not address any difficulty that skilled artisans may have in adapting Khan's approach to Andersson's dedicated channel. We conclude that Petitioner has adequately shown skilled artisans would have had a reasonable expectation of success with the asserted prior-art combination for purposes of institution.

4. Summary

Although we do not reach a conclusion on TPC command accumulation, because that issue depends on a claim construction that the parties have not briefed, the remaining aspects of Petitioner's unpatentability ground support institution.

D. OBVIOUSNESS OVER ANDERSSON, BAKER, KHAN, AND DICK

For claims 3 and 13, Petitioner relies on additional teachings from Dick. Pet. 44–47. Patent Owner does not separately dispute this ground. Prelim. Resp. 45. We need not address it here, and it is part of the instituted review.

E. Obviousness over Zeira, Baker, Khan, and Tong

Petitioner relies on Zeira for the physical elements, TPC command accumulation, and the claimed "single physical channel." Pet. 50–58, 63–64. Petitioner relies on Baker in the same way discussed above, for adjusting the power-control parameters available in Zeira. *Id.* at 58–59. Petitioner relies on Tong as teaching the claimed "multi-level TPC command." *Id.* at 60–63. And Petitioner relies on Khan for including scheduling information with the TPC commands. *Id.* at 64–67.

1. TPC command accumulation

Zeira discloses that closed-loop power control is combined with open-loop power control according to the following, Equation 4:

$$P_{TS} = P_0 + G(n) + \alpha L$$

where P_{TS} is the UE's transmit power, P_0 is the desired received power, G(n) is the "closed loop power control factor," α is a weighting value, and L is the path loss. Ex. 1004, 5:18–35, 5:66–6:58. Zeira notes that "the weighting may be applied to the closed loop factor or both the open and closed loop factors." *Id.* at 7:16–18. In that way, the weighting factor facilitates that "the network operator may desire to use solely open loop or solely closed loop power control." *Id.* at 7:19–20.

Patent Owner argues that Zeira's weighting factor does not satisfy the claim language because Equation 4 would permit the weighting factor to enable or disable open-loop power control, whereas closed-loop power control (and thus TPC command accumulation) remains enabled. Prelim. Resp. 47. That argument, however, ignores Zeira's express teaching that the weighting factor may be applied to the closed-loop power-control factor,

such that it would allow the network to operate with solely open-loop power control if desired. Ex. 1004, 7:16–20. Configured in that way, Zeira discloses the claimed indication that TPC command accumulation is enabled.

2. Dedicated vs. shared channels

As with the Andersson–Khan ground discussed above, Zeira discloses a dedicated channel that Petitioner asserts skilled artisans would have modified using Khan's approach for a shared channel. Prelim. Resp. 49. Patent Owner challenges the Zeira–Khan combination for the same reasons discussed above regarding the Andersson–Khan combination. *Id.* at 49–55. As with that above discussion, we conclude that the record supports institution because Zeira's dedicated channel could be used to carry scheduling information for the UE to which the dedicated channel is addressed.

Similarly, we conclude that Petitioner has adequately shown that skilled artisans would have had a reasonable expectation of success. Patent Owner's arguments against that conclusion depend on recognizing a fundamental incompatibility between shared and dedicated channels (*id.* at 56), which we do not recognize at this stage.

3. Summary

We have reviewed Petitioner's contentions based on Zeira, Baker, Khan, and Tong, and are persuaded that Petitioner has adequately supported institution. Pet. 47–71.

F. OBVIOUSNESS OVER ZEIRA, BAKER, KHAN, TONG, AND DICK

For claims 3 and 13, Petitioner relies on additional teachings from Dick. Pet. 72–74. Patent Owner does not separately dispute this unpatentability ground. Prelim. Resp. 60. We need not address it here, and it is part of the instituted review.

III. CONCLUSION

For the reasons discussed above, we conclude Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim. We have evaluated all of the parties' submissions and determine that the record supports institution.

This decision to institute trial is not a final decision as to patentability of any challenged claim, or any factual or legal issue underlying patentability. Any final decision will be based on the full record developed during trial. We expressly inform Patent Owner that any argument not asserted in a timely filed Response or another manner permitted during trial shall be deemed forfeited or waived, regardless of whether the argument was presented in the Preliminary Response.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of claims 1–5, 10–15, and 20 of the '153 patent is instituted on the grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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