

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,

Petitioner,

v.

INTELLECTUAL VETURES II, LLC,

Patent Owner

Case No. IPR2025-00219

U.S. Patent No. 9,706,500

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

EX2001	Petitioner's Answer to Complaint and Counterclaim, dated June 20, 2024, in <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2002	Docket from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2003	Scheduling Order from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2004	Defendant's Second Supplemental Preliminary Invalidity Contentions, dated January 9, 2025, in District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2005	Declaration of Gary Lomp
EX2006	Resume of Gary Lomp
EX2007	Notice of Allowance in U.S. Patent Appln. Serial No. 10/917,968
EX2008	IPR2018-01773 DECISION Instituting <i>Inter Partes</i> Review
EX2009	IPR2018-01773 ORDER <i>Granting</i> Joint Motion to Terminate
EX2010	Reserved
EX2011	Reserved
EX2012	Reserved
EX2013	3GPP TS 25.224 V5.9.0 (2005-12)

I. INTRODUCTION

Petitioner challenges claims 11-22 (“Challenged Claims”) of U.S. Patent No. 9,706,500 (“‘500 Patent”) on six grounds. The ‘500 Patent has 22 total claims, with claims 1, 11 and 17 being independent. In Ground 1, Petitioner challenges independent claims 11 and 17, and certain dependent claims, as allegedly obvious over US Patent No. 6,334,047 to Andersson et al. (hereinafter “Andersson”) and U.S. Patent Appln. Pub. No. 2004/0190485 to Khan (hereinafter “Khan”). In Ground 4, Petitioner challenges independent claims 11 and 17, and certain dependent claims, as allegedly obvious over U.S. Patent No. 6,600,772 to Zeira et al. (U.S. Patent Appln. Pub. No. 6,600,772), Khan and U.S. Patent No. 6,529,741 to Tong et al. (hereinafter “Tong”). The remainder of the grounds address dependent claims only. Independent Claim 1 and its Dependent claims 2-10 and 16-19 are not challenged.

An overarching theme in the Petition is that this patent has a legacy. *See* Petition, 6: 2-9. This family has, in fact, been pending since August 2004, with its first patent issuing nearly ten years later, in November of 2014. The Petition, however, seems to imply that the claims have evolved over the years to remove any semblance of invention from the claims. *See id.* This is simply not true. The first Non-Final Office Action ever issued in this family rejects the claims over the same primary reference the Petition relies upon in Grounds 4-6. EX1011, p. 811. In that

patent family member, which corresponds to U.S. Patent No. 8,897,828 (hereinafter “‘828 Patent”), Patent Owner successfully distinguished over Zeira, resulting in a Notice of Allowance that stated in its reasons for allowability:

[A]s a whole, none of the prior art cited alone or in combination provides the motivation to teach receiving, **on a single physical channel** by the UE **if accumulation is enabled**, **an allocation of a scheduled uplink resource** and **a TPC command**, wherein the TPC command is **accumulated with other received TPC commands** . . .

EX2007, page 3, lines 1-5 (different font colors show relationship between the allowable subject matter of the ‘828 Patent and the ‘500 Patent language). This allowable subject matter is very similar to the claim language of the ‘500 Patent. For example, claim 11 of the ‘500 Patent recites in relevant part:

the processor and the receiver are configured to receive, **on a single physical channel**, **an allocation of an uplink resource** and **a multi-level power control (TPC) command**....

The Zeira reference relied upon in the Petition has in fact been cited during prosecution of two members of ‘500 Patent family, with both applications issuing into a granted patents. The claim features of the ‘500 Patent, then, cannot be considered to be devoid of invention, but rather to have been honed to focus in on the inventive features, as is apt to happen over the 20-ish year history of a patent family. The result is the broadest patent possible that considers the relevant prior art. The fact that this has occurred does not make the ‘500 Patent invalid but, to the contrary, underscores the validity of this patent – the same arguments presented in

the Petition with respect to the “single channel” limitation have already been considered by the U.S. Patent and Trademark Office.

The Petition similarly seems to imply that because Inter Partes Review was instituted in the ‘828 Patent, “the Board agreed these recited features were likely unpatentable when instituting three previous IPRs challenging an ancestor of the ‘500 patent.” *See* Petition, 6:11-13. This statement is mis-leading. In an IPR filed against the ‘828 Patent, for example, regarding the “receiving, on a single physical channel . . . , an allocation of a scheduled uplink resource and a TPC command” limitation, the Board stated: “Patent Owner . . . maintains that Zeira does not describe the claimed process. But Patent Owner does not explain its position other than to assert that Zeira fails to disclose the claimed process and that “the Office has already determined that Zeira’s iterative process does not teach the conditional control process.” *See* EX2008, 12:14-20. In the same IPR, regarding the corresponding “single channel limitation,” the Board focused in on the fact that Patent Owner’s arguments were (perhaps erroneously) made about a “shared channel” and not the broader “single channel.” *Id.* at 12:17-20. This Response does not suffer from the same deficiencies and, therefore, the fact that institution was ordered in a different family member based on different Patent Owner arguments and different Claim language should have no bearing on whether the present IPR is instituted or not. Petitioner notes that the Board, in IPR2018-01773, did not reach the merits of the

petition as the parties agreed to withdraw the IPR before the Board could consider it. EX2009, 3:7-8.

The Petition attempts to bolster Office Actions issued during prosecution of the ‘500 Patent family by adding two additional references (Grounds 4-6), and an additional three grounds based on an alternative base reference, Andersson (Grounds 1-3). However, the additional references added in Grounds 4-6 are not properly combinable with Zeira and do not make up for its deficiencies – and Andersson – the main reference used in Grounds 1-3 – suffers from the same deficiencies as Zeira. Additionally, Khan, one of the secondary references used in all of Grounds 1-6, was cited during prosecution of a member of the ‘500 Patent family corresponding U.S. Patent No. 9,414,326, and the Claims were allowed. Khan is simply not properly combinable with Zeira or Andersson, as explained in detail in the arguments below.

Accordingly, consistent with the prosecution history of the ‘500 Patent, and all of its family members, the claims of the ‘500 Patent are valid and patentable over Zeira, alone, or in combination with Khan, Tong, Baker, and Dick (Grounds 4-6) as well as over Andersson, alone or in combination with Khan, Baker and Dick (Grounds 1-3). It is unlikely that Petitioner would succeed on the merits of this Petition and, therefore, this esteemed Board should deny institution of this Inter Partes Review of the ‘500 Patent.

II. SPECIFICATION OF '500 PATENT

The invention claimed in the '500 Patent addresses the technical problem of how to combine open and closed loop power control concepts for UE uplink transmissions and how to implement same at the UE and/or the base station. *See* EX1001, 8:25-32; EX2005, ¶24. Relevant aspects of the '500 Patent disclosure provide a single channel over which the base station may send transmit power control (TPC) commands and dynamic resource allocations for such uplink transmissions. *See, e.g.,* EX1001, Claims 11 and 17.

A. Background

In its Background section, the '500 Patent generally describes power control in wireless networks, including open and closed loop power control mechanisms, and the tradeoffs between using open versus closed loop power control in practice.

1. Power Control in Wireless Networks

In wireless networks, User Equipment (UE) uplink transmit power impacts not only the user experience, but also the experiences of other UEs sharing the same radio link. EX1001, 1:35-40. UEs transmitting with excessive power could be assigned higher transmit speeds and/or have lower error rates than UEs transmitting with lower power. EX1001, 1:42-48. This means that UEs transmitting with excessive power may “interfere with the reception of other signals sharing the radio link. Wireless communication systems employ power control schemes to maintain

a target error rate of a signal received on a radio link.” EX1001, 1:30-34, 55-57. This was conventionally done using either a closed loop power control method or an open loop method. EX1001, 1:51-53.

2. Tradeoffs Between Open Loop Power Control and Closed Loop Power Control

Using a closed loop power control method, the network determines and sends a target signal to noise-plus-interference ratio (SNIR) to each UE. EX1001, 2:28-31. “The UE uses the information signalled to it and monitors the received strength of signals it receives to determine a power level at which it will transmit.” EX1001, 2:19-22. Open loop methods allow the UE to address fast channel fading “by determining the path loss on a per frame basis and by adjusting the transmit power accordingly.” EX1001, 2:22-25; EX2005, ¶25. Fast channel fading may be caused, for example, by the user’s position (e.g., distance from the base station, signal obstruction due to buildings, etc.). EX1001, 4:34-44; EX2005, ¶25. However, open loop methods are also slow relative to open loop methods at addressing changes due to interfering signals from other UEs transmitting on the radio link. EX1001, 2:25-27; EX2005, ¶25.

Using a closed loop power control method, the network attempts to match the UE’s transmit power to an SNIR target value based on SNIR measurements made by the network on signals it receives from UEs. EX1001, 2:28-32; EX2001, ¶26. The network issues transmit power control commands (TPC commands) to increase

or decrease UE transmit power, instructing the UE to either increase or decrease its transmit power by a single, predetermined DB-step size. EX1001, 2:32-36; EX2005, ¶26. In contrast to open loop power control methods, closed loop power control methods cannot adequately compensate for fast channel fading as it can take a large number of iterations of TPCs and long delays “to compensate for a change in power that is substantially larger than the dB-step value.” EX1001, 2:36-40; EX2005, ¶¶25 and 31-33.

3. Problem Addressed By The ‘500 Patent

Because there are drawbacks to both open loop and closed loop uplink power control methods conventionally used by wireless networks, a mechanism was needed “that better balances the conflicting goals of reducing errors in a received signal,” reduces “interference imposed on signals received at other receivers,” and reduces “the overall residual SNIR fluctuations experienced by each user[‘]s signal at a receiver.” EX1001, 2:46-51; EX2005, ¶32.

B. DETAILED DESCRIPTION

The Detailed Description of the ‘500 Patent specification describes a combined closed loop and open loop power control scheme for UE uplink power control. “Some embodiments of the present invention advantageously combine elements of both open loop and closed loop schemes to control power levels, thereby

avoiding one or more of the disadvantages associated with either of the separately used schemes.” EX1001, 8:19-24; EX2005, ¶¶27 and 30.

1. The Network Can Turn On/Off the Combined Open and Closed Loop Power Control Scheme, a Solely Closed Loop Scheme, and a Solely Open Loop Scheme

The ‘500 Patent describes a parameter, which may be configured in a Node-B or Radio Network Controller (RNC) that “instructs a UE to enable or disable the setting of uplink transmit power level based on both the path loss and the TPC commands. A parameter may indicate whether a UE is to use open loop power control, closed loop power control or a combined scheme.” EX1001, 13:11-19; EX2005, ¶29.

2. Multi-Level TPC Command

Conventionally, TPC commands were only fixed amounts, typically +1dB or -1dB. EX1001, 2:34-36, 6:51-57, 7:65-8:3, 9:5-9; EX2005, ¶26. The ‘500 Patent adds the option of “a multi-level TPC command.” EX1001, 9:9-10; 2005, ¶¶28 and 30. Referring to Equation 2 above:

[F]or the current frame k , the UE may calculate the transmit power $P_{Tx}(k)$ as shown [in Equation 2] where K is the initial frame number determined when the power control process begins; TPC_i is -1 for a down TPC command and +1 for an up TPC command and 0 if no TPC command is received; and step is the magnitude of the amount added to an accumulator upon receipt of each TPC command.

EX1001, 9:21-27. (Emphasis added).

III. REFERENCES RELIED ON IN THE PETITION

The Petition advances two grounds against independent Claims 11 and 17 of the ‘500 Patent. In Ground 1, the Petitioner asserts that Claims 11 and 17 are obvious over U.S. Patent No. 6,334,047 to Andersson et al. (hereinafter “Andersson”) in combination with U.S. Patent Appln. Pub. No. 2004/0190485 to (hereinafter “Khan”). In Ground 4, the Petition asserts that Claims 11 and 17 are obvious over U.S. Patent No. 6,600,772 to Zeira et al. (hereinafter “Zeira”) in combination with Khan and U.S. Patent No. 6,529,741 to Tong et al. (hereinafter “Tong”).

A. Andersson

The Petition relies on Andersson as its primary reference for Ground 1. Andersson is focused on “varying the step size and even the type of power control scheme employed” by “transmitting a single bit value with the transmit power control command” EX1009, 10:27-31, EX2005, ¶38. This allows the network to signal a “very fast power control type adjustment” to be carried out “without much increase in overhead.” EX1009, 10:32-36, EX2005, ¶38.

In Andersson, the network sends the TPC commands and power control indicators to UEs using DPCCHs. EX1009, 9:12-16, EX2001, ¶39. An example DPCCH format is provided in FIG. 5 of Andersson (reproduced below for convenience). It is noteworthy that this is a dedicated channel, meaning that it is

dedicated to a particular UE. EX2005, ¶40 (explaining the differences between dedicated and shared channels as would be understood by a POSITA).

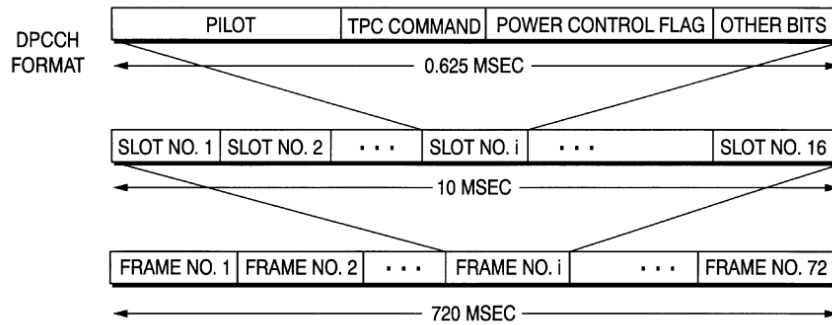


Fig. 5

As shown in FIG. 5, the DPCCH is divided into 72 frames, which correspond to a 720 msec time period (thus each frame is 10 msec long). EX1009, 9:12-16, EX2005, ¶41. Each 10 msec frame includes 16 time slots, each lasting 0.625 msec, and each 0.625 msec slot includes a pilot field, a TPC command (increase, decrease or maintain), a power control indicator/flag, and “other bits.” EX1009, 9:16-22; EX2005, ¶41.

B. Khan

The Petition relies on Khan as a secondary reference for Grounds 1 and 3. Khan is directed toward mechanisms for “carrying control information, such as scheduling grants, for reverse link [or uplink] packet access transmission.” EX1005, ¶11; EX2005, ¶42. In contrast to Andersson, however, which uses dedicated channels (DPCCHs) to send TPCs to UEs, Khan is focused on the use of shared

channels for this purpose. EX2005, ¶42. In particular, Khan explains that, “[f]or voice applications, conventional cellular communication systems employ dedicated links between a wireless unit and a base station.” EX1005, ¶4; EX2005, ¶43. However, “[w]ith the explosion of the Internet and the increasing demand for data, resource management has become a growing issue in cellular communications systems.” EX1005, ¶5; EX2005, ¶43.

Unlike voice, however, data communications may be relatively delay tolerant and potentially bursty in nature. Data communications, as such, may not require dedicated links on the downlink or the uplink, but rather enable one or more channels to be shared by a number of wireless units. By this arrangement, each of the wireless units on the uplink competes for available resources. Resources to be managed in the uplink include the received power at the base station, and the interference created by each user to other users in the same sector or cell, as well as in other sectors or cells, for example.

EX1005, ¶5; EX2005, ¶43.

The problem solved by Khan, therefore, is described as follows:

Further evolution of 3G standards may include high-speed reverse link packet access, such as from wireless unit to base station, for example. However, a time-multiplexed slot structure may be employed in certain systems supporting reverse link packet access. In these systems, a scheduling grant channel may be difficult to realize, given the time-multiplexed slot structure. Consequently, a need exists for a method of carrying control information, such as scheduling grants, for reverse link packet access transmission.

EX1005, ¶11; EX2005, ¶43.

This is reiterated in paragraph 43 of Khan, which states:

[A] code-multiplexed scheduling grant channel, in some cases, may not be used in the CDMA2000 HRPD. This may be attributed to the realization that the FL may employ a time-multiplexed slot structure. Consequently, a method for transmitting control information, including [sic] at least one scheduling grant(s), and/or transmit power control (“TPC”) information, for reverse link packet transmission is required. Such a method for transmitting the control information for reverse link packet transmission may incorporate various differing schemes, detailed hereinbelow, including, for example, the use of a MAC field in the forward link slot to carry the scheduling grants for RL packet transmission.

EX1005, ¶43; EX2005, ¶¶70, 71.

The Detailed Description of Khan provides two potential mechanisms a network can use to transmit control information to UEs using shared control channels, one using orthogonal Walsh covers and the other using a time domain duplex (TDD) channel structure. EX1005, ¶¶45, 46.

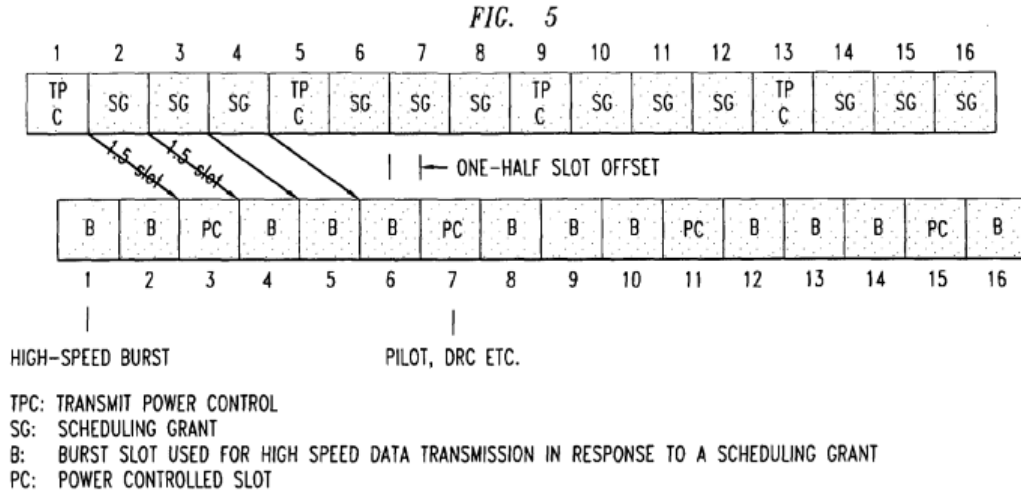
1. Orthogonal Walsh Covers

In this embodiment of Khan, each active UE is allocated a unique medium access control (MAC) index, which is used to indicate to a UE whether it has been scheduled for uplink transmission. EX1005, ¶45; EX2005, ¶45. The MAC indices can be transmitted in 64 chip length bursts, leaving 6 bits of control information that can be carried in each MAC index. EX1005, ¶46; EX2005, ¶71. However, “[i]n order to support both the TPC bits and the scheduling grant dedicated MACIndex transmission simultaneously, orthogonal Walsh covers may be needed.” EX1005, ¶47; EX2005, ¶45. Practically speaking, this means that, using this embodiment, the TPCs and scheduling grants are considered to be sent over separate physical

channels. EX1005, ¶¶37-41; EX2005, ¶45. The Petition seems to agree with this statement, noting that “Khan discloses that this control information may be transmitted...over the same Walsh channel, which a POSITA would understand is a physical channel.” Petition, 24:7-9.

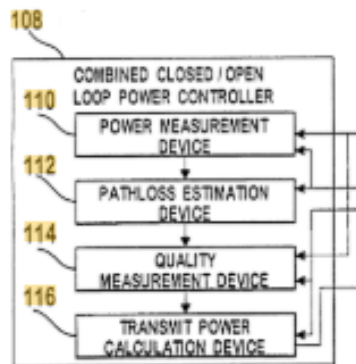
2. TDD Channel Structure

In this embodiment of Khan, a typical shared channel TDD structure is used. EX1005, ¶47; EX2005, ¶45. FIG. 5 (reproduced below) shows the proposed TDD structure. Using the illustrated TDD structure, each downlink slot carries different information. As can be seen in FIG. 5, for example, TPCs are sent in slots 1, 5, 9 and 13 while scheduling grants are sent in slots 2-4, 6-8, 10-12 and 14-16. EX1005, FIG. 5; EX2005, ¶45. Accordingly, in this embodiment of Khan, TPCs and scheduling grants, while sent on the same shared physical channel using TDD, are sent in separate slots. EX1005, FIG. 5; EX2005, ¶45. The UE is also restricted to transmitting in certain slots. As shown in FIG. 5, for example, a UE that receives an SG in slot 2 transmits in the second half of PC slot 3, and a UE that receives an SG in slot 3 may send a high speed data transmission in response to the SG in the second half of slot 4.



C. Zeira

The Petition relies on Zeira as its primary reference for Ground 4. Zeira describes a “combined closed/open loop power controller” 108, as illustrated in FIG. 4 (the relevant portion of FIG. 4 is reproduced below). EX1004, 3:25-26; EX2005, ¶47. The combined closed/open loop power controller 108 resides within a “transmitting station” 52, which can be a UE or network entity. EX1004, 3:25-28, 5:13-17; EX2005, ¶47.



Similar to Andersson, Zeira makes use of dedicated, rather than shared, control channels. EX1004, 4:27-30; EX2005, ¶48. More specifically, Zeira mentions that “[t]he closed loop power control command, b_{TPC} , which instructs the direction ($\pm$) of change in the UE’s transmit power, is typically sent in a dedicated channel.” (Emphasis added). EX1004, 4:27-28; EX2005, ¶79. Like Andersson, a dedicated channel is established for each UE: “The dedicated channel is dedicated to the communication between the receiving station 50 and the transmitting station 52” EX1004, 7:28-30; EX2005, ¶¶40, 48.

D. Declaration of Michael D. Kotzin, Ph.D

The expert declaration submitted by Dr. Michael D. Kotzin, (EX1003), should be afforded little weight because it offers no meaningful analysis beyond what is already stated in the Petition. A significant portion of Dr. Kotzin’s declaration merely parrots the Petition nearly verbatim, with only cosmetic differences such as the inclusion of direct quotations in place of pinpoint citations. *See, e.g.*, EX1003, ¶¶46-51, 53, 56-84, 88-94, 96-102, 104-149, 151, 152, 156-177. Such repetition does not constitute expert analysis and fails to provide the type of independent technical reasoning that might assist the Board. Consistent with *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-17 (PTAB Aug. 24, 2022) (precedential), expert declarations that do little more than restate a petitioner’s conclusory assertions—without additional technical rationale—are entitled to little

or no weight. This is especially true here, where the explanation is used not to explain the prior art, but to impermissibly fill gaps in the disclosures of Andersson and Zeira.

For instance, to support its flawed mapping of the Claimed “single channel” to Andersson’s DPCCH, the Petition and expert declaration assert:

[A]ndersson recognizes that “other bits” may be transmitted along with the TPC command and power control indicator in the dedicated physical control channel (DPCCH). Andersson 9:14-21. A POSITA would have found it obvious that those other bits may include a scheduling grant as described by Khan.

EX2007 at ¶76 (emphasis added); Petition, 28:5-8. Yet the declaration offers no citation to Andersson supporting this assertion. This omission is telling because Andersson does not disclose or even suggest what the “other bits” may be, nor does it disclose or suggest a need in the art for scheduling UEs. To the contrary, as identified by Dr. Lomp (EX2005, ¶¶41, 55-61), using Andersson’s DPCCH, one of ordinary skill in the art would not have gone looking for information on how to dynamically schedule UEs both because it not mentioned whatsoever in Andersson. As in *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1340-41 (Fed. Cir. 2020), where the Federal Circuit affirmed that expert testimony should be discounted when it merely repeats unpersuasive attorney argument without substantiating analysis, the Board should accord little weight to Dr. Kotzin’s conclusory statements.

Ultimately, Petitioner's expert is not interpreting Andersson but is, instead, re-writing it to conform to the Claim limitations—precisely the kind of improper hindsight reconstruction prohibited under § 311(b). The declaration's failure to offer independent analysis, combined with its unsupported assertions that contradict the cited reference, confirms that it should be afforded little probative value.

IV. THE PETITION FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF SUCCESS ON THE MERITS

A. Ground 1 – Claims 11, 15-17, 21 and 22 Are Not Obvious Over Andersson and Khan Pursuant To 35 U.S.C. § 103

In Ground 1, the Petition relies on an alleged combination of Andersson and Khan in challenging Claims 11, 15-17, 21 and 22 as allegedly obvious under 35 U.S.C. § 103. This allegation is deficient for a number of reasons. First, Petitioner has not properly established a motivation to combine Andersson and Khan. The alleged combination of these references would, instead, require a complete re-design of Andersson's system, which is impermissible. Second, Petitioner attempts to substitute conclusory statements of their expert, Dr. Kotzin, (1) to supply features that are completely missing from Andersson and (2) for reasons to combine the cited references.

- 1. Andersson and Khan, Alone or in Combination, Do Not Disclose or Suggest "Receiv[ing], on a Single Physical Channel, an Allocation of an Uplink Resource and a Multi-Level Transmit Power Control (TPC) Command..." As Required By Claim 11**

The Petition argues that “[t]he combination of Andersson and Khan renders obvious” the claim feature “receiv[ing], on a single physical channel, an allocation of an uplink resource and a multi-level TPC command.” Petition, 28:3-4. This argument, however, is based on a fundamental misunderstanding of the various channels described in each of the Andersson and Khan references and ignores portions of these documents that lead away from the alleged combination. EX2005, ¶¶52-54. These references cannot, in fact, be properly combined to arrive at this feature of Claim 11 of the ‘500 Patent.

a) Motivation to Combine

The U.S. Supreme Court in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-421 (2007) identified a number of different rationales that can be used as a motivation to combine references for purposes of obviousness under 35 U.S.C. § 103. Among the listed rationales was use of a known technique to improve similar devices (methods or products) in the same way, which the Petitioner relies on to combine Andersson and Khan. More specifically, regarding motivation to combine Andersson and Khan, the Petition advances the following argument:

A POSITA would have been motivated to transmit on Andersson’s “dedicated physical control channel (DPCCH)” both the TPC command and an uplink scheduling grant, as taught by Khan, because it would improve Andersson “in the same way” and require nothing more than “the predictable use of prior art elements according to their established functions.” Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to utilize

the teachings of Khan, which discloses such signaling techniques used by a base station for allocation of uplink resources in a spread-spectrum communication system that similarly transmits TPC commands.

Petition, 20:10-21.

Petitioner correctly identifies that Andersson teaches that a UE can receive TPC commands from a base station on a dedicated physical control channel (DPCCH). In Andersson, the DPCCHs have the frame structure shown in FIG. 5 (reproduced below for convenience). EX1009, 9:12-15. In the illustrated frame structure, each 0.625 msec slot includes a TPC command, a power control flag, and “other bits.” EX1009, 18-22. Andersson is, however, silent with respect to what information may be conveyed by the “other bits,” as acknowledged in the Petition.

Petition, 30:13-15. Nevertheless, the Petition argues:

[I]t would have been obvious to a POSITA for Andersson’s “other bits” in the DPCCH (*single physical channel*) to include an uplink resource Indeed, these aspects were well known to POSITAs as illustrated by Khan, for example.

Petition, 30:13-18.

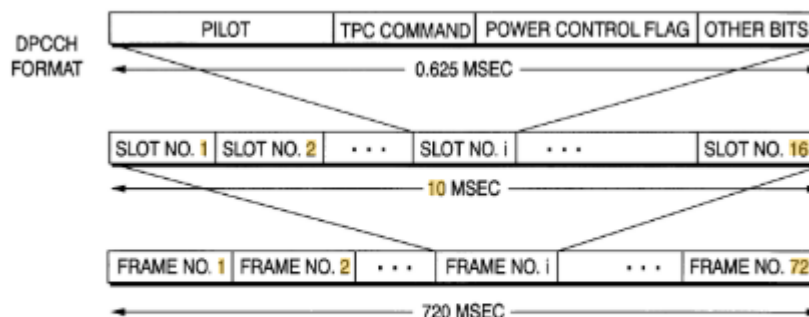
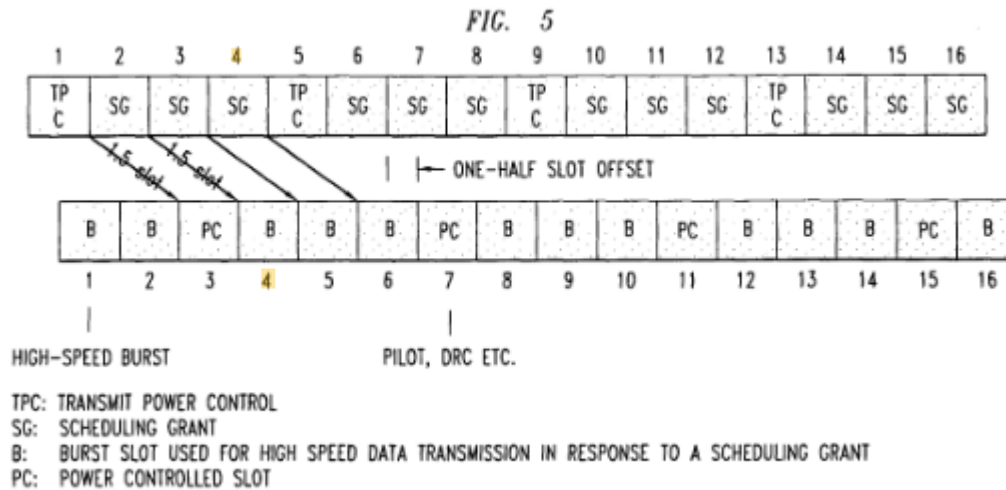


Fig. 5

As detailed above, Khan describes a completely different type of channel than the DPCCH taught by Andersson. Khan in fact teaches a shared channel (i.e., a channel that is shared by the UEs attached to a particular base station, for example) and even distinguishes this type of shared channel from dedicated channels:

Data communications, as such, may not require dedicated links on the downlink or the uplink, but rather enable one or more channels to be shared by a number of wireless units. By this arrangement, each of the wireless units on the uplink competes for available resources.

EX1005, ¶5; EX2005, ¶62. As such, Khan teaches a completely different channel type and frame structure from that taught by Andersson, which is illustrated in FIG. 5 of Khan (reproduced below for convenience). EX2005, ¶63. The frame structure shown in FIG. 5 of Khan is a time domain multiplexed structure in which each slot is reserved for a particular type of control data, including TPCs (e.g., slots 1, 5, 9 and 13) and scheduling grants (e.g., slots 2-4, 6-8, 10-12 and 14-16). EX1005, ¶¶11, 13-15, 37, 38; EX2005, ¶62. These TPCs and scheduling grants are intended for different UEs that share the channel. EX1005, ¶5.



Accordingly, if one of ordinary skill in the art, reading Andersson, happened upon Khan, that person would not implement the teachings of Khan to “improve” Andersson because the two frame structures cannot be combined in the manner Petitioner suggests. For example, the “other bits” in Andersson are part of a dedicated frame structure such that the “other bits” would necessarily be intended for the UE that the DPCCH is dedicated for, and would be included in the same slot as a pilot, a TPC command and a power control command, as shown in FIG. 5 of Andersson. EX1009, 9:16-22 and FIG. 5; EX2005, ¶55. By contrast, the scheduling grants (SGs) shown in FIG. 5 of Khan are included in separate slots that are allocated only for SGs and addressed to various UEs that share the same channel and are expected to transmit using the SGs a slot and a half later. EX1005, ¶47; EX2005, ¶57. Given these differences, there is no conceivable way to implement the SGs of Khan in the DPCCH of Andersson without substantially re-designing Andersson’s

frame structure. EX2005, ¶¶57-64. Accordingly, the teachings of Khan cannot be used to “improve” Andersson “in the same way” and Applicant’s rationale for combining these references fails to establish a prima facie case of obviousness.

Dr. Kotzin’s declaration opines that “a POSITA would only need the technique, not the entire structure, from Khan that TPC commands and uplink scheduling information could be communicated in the same channel to implement the technique in Andersson.” Ex 1003, ¶75. As stated by Dr. Lomp in his declaration at ¶65:

I respectfully disagree with this assessment. The “technique” described in Khan—namely, delivering scheduling grants and TPCs on the same channel—is inseparable from its shared-channel structure. Khan explicitly distinguishes its approach from those that use dedicated links, acknowledging that its methods are motivated by the unique demands of shared-channel access. *See* EX1005, ¶¶4–5. Ignoring this context and selectively borrowing only the outcome (i.e., co-delivery of control information), while discarding the mechanism, is not a sound basis for a 35 U.S.C. § 103 combination.

Additionally, “§ 103 does not permit [a Petitioner] to stitch together an obviousness finding from discrete portions of prior art references without considering the references as a whole.” *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1355 (Fed. Cir. 2014). “It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full

appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *In re Wesslau*, 353 F.2d 238 (CCPA 1965).

In this case, Dr. Kotzin, and Petitioner, failed to consider the fact that Khan is directed entirely toward shared channels and solutions required due to the shared nature of the channel (e.g., how to distinguish transmissions from different UEs). The reference in fact distinguishes itself from solutions for dedicated channels, stressing that this is not the focus of its disclosures. EX1005, ¶¶4-5. Dr. Kotzin essentially tells us to ignore the remainder of the reference (apart from the small portion of the disclosure that supports Petitioner’s position), which is not proper under relevant 35 U.S.C. § 103 case law.

Petitioner additionally mentions “several benefits” that could be obtained by the proposed combination of Andersson and Khan, including “allowing for a larger number of active wireless units,” reducing complexity by sending resource grants on the same control channel as the TPCs, and reduced latency. Petition, 21:2-11. However, these arguments are moot because there is no proper combination of Andersson and Khan that could produce such benefits. EX2005, ¶66. Regarding allowing a larger number of active wireless units, for example, as suggested by Khan, this would seemingly only be enabled by changing the dedicated channel to a shared channel, rather than, for example, adding additional dedicated channels, which is not suggested by Petitioner or any of the cited references. *Id.*

b) Frustration of Intended purpose

In some circumstances, there can be no suggestion or motivation to combine references, regardless of whether there are potential advantages to doing so. One such set of circumstances is where the proposed modification would render the prior art unsatisfactory for its intended purpose. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Similarly, if a proposed modification would change the principal of operation of the reference being modified, the references are not properly combinable to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959). References cannot be combined where the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” *Id.*

As outlined in Section a) *supra*, the main reference, Andersson, teaches a dedicated physical channel for transmission of TPCs to UEs. EX2005, ¶62. The Petition proposes to modify that structure by combining it with scheduling grants that are configured for transmission on a shared physical channel using a time domain multiplexed frame structure. Petition, 17:12-18:2. As the channels and frame structures are completely different from each other, there is no clear way to modify Andersson, using the teachings of Khan, without completely redesigning the

channel and frame structure of Andersson as the dedicated and shared channels are completely incompatible. EX2005, ¶¶62-64. Accordingly, even if Petitioner met its burden with respect to establishing a proper motivation to combine, which it has not, the proposed combination would still fail.

c) No Reasonable Expectation of Success

The Petition argues that “[n]ot only would utilizing Khan’s technique in Andersson’s system have been advantageous, but a POSITA would have also found the combination predicable and would have had a reasonable expectation of success.” Petition, 22:2-4. The Petition relies on two statements in Andersson for this proposition, including one statement that “signaling techniques are omitted so as not to obscure the description of the present invention” and another statement that it utilizes “well-known CDMA techniques [] to distinguish between the various mobile station and base station communications.” Petition, 22:6-13. (Emphasis added). However, these statements are not applicable to the DPCCH taught by Andersson because the DPCCH carries transmissions for only a single UE. EX2005, ¶¶66-74. These statements are similarly not applicable to Khan’s control channel because Khan makes clear that it is using time domain multiplexing, rather than CDMA, to implement its control channel:

A code-multiplexed scheduling grant channel, in some cases, may not be used in the CDMA2000 HRPD. This may be attributed to the realization that the [forward link] may employ a time-multiplexed shot structure. Consequently, a method of transmitting control information,

including [sic] at least one scheduling grant(s), and/or transmit power control (“TPC”) information, for reverse link packet transmission is required.

EX1005, ¶5; EX2005, ¶¶66-74.

Accordingly, in addition to not providing an acceptable motivation to combine Andersson and Khan, Petitioner has also not found reasonable expectation of success in its alleged combination of Andersson and Khan.

2. Petitioner’s Conclusory Arguments, Backed Only by the Identical Conclusory Arguments of Petitioner’s Expert, Dr. Kotzin, Should be Given Little, If Any, Weight

The Courts and the PTAB alike have made clear that, when arguing a feature naturally flows from the technology, some evidence, apart from conclusory statements, must be offered in support. *See Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355 (Fed. Cir. 2016). This is particularly true when conclusory statements in an IPR petition are merely supported by the identical conclusory statements in Petitioner’s expert declaration. In such circumstances, the expert’s declaration should be given little, if any, weight. *See IPR2022-00624, Director Review Decision, Paper #12, February 10, 2023 (finding that “the Board was correct in giving little weight to Petitioner’s expert because the expert declaration merely offered conclusory assertions without underlying factual support.”)*. These cases collectively indicate that expert testimony in patent disputes must include independent, reasoned analysis and cannot merely reiterate the Petitioner’s

arguments or present conclusory opinions devoid of evidentiary support. The Federal Circuit has “underscored that the expert’s conclusory statements and unspecific expert testimony d[o] not qualify as substantial evidence that could support the Board’s conclusions regarding obviousness.” *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1360-61 (Fed. Cir. 2019).

In one example, to substitute for a complete lack of disclosure in Andersson of “an indication that transmit power control (TPC) command accumulation is enabled,” the Petition argues:

[T]he power control “indicator” is an *indication* that a particular type of power control adjustment is *enabled*. And, a well-known type of power control adjustment before the ‘500 Patent was TPC accumulation.

Petition, 35:1-4. For this proposition, the Petition cites to the Declaration of Dr. Kotzin, which states the exact same thing. *Compare* Petition, 35:1-4 with EX1003, ¶90. Neither the Petition, nor Dr. Kotzin’s declaration, provides any citation showing that TPC accumulation was well-known “before the ‘500 Patent.” If the techniques recited in the ‘153 Patent Claims were so “well-known,” one would expect that there would be plenty of art to cite. Additionally, to the extent that Dr. Kotzin is a POSITA, he provides no explanation as to why he would consider this technique to have been well known before the ‘500 Patent. Petitioner’s arguments regarding motivation to combine and reasonable expectation of success are similarly conclusory and identical to the statements of their expert, Dr. Kotzin. For example,

the following paragraphs of the expert declaration essentially parrot the Petition word-for-word: EX1003, ¶¶46-51, 53, 56-84, 88-94, 96-102, 104-123.¹ The differences between the wording of these paragraphs from the declaration and that of the Petition are insubstantial. For example, in cases where the Petition provides a point citation to a given reference, the declaration includes a quotation from the reference corresponding to the point citation.

Table 3, below, provides a comparison of example arguments in the Petition, and the alleged supporting evidence in Dr. Kotzin’s declaration (the only difference between the two is highlighted in yellow). They are nearly identical, and both fail to provide anything other than conclusory statements. Of particular note is that Dr. Kotzin’s declaration is devoid of cross-citations in support of his position. Accordingly, Dr. Kotzin’s declaration should be given little weight.

TABLE 3

Petition	Expert Declaration
A POSITA would have been motivated to transmit on Andersson’s “dedicated physical channel (DPCCH)” both the TPC command and an uplink scheduling grant, as taught by Khan,	It is my opinion that a POSITA would have been motivated to transmit on Andersson’s “dedicated physical channel (DPCCH)” both the TPC command and an uplink scheduling

¹ The portions of the expert declaration that do not parrot the Petition include information such as the expert’s background, the materials he considered, and boilerplate describing application legal standards. (Ex. 1003, ¶¶ 1-28 (background of expert and materials considered), ¶¶ 29-32 (level of ordinary skill in the art), and ¶¶ 33-36 (legal standards)).

because it would improve Andersson “in the same way” and require nothing more than “the predictable use of prior art elements according to their established functions.” Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to utilize the teaching of Khan, which discloses such signaling techniques used by a base station for allocating uplink resources in a spread-spectrum communication system that similarly transmits TPC commands. Petition, 20:10-20 (Citations removed)	grant, as taught by Khan, because it would improve Andersson in the same way and require nothing more than the predictable use of prior art elements according to their established functions. Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to seek out and utilize the teaching of Khan, which discloses such signaling techniques used by a base station for allocating uplink resources in a spread-spectrum communication system that similarly transmits TPC commands. ¶63 (Citations removed)
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3. Independent Claim 11 is Not Obvious over the Alleged Combination of Andersson and Khan

For at least the reasons set forth above, claim 11 is not obvious over the alleged combination of Andersson and Khan, as set forth in the Petition. EX2005, ¶75.

4. Independent Claim 17 is Not Obvious Over Andersson and Khan for at Least the Same Reasons as Claim 11

While not identical to Claim 11, Claim 17 includes features similar to Claim 11. Accordingly, Claim 17 is not obvious over the alleged combination of Andersson and Khan for at least the same reasons as claim 11. EX2005, ¶76.

5. Dependent Claims 15, 16, 21 and 22 are Not Obvious over Andersson and Khan For at Least the Same Reasons as Their Base Claim 11 or 17

Claims 15 and 16 depend from claim 11, which is not obvious over the alleged combination of Andersson and Khan. Claims 21 and 22 depend from claim 17, which is also not obvious over the alleged combination of Andersson and Khan. Accordingly, claims 15, 16, 21 and 22 are not obvious over the alleged combination of Andersson and Khan, for at least the same reasons as claims 11 and 17. EX2005, ¶77.

B. Ground 2 – Claims 12, 13, 18 and 19 Are Not Obvious Over Andersson, Khan and Baker Pursuant To 35 U.S.C. § 103

Claims 12 and 13 depend from claim 11, which is not obvious over Andersson, and Khan. Claims 18 and 19 depend from claim 17, which is not obvious over Andersson and Khan. Baker does not make up for deficiencies of Andersson and Khan, as set forth above. Accordingly, claims 12, 13, 18 and 19 are not obvious over the alleged combination of Andersson, Khan and Baker. EX2005, ¶78

C. Ground 3 – Claims 14 and 20 are Not Obvious Over Andersson, Khan and Dick Pursuant to 35 U.S.C. § 103

Claim 14 depends from claim 11, which is not obvious over Andersson and Khan. Claim 20 depends from claim 17, which is not obvious over Andersson and Khan. Dick does not make up for deficiencies of Andersson and Khan, as set forth

above. Accordingly, claims 14 and 20 are not obvious over the alleged combination of Andersson, Khan and Dick. EX2005, ¶79.

D. Ground 4 – Claims 11, 15-17, 21 and 22 Are Not Obvious Over Zeira, Khan and Tong Pursuant To 35 U.S.C. § 103

In Ground 4, the Petition relies on an alleged combination of Zeira, Khan and Tong in challenging Claims 11, 15-17, 21 and 22 as allegedly obvious under 35 U.S.C. § 103. This allegation is deficient for a number of reasons. First, Petitioner has not properly established a motivation to combine Zeira and Khan. The alleged combination of these references would, instead, require a complete re-design of Zeira's system, which is impermissible. EX2005, ¶81. Second, Petitioner attempts to substitute conclusory statements of their expert, Dr. Kotzin, at least for reasons to combine the cited references. *Id.*

1. Zeira and Khan, Alone or in Combination, Do Not Disclose or Suggest “a Single Physical Channel That Carries “an Allocation of an Uplink Resource and a Multi-Level Transmit Power Control (TPC) Command”

The Petition argues that “Zeira and Khan render obvious receiving an allocation of an uplink resource and TPC command on a single physical channel.” Petition, 58:7-9. Like the similar argument made in Ground 1 relative to the alleged combination of Andersson and Khan, this argument is based on a fundamental misunderstanding of the various channels described in each of the Zeira and Khan references and ignores portions of these documents that lead away from the alleged

combination. EX2005, ¶82. These references cannot, in fact, be properly combined to arrive at this feature of Claim 11 of the ‘500 Patent.

a) Motivation to Combine

The U.S. Supreme Court in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-421 (2007) identified a number of different rationales that can be used as a motivation to combine references for purposes of obviousness under 35 U.S.C. § 103. Among the listed rationales was use of a known technique to improve similar devices (methods or products) in the same way, which the Petitioner relies on to combine Zeira and Khan. Petition, 20:10-21. More specifically, regarding motivation to combine Andersson and Khan, the Petition advances the following argument:

A POSITA would have been motivated to transmit on Andersson’s “dedicated physical control channel (DPCCH)” both the TPC command and an uplink scheduling grant, as taught by Khan, because it would improve Andersson “in the same way” and require nothing more than “the predictable use of prior art elements according to their established functions.” Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to utilize the teachings of Khan, which discloses such signaling technique used by a base station for allocating uplink resources in a spread-spectrum communication system that similarly transmits TPC commands.

Id. (citations removed).

Petitioner correctly identifies that Zeira teaches that a UE can receive TPC commands from a base station on a dedicated channel. EX1004, 4:27-30. Zeira’s

disclosure with respect to the dedicated channel is, however, in extremely limited, as follows:

The closed loop power control command, b_{TPC} , is typically sent in a dedicated channel. The dedicated channel is dedicated to the communication between the receiving station 50 and the transmitting station 52, step 40.

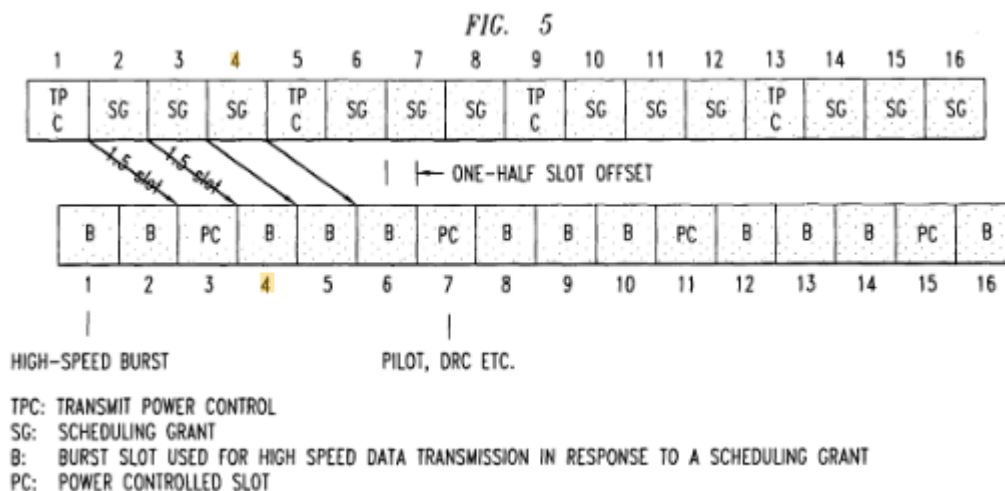
EX1004, 4:27-30; EX2005, ¶86. Zeira is completely silent with respect to any additional information sent to a UE on the dedicated channel. EX2005, ¶87.

In contrast with Zeira, and as detailed above, Khan describes a completely different type of channel than the dedicated channel taught by Zeira. Khan in fact teaches a shared channel (i.e., a channel that is shared by the UEs attached to a particular base station, for example) and even distinguishes this type of shared channel from dedicated channels:

Data communications, as such, may not require dedicated links on the downlink or the uplink, but rather enable one or more channels to be shared by a number of wireless units. By this arrangement, each of the wireless units on the uplink competes for available resources.

EX1005, ¶5; EX2005, ¶88. As such, Khan teaches a completely different channel and frame structure from that taught by Zeira, which is illustrated in FIG. 5 of Khan (reproduced below for convenience). The frame structure shown in FIG. 5 of Khan is a time domain multiplexed structure in which each slot is reserved for a particular type of control data, including TPCs (e.g., slots 1, 5, 9 and 13) and scheduling grants (e.g., slots 2-4, 6-8, 10-12 and 14-16). EX1005, ¶47 and FIG. 5; EX2005, ¶89. These

TPCs and scheduling grants are intended for different UEs that share the channel. EX1005, ¶47 and FIG. 5; EX2005, ¶90. The UE transmits in a later slot based on the timing of the received grant, typically a slot and a half later. *Id.*



Accordingly, if one of ordinary skill in the art, reading Zeira, happened upon Khan, that person would not implement the teachings of Khan to “improve” Zeira because the two frame structures cannot be combined in the manner Petitioner suggests. For example, in Zeira, b_{TPC} is part of a dedicated frame structure. EX1004, 4:27-30. By contrast, the scheduling grants (SGs) shown in FIG. 5 of Khan are included in separate slots that are allocated only for SGs and addressed to various UEs that share the same channel and are expected to transmit using the SGs a slot and a half later. EX1005, ¶47, FIG. 5. Given these differences, there is no conceivable way to implement the SGs of Khan in the dedicated channel of Zeira without substantially re-designing Andersson’s frame structure. Accordingly, the

teachings of Khan cannot be used to “improve” Zeira “in the same way” and Applicant’s rationale for combining these references fails to establish a prima facie case of obviousness.

Additionally, as explained by Dr. Lomp in his declaration at ¶91:

The Petition relies on EX1012, “Walsh Enhanced Uplink – Principles and Basic Operation,” to show how Zeira’s dedicated channels are mapped to physical channels, to satisfy the limitation of Claim 1 of “a single physical channel.” However, the following excerpts from Petitioner’s Exhibit 1012 also show that dynamic scheduling, at the least to extent it would allegedly be obvious to send it on Zeira’s dedicated channel, is actually sent by the RNC, and not the base station that sends TPCs, “as part of the reconfiguration function of the RRC layer.” EX1012 at § 7.3.2. Accordingly, Petitioner’s Exhibit 1012, to the extent it also teaches that DCHs are mapped to physical channels, also makes clear that a POSITA would not have incorporated dynamic scheduling via the dedicated channel as it clearly is not part of Zeira’s technology foundation, and should, accordingly, not be read into it.

It is also important to note that, in contrast to Ground 1, where Andersson taught that “other bits” were sent to UEs on the DPCCH, Zeira provides no indication that any information, other than b_{TPC} , is sent on the dedicated channel. EX2005, ¶92. The Petition reasons instead that, since “assigned resource units” for uplink transmissions are mentioned in Zeira, a POSITA would naturally go looking for a solution to assign such resource units to UEs and would have turned to Khan for a solution. Petition, 60:3-9.

Accordingly, a POSITA would not have gone looking a solution for dynamic assignment of resource grants as (1) it is not suggested at all by Zeira and (2) a

POSITA would have already been well aware that resources are granted statically by the RNC, and not dynamically by the base station.

Petitioner mentions “several benefits” that could be obtained by the proposed combination of Andersson and Khan, including “allowing for a larger number of active wireless units,” reducing complexity by sending resource grants on the same control channel as the TPCs, and reduced latency. Petition, 21, 1-11. It appears that the Petition is using the same arguments for the alleged combination of Zeira and Khan. Petition, 60:10-17 (citing to Section X.C.3, which is entirely about Andersson and Khan). Regardless, however, these arguments are moot because there is no proper combination of Zeira and Khan that could produce such benefits. Regarding allowing a larger number of active wireless units, for example, as suggested by Khan, this would seemingly only be enabled by changing the dedicated channel to a shared channel, rather than, for example, adding additional dedicated channels, which is not suggested by Petitioner or any of the cited references. EX2005, ¶¶92-94.

b) Frustration of Intended purpose

In some circumstances, there can be no suggestion or motivation to combine references, regardless of whether there are potential advantages to doing so. One such set of circumstances is where the proposed modification would render the prior art unsatisfactory for its intended purpose. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Similarly, if a proposed modification would change the

principal of operation of the reference being modified, the references are not properly combinable to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959). In the latter, references cannot be combined where the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” *Id.*

As outlined in Section a) *supra*, the main reference, Zeira, teaches a dedicated physical channel for transmission of b_{TPC} to UEs. EX1004, 4:27-30. The Petition proposes to modify that structure by combining it with scheduling grants that are configured for transmission on a shared physical channel. Petition, 59:7-60:9. As the channel structures are completely different, there is no clear way to modify Zeira, using the teachings of Khan, without completely redesigning the frame structure of Zeira as the dedicated and shared channels are completely incompatible. EX2005, ¶¶102, 103. Accordingly, even if Petitioner met its burden with respect to establishing a proper motivation to combine, which it has not, the proposed combination would still fail.

c) No Reasonable Expectation of Success

The Petition argues that “POSITA would recognize that combining Khan’s scheduling grant technique with Zeira’s system is nothing more than combining

prior art elements according to known methods to yield predictable results—particularly given that Zeira’s disclosure is not limited to transmission of TPC command over any particular channel.” Petition, 60:18-61:2. However, Zeira very clearly states that b_{TPC} is sent over a dedicated channel, and provides reference to no other channels that can be used for this purpose. EX1004, 4:27-30; EX2005, ¶¶104-107. Accordingly, implementing Zeira using a shared channel, as taught by Khan, is contradictory to the teachings of Zeira, and a combination of such concepts would not only not yield predictable results, but the combination would fail as the two channel types are not compatible.

As stated by Dr. Lomp in his declaration at ¶106:

Implementing Zeira’s closed-loop control over a shared channel as taught by Khan would not only contradict the structure and assumptions of Zeira’s system, it would introduce timing, interference, and addressing challenges that Zeira does not contemplate or address. In my opinion, this type of fundamental redesign would not yield predictable results, and would pose significant technical uncertainty for a POSITA attempting to merge these two disparate systems.

Accordingly, in addition to not providing an acceptable motivation to combine Zeira and Khan, Petitioner has also not found reasonable expectation of success in its alleged combination of Zeira and Khan.

2. Petitioner’s Conclusory Arguments, Backed Only by the Identical Conclusory Arguments of Petitioner’s Expert, Dr. Kotzin, Should be Given Little, If Any, Weight

The Courts and the PTAB alike have made clear that, when arguing a feature naturally flows from the technology, some evidence, apart from conclusory statements, must be offered in support. *See Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355 (Fed. Cir. 2016). This is particularly true when conclusory statements in an IPR petition are merely supported by the identical conclusory statements in Petitioner's expert declaration. In such circumstances, the expert's declaration should be given little, if any, weight. *See IPR2022-00624, Director Review Decision, Paper #12, February 10, 2023 (finding that "the Board was correct in giving little weight to Petitioner's expert because the expert declaration merely offered conclusory assertions without underlying factual support.")*. These cases collectively indicate that expert testimony in patent disputes must include independent, reasoned analysis and cannot merely reiterate the Petitioner's arguments or present conclusory opinions devoid of evidentiary support. The Federal Circuit has "underscored that the expert's conclusory statements and unspecific expert testimony d[o] not qualify as substantial evidence that could support the Board's conclusions regarding obviousness." *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1360-61 (Fed. Cir. 2019).

In one example, Petitioner's arguments regarding motivation to combine and reasonable expectation of success are conclusory and nearly identical to the statements of their expert, Dr. Kotzin. Patent Owner notes that the Petition relies on

a very generic argument regarding motivation to combine Andersson with Khan for its argument regarding motivation to combine Zeira and Khan, although Andersson and Zeira contain different disclosures. Petition, 20:10-20. Petitioner’s arguments regarding motivation to combine and reasonable expectation of success are similarly conclusory and identical to the statements of their expert, Dr. Kotzin. For example, the following paragraphs of the expert declaration essentially parrot the Petition word-for-word: EX1003, ¶¶124-149, 151, 152, 156-177.²

Table 4, below, provides a comparison of example arguments in the Petition, and the alleged supporting evidence in Dr. Kotzin’s declaration (any differences between the two are highlighted in yellow). They are nearly identical, and both fail to provide anything other than conclusory statements. Of particular note is that Dr. Kotzin’s declaration is devoid of cross-citations in support of his position. Accordingly, Dr. Kotzin’s declaration should be given little weight.

TABLE 4

Petition	Expert Declaration
A POSITA would have been motivated to transmit on Andersson’s “dedicated physical channel (DPCCH)” both the TPC command and an uplink	It is my opinion that a POSITA would have been motivated to transmit on Andersson’s “dedicated physical channel (DPCCH)” both the TPC

² The portions of the expert declaration that do not parrot the Petition include information such as the expert’s background, the materials he considered, and boilerplate describing application legal standards. (Ex. 1003, ¶¶ 1-28 (background of expert and materials considered), ¶¶ 29-32 (level of ordinary skill in the art), and ¶¶ 33-36 (legal standards)).

scheduling grant, as taught by Khan, because it would improve Andersson “in the same way” and require nothing more than “the predictable use of prior art elements according to their established functions.” Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to utilize the teaching of Khan, which discloses such signaling techniques used by a base station for allocating uplink resources in a spread-spectrum communication system that similarly transmits TPC commands. Petition, 20:10-20 (Citations removed)	command and an uplink scheduling grant, as taught by Khan, because it would improve Andersson in the same way and require nothing more than the predictable use of prior art elements according to their established functions. Andersson discloses both (i) receiving TPC commands from a base station and (ii) transmitting an uplink communication to the base station. This disclosure would have motivated a POSITA to seek out and utilize the teaching of Khan, which discloses such signaling techniques used by a base station for allocating uplink resources in a spread-spectrum communication system that similarly transmits TPC commands. ¶63 (Citations removed)
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3. Independent Claim 11 is Not Obvious over the Alleged Combination of Zeira, Baker, Khan and Tong

Accordingly, claim 11 is not obvious over the alleged combination of Zeira, Baker and Khan. Tong does not make up for the deficiencies of Zeira, Khan, and Tong, as set forth above. Accordingly, claim 11 is not obvious over the alleged combination of Zeira, Khan, and Tong. EX2005, ¶108.

4. Independent Claim 17 is Not Obvious Over Zeira, Khan and Tong for at Least the Same Reasons as Claim 11

While not identical to claim 11, claim 17 includes features similar to claim 11. Accordingly, claim 11 is not obvious over the alleged combination of Zeira, Khan and Tong for at least the same reasons as claim 11. EX2005, ¶109.

5. Dependent Claims 15, 16, 21 and 22 are Not Obvious over Zeira, Khan and Tong for at Least the Same Reasons as Based Claims 11 and 17

Claims 15 and 16 depend from claim 11, which is not obvious over the alleged combination of Zeira, Khan and Tong. Claims 21 and 22 depend from claim 17, which is not obvious over the alleged combination of Zeira, Baker, Khan and Tong. Accordingly, claims 15, 16, 21 and 22 are not obvious over the alleged combination of Zeira, Khan and Tong for at least the same reasons as claims 11 and 17. EX2005, ¶110.

E. Ground 5 – Claims 12, 13, 18 and 19 Are Not Obvious Over Zeira, Khan, Tong and Baker Pursuant To 35 U.S.C. § 103

Claims 12 and 13 depends from claim 11, which is not obvious over the alleged combination of Zeira, Khan and Tong. Claim 13 depends from claim 11, which is also not obvious over the alleged combination of Zeira, Khan and Tong. Baker does not make up for the deficiencies of Zeira, Khan and Tong. Accordingly, claims 3 and 13 are not obvious over the alleged combination of Zeira, Khan, Tong and Baker. EX2005, ¶111.

F. Ground 6 – Claims 14 and 20 Are Not Obvious Over Ziera, Khan, Tong and Dick Pursuant To 35 U.S.C. § 103

Claim 14 depends from claim 11, which is not obvious over the alleged combination of Zeira, Khan and Tong. Claim 20 depends from claim 17, which is also not obvious over the alleged combination of Zeira, Khan and Tong. Dick does

not make up for the deficiencies of Zeira, Khan and Tong. Accordingly, claims 14 and 20 are not obvious over the alleged combination of Zeira, Khan, Tong and Dick. EX2005, ¶112.

V. PETITIONER HAS NOT MET ITS BURDEN OF PROVING UNPATENTABILITY OF THE CHALLENGED CLAIMS

The Petition is required to include “[a] full statement of the reasons for relief requested, including a detailed explanation of the significance of the evidence including material facts,” 37 C.F.R. § 42.22(a)(2), which must include a statement of “[h]ow the challenged claim is to be construed” and “[h]ow the construed claim is unpatentable.” *Id.* § 42.104(b)(3)-(4). For the IPR to be instituted, the Petitioner must “show[] 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.

As stressed by the Federal Circuit:

It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial Petition identify with particularity the evidence that supports the grounds for the challenge to each claim. . . . [T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their Petition to institute. *Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1286–87 (Fed. Cir. 2017).

Accordingly, in an IPR, the patent challenger has the burden of producing evidence in the Petition to support a conclusion of unpatentability.

In the present case, the Petitioner has not established a prima facie of obviousness with respect to the alleged combination of Andersson and Khan (Ground 1), nor with respect to the alleged combination of Zeira, Khan, and Tong (Ground 3), as set forth above. Andersson and Zeira are both directed toward inventions wherein TPCs are sent on dedicated channels and, therefore, cannot be combined with Khan, which requires a shared channel. Accordingly, the Petitioner has not met its burden of producing evidence in the Petition to support a conclusion of unpatentability .

VI. CONCLUSION

For all the reasons set forth above, the Petition fails to establish that any of the Challenged Claims of the '500 Patent are unpatentable under 35 U.S.C. § 103. The proposed combinations in Grounds 1 through 6 are each based on impermissible hindsight, flawed legal reasoning, and a fundamental misreading of the prior art. Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to any challenged claim, as required by 35 U.S.C. § 314(a), and the Board should deny institution accordingly.

As discussed in detail above, Petitioner's primary references—Andersson and Zeira—are both expressly limited to dedicated physical control channels, and their power control schemes were designed and optimized around such a structure. The Petition seeks to improperly graft onto these references shared channel scheduling

techniques from Khan, which not only operate within a fundamentally different communications architecture, but are explicitly distinguished in the art as solving different problems associated with shared uplink resources. These channel types—dedicated and shared—are not interchangeable. They carry differing assumptions, serve different purposes, and use fundamentally distinct frame structures and addressing mechanisms. A person of ordinary skill in the art would not have had a reason to combine these references in the way proposed, and even if such motivation could somehow be inferred, the combination would frustrate the intended operation of the primary references and would not result in a system that meets the limitations of the Challenged Claims.

In particular, Claim 11's requirement of receiving, on a single physical channel, both an uplink resource allocation and a multi-level TPC command is not disclosed or suggested by any single reference or any properly supported combination. Petitioner's reliance on the vague "other bits" mentioned in Andersson or the high-level scheduling concepts in Khan does not fill the critical gaps in the asserted art. Petitioner's own expert fails to cite any support in the record for several key propositions and instead offers little more than paraphrased repetition of the Petition. Under well-established precedent, including *TQ Delta v. Cisco*, *Arendi v. Apple*, and PTAB precedential decisions such as *Xerox v. Bytemark*, such conclusory testimony is entitled to little or no weight.

The record further shows that the subject matter of the '500 Patent was thoroughly examined by the U.S. Patent and Trademark Office, including in the context of related family members. Indeed, the same Zeira reference relied upon here was considered and overcome during prosecution of the '828 and '326 Patents, and Patent Owner's successful arguments were expressly acknowledged in Notices of Allowance. The evolution of the claim language over time does not undermine the claims' validity; it confirms their strength and the diligence with which the claims were refined in light of relevant prior art. The USPTO has repeatedly recognized the patentability of the "single physical channel" architecture, and the Petition merely revisits arguments that have already been presented and rejected.

Additionally, Petitioner improperly seeks to relitigate issues raised in prior proceedings involving related patents, relying heavily on the fact of institution in those cases. But as the Board has repeatedly stated, institution decisions in separate IPRs—particularly where the claim language and arguments differ—have no preclusive effect and should not be substituted for the merits-based assessment required under § 314. Here, the Petition fails to provide sufficient factual or legal basis to disturb the integrity of the claims.

Finally, the Petition's failure to present a cogent and credible rationale to combine the cited references, its reliance on conclusory and duplicative expert testimony, and its disregard for key teachings in the art all underscore a broader

issue: the Petition is not grounded in the perspective of a skilled artisan applying well-established technical reasoning, but rather in a litigation-driven effort to reverse-engineer the claimed invention using hindsight. That is not the standard of obviousness contemplated by the statute or the case law. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959).

In sum, Petitioner has not met its burden to demonstrate that even a single challenged claim is likely unpatentable. The references relied upon are not properly combinable, fail to teach or suggest key limitations of the claims, and are unsupported by credible expert testimony or reasoned analysis. Accordingly, institution of IPR should be denied in its entirety.

Respectfully submitted,

Dated: April 9, 2025

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Patent Owner Preliminary Response complies with the type-volume limits of 37 C.F.R. § 42.24(b)(1) because it contains 10,821 words, excluding the parts of this Patent Owner's Preliminary Response that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Patent Owner's Preliminary Response.

Respectfully submitted,

Dated: April 9, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE** was served via email (as consented to by counsel) on April 9, 2025 to lead and backup counsel of record for Petitioners as follows:

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