

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,

Patent Owner

IPR2025-01044
U.S. Patent No. 11,516,879

PATENT OWNER'S PRELIMINARY RESPONSE

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The Board should deny institution of *inter partes* review (“IPR”) of U.S. Patent No. 11,516,879 (“’879 patent,” Ex. 1001). The Petition fails to show a reasonable likelihood that its asserted Zhou-Cherian-Kim combination renders obvious claim elements [1.5] and [1.6] of the ’879 patent. Those elements, referred to herein as the “when” limitations, were added in prosecution to overcome the cited prior art, including the Zhou and Cherian references discussed during prosecution.

None of Petitioner’s cited differences disclose, teach, or suggest elements [1.5] and [1.6]. Petitioner’s obviousness theory is based on conclusory and unsupported assertions and inaccurately characterize Zhou and Cherian’s disclosures. Other times, the Petition attempts to fill in gaps in the prior art based on what a POSITA allegedly “could” do. Overall, the Petition reflects an improper approach of by using the limitations of claim 1 of the ’879 patent as a roadmap to assert obviousness. This is impermissible hindsight and fails to establish a reasonable likelihood of invalidity of claim 1. The same deficiency applies to all challenged claims. Accordingly, institution should be denied.

I. THE ’879 PATENT

A. Overview

The ’879 patent is entitled “Wireless communication method using enhanced distributed channel access, and wireless communication terminal using same.” Ex. 1001 at 1 (54). The patent relates to wireless local area networks (WLANs),

particularly to enhanced channel access methods in uplink multi-user (UL MU) transmissions under WiFi standards (e.g., IEEE 802.11ax/HE). *See* Ex. 1001 at 1:35-2:67 (Background Art). The inventors propose modified EDCA (Enhanced Distributed Channel Access) parameter settings for wireless communication terminals (STAs) that are triggered for multi-user uplink transmissions, with the goal of improving coexistence and reducing collisions. *Id.* This addresses congestion issues and allows higher capacity when multiple STAs contend for channel access in high-density environments. *Id.*

The '879 patent describes and enables an STA to switch between two sets of EDCA parameters: (1) legacy EDCA parameter set and (2) MU EDCA parameter set. *See id.* at Figs. 6-7 and associated written description. The legacy EDCA parameter set is used for normal standalone channel access. The MU EDCA parameter set is used when the STA is triggered or scheduled by an access point (AP) for uplink MU transmissions, with less aggressive channel access behavior (e.g., larger contention windows, longer arbitration times). The STA sets a timer—"second parameter set timer" or MU EDCA timer—to define how long it should operate under the MU EDCA parameters before reverting to legacy EDCA.

As described in the '0879 patent, "MU EDCA parameters" are a set of EDCA-like channel access parameters, allow differentiation of traffic categories (like voice, video, best effort, background), applied after successful multi-user uplink (UL)

transmissions initiated by APs using trigger frames. *See id.* at Fig. 7 and associated written description. A MU EDCA timer is a countdown timer that controls how long a STA must apply MU EDCA parameters after a successful trigger-based MU transmission. *See id.* at 19:46-20:67. In regular EDCA, STAs contend for the channel in a distributed manner. But for trigger-based multi-user transmissions in 802.11ax, the participating STAs get benefits by having the chance to upload its own data from the AP's triggering. After a successful trigger-based MU transmission, the participated STAs should apply MU EDCA parameters for the time of MU EDCA timer. Thus, the MU EDCA timer helps channel access fairness between for example, legacy STAs and 11ax STAs.

These concepts are illustrated in exemplary embodiments of the '879 patent. As shown in Fig. 12, the STA switches to MU EDCA when an AP transmits a trigger frame for uplink MU transmission. After sending a trigger-based PPDU, the STA sets the second parameter set timer. When it expires, the STA reverts to legacy EDCA. This is described in Figs. 13-14 and associated written description.

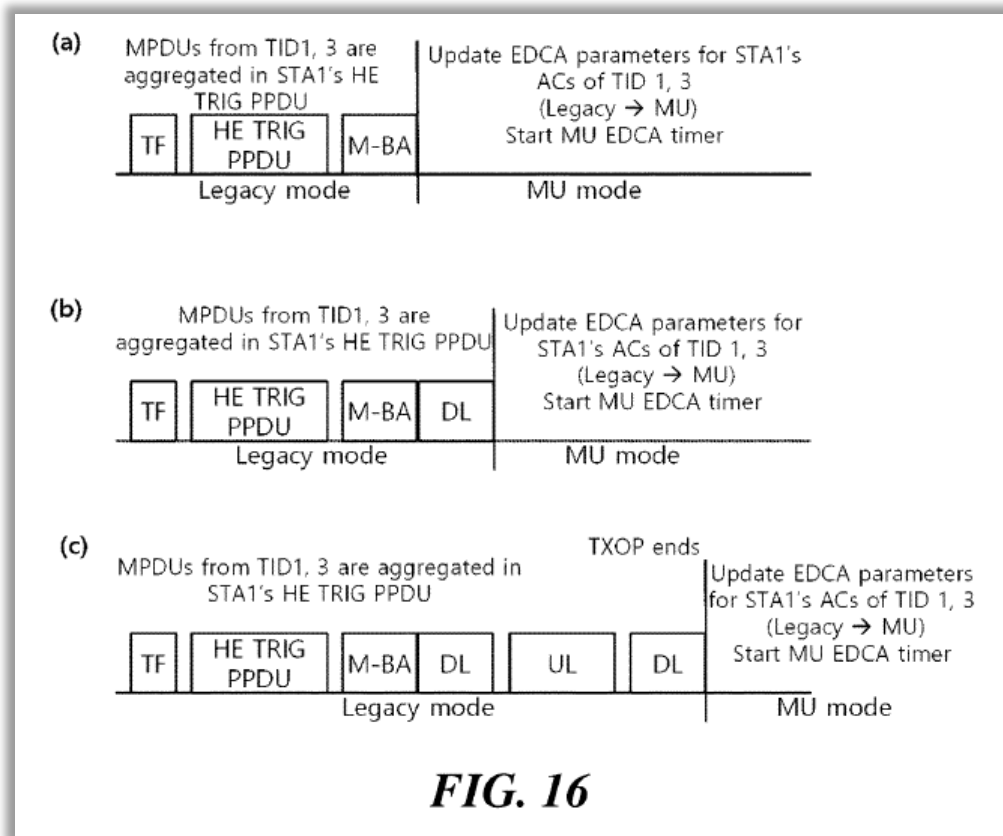
Figs. 16-17 describe additional exemplary features as described in the independent claims. *See id.* at 21:59-23:47. When the wireless communication terminal (STA) applies the MU EDCA parameter, the wireless communication terminal may set the MU EDCA timer. The STA may set the MU EDCA timer upon receiving the response to the trigger-based PPDU transmission. In this embodiment,

the STA may apply the MU EDCA parameter set when three conditions are satisfied. *See id.* at 22:7-47.

The first condition is that the wireless communication terminal receives the trigger frame that triggers the transmission of the wireless communication terminal from the base wireless communication terminal. *Id.* The second condition is to transmit the trigger-based PPDU including the QoS data frame to the base wireless communication terminal according to the reception of the trigger frame. *Id.* The third condition is that the wireless communication terminal receives an immediate response to the trigger based PPDU from the base wireless communication terminal. *Id.* At this time, an immediate response may indicate that the recipient transmits a response to the originator within a predetermined time period during the same transmit opportunity (TXOP). *Id.*

When these three conditions are satisfied, the STA may apply the MU EDCA parameter set to the AC of the QoS data frame included in the trigger-based PPDU transmitted by the wireless communication terminal. *Id.* In addition, the STA may apply the MU EDCA parameter set at the time point at which the immediate response reception for the trigger-based PPDU from the base wireless communication terminal is completed. *Id.* Also, when the conditions are satisfied before the MU EDCA timer expires, the STA may update the MU EDCA timer with a period corresponding to the MU EDCA parameter set. *Id.* When the MU EDCA timer

expires, the STA terminates the MU EDCA parameter set application. *See generally* Figs. 16-17 and associated written description.¹



B. Challenged Claims

The challenged claims of the '879 patent are claims 1-10. Pet. at 1. Claims 1 and 8 are independent claims and claims 2-7 and 9-10 are dependent claims. Independent claim 1 recites:²

¹ All emphasis added unless otherwise noted.

² For convenience and purposes of this IPR, Patent Owner adopts the labeling of claim elements set forth in the Petition. *See* Pet. at vi.

Identifier	Claim Language
[1.pre]	A wireless communication terminal that wirelessly communicates with a base wireless communication terminal, the wireless communication terminal comprising:
[1.1]	a transceiver; and a processor, wherein the processor is configured to:
[1.2]	receive, from the base wireless communication terminal, a trigger frame using the transceiver, wherein the trigger frame triggers a orthogonal frequency division multiple access (OFDMA) uplink transmission of the wireless communication terminal,
[1.3]	transmit, to the base wireless communication terminal, a trigger-based physical layer protocol data unit (PPDU) in response to the trigger frame using the transceiver,
[1.4]	switch a parameter set, which is a set of parameters used for the channel access, from a first parameter set to a second parameter set based on whether the base wireless communication terminal triggers a multi-user uplink transmission participation of the wireless communication terminal,
[1.5]	when a MAC protocol data unit (MPDU) included in the trigger-based PPDU does not request an immediate response, set a second parameter set timer for an access category of the MPDU when the transmission of the trigger-based PPDU ends,
[1.6]	when the MPDU included in the trigger-based PPDU requests the immediate response, set the second parameter set timer for the access category of the MPDU for which immediate response is received,
[1.7]	when the second parameter set timer expires, terminate an application of the second parameter set, and

[1.8]	access a channel according to a priority of data to be transmitted to the base communication terminal by the wireless communication terminal and the parameter set.
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C. Prosecution History

The '879 patent issued from U.S. Application No. 17/383,479, filed July 23, 2021. Ex. 1001 at 1 (21) & (22). As Petitioner notes, during prosecution of the '879 patent, no claim rejections were made. Pet. at 7. The application was allowed following an examiner discussing formalities, and the cancellation of two dependent claims by the Examiner's amendment. *Id.*

The Petition discusses the prosecution of the '879 patent's parent application, Application No. 16/294,884, which issued as U.S. Patent No. 11,160,035. *Id.* Patent Owner agrees that the prosecution of the parent '884 application is relevant, and provides the following summary, as set forth in Patent Owner's Preliminary Response in IPR2025-01043 on the '035 patent.

During prosecution of the '884 application, on June 23, 2020, the Examiner issued a non-final rejection rejecting the currently pending claims (claims 21-40) as being obvious over combinations of references including Cherian and Zhou. Ex. 1013 (FH of '035 patent) at 721-737.

On September 22, 2020, the Applicant submitted an amendment and request for reconsideration after non-final rejection. *Id.* at 699-710. The applicant amended

pending claim 21 as follows, replacing the limitation “set a second parameter set timer based on whether a response to a MAC protocol data unit (MPDU) included in the trigger based PDDU is received” with two “when” clauses (*id.* at 700):

Listing of claims

1-20. (Canceled).

21. (Currently Amended) A wireless communication terminal that wirelessly communicates with a base wireless communication terminal, the wireless communication terminal comprising:

a transceiver; and

a processor,

wherein the processor is configured to:

transmit, to the base wireless communication terminal, a trigger-based physical layer protocol data unit (PPDU) using the transceiver,

switch a parameter set, which is a set of parameters used for the channel access, from a first parameter set to a second parameter set based on whether the base wireless communication terminal triggers a multi-user uplink transmission participation of the wireless communication terminal,

when a MAC protocol data unit (MPDU) included in the trigger-based PPDU does not request an immediate response, set a second parameter set timer for an access category of the MPDU when the transmission of the trigger-based PPDU ends,

when the MPDU included in the trigger-based PPDU requests the immediate response, set the second parameter set timer for the access category of the MPDU for which immediate response is received,

~~set a second parameter set timer based on whether a response to a MAC protocol data unit (MPDU) included in the trigger-based PPDU is received,~~

when the second parameter set timer expires, terminate an application of the second parameter set, and

access a channel according to a priority of data to be transmitted to the base communication terminal by the wireless communication terminal and the parameter set.

The Applicant also addressed and distinguished Cherian in view of Zhou as follows. It noted that Cherian and Zhou fail to disclose, teach, or suggest the added “when” limitations. *Id.* at 706. As to Cherian, the Applicant noted that “The Office Action acknowledges that ‘Cherian does not explicitly teach, wherein the processor is configured to determine when to set the second parameter set timer based on a type of responding requested by the MPDU included in the trigger-based PPDU’ (Office Action: page 11).” *Id.* Accordingly, Cherian does not disclose, teach, or suggest the “when” limitations added by amendment. *Id.*

As to Zhou, the Applicant explained that Zhou failed to cure the deficiencies of Cherian with respect to the “when” limitations. *Id.* at 707. In the Office Action, the Examiner indicates that “Zhou teaches the wireless communication terminal may set second parameter timer after the wireless communication terminal transmits a scheduled UL transmission, or transmits a scheduled UL transmission and gets an ACK message (Provisional application No. 62/278,268: ¶[0081]).” *Id.* The Applicant then distinguished Zhou in several ways.

The Applicant explained that paragraph [0081] of Provisional Application No. 62/278,268 of Zhou states that “the STA 106 may reset timer/counter to zero *after the STA 106 transmits a scheduled UL transmission, or transmits a scheduled UL transmission and gets an ACK message*” (emphasis added).” *Id.* But “reset[ting] timer/counter to zero after the STA 106 transmits a scheduled UL transmission, or

transmits a scheduled UL transmission and gets an ACK message” in Zhou is *not* a disclosure, teaching or suggestion of the “when” limitations. Further, the “scheduled UL transmission” referred in paragraph [0081] of Zhou does not indicate a type of response, but instead it indicates an initiation type of the UL transmission. *Id.* Additionally, nowhere does Zhou mention the “*immediate response*” recited in pending claim 21 (emphasis added). *Id.* For these reasons, the Applicant argued, Zhou does not cure Cherian’s failure to teach the “when” limitations.

On January 19, 2021, the Examiner issued a notice of allowability for pending claims, including pending claim 21. *Id.* at 362-365. The Examiner indicated that the notice of allowability was responsive to the Applicant’s September 22, 2020 amendment and request for reconsideration. *Id.* at 362. This indicates that the Examiner credited the Applicant’s arguments and agreed that Cherian in view of Zhou did not render obvious the allowed claims of the ’035 patent.

D. Priority Date

The claims of the ’876 patent claim priority to a Korean ’822 application (10-2016-0114822) filed on September 7, 2016. Ex. 1001 at 1-2, (63) & (30). Petitioner asserts that “all references presented in this Petition pre-date September 7, 2016 and, thus, constitute prior art.” Pet. at 2. Patent Owner agrees that the claims are entitled to a priority date no earlier than September 2016. The Petition doesn’t challenge the priority and treats September 2016 as the operative priority date. *See id.* Thus, Patent

Owner will adopt that date for purposes of this IPR.

II. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes the following definition for a person of ordinary skill in the art (POSITA): a POSITA “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and at least 3 years of experience in the research, design or development of wireless communication devices, systems, and/or networks, or the equivalent, as of the Critical Date. Increased educational experience can make up for less work experience, and vice versa.” Pet. at 4 (citations omitted).

For purposes of this preliminary response, Patent Owner does not challenge Petitioner’s proposed definition. Patent Owner reserves the right to challenge the definition or propose an alternative definition if IPR is instituted.

III. CLAIM CONSTRUCTION

The Petition contends that no formal claim constructions are necessary and that each term carries its plain and ordinary meaning. Pet. at 4. For purposes of this preliminary response, Patent Owner agrees that no formal claim construction is necessary. This is because Petitioner fails to show a reasonable likelihood of unpatentability under the plain and ordinary meaning of the claims. Patent Owner reserves the right to propose constructions or respond to Petitioner’s or the Board’s claim interpretations if IPR is instituted.

IV. OVERVIEW OF PRIOR ART

A. Zhou (Ex. 1004)

Zhou is U.S. patent application publication (Pub. No. US 2017/0202023). Zhou is entitled “Methods and apparatus for selecting enhanced distributed channel access parameters for different stations.” Ex. 1004 at 1 (54).

According to the Abstract: “In some aspects, a method for configuring channel access parameters in a wireless communication system includes determining, at an access point, an enhanced distributed channel access (EDCA) parameter for a first subset of stations of a plurality of stations, the first subset of stations capable of transmitting multi-user uplink transmissions.” *Id.* at 1 (57). “The method further includes generating an information element including the EDCA parameter. The method further includes transmitting the information element such that the information element is decodable by the first subset of stations and not by a second subset of stations of the plurality of stations.” *Id.*

Fig. 5 of Zhou shows a flow chart of an implementation of a method 500 of wireless communication in a wireless communication system. The method 500 may be used to generate and/or transmit any of the EDCA parameters, the information element 300, or EDCA parameter set IE 400 described in connection with FIGS. 3-4. Ex. 1005 at [0077]:

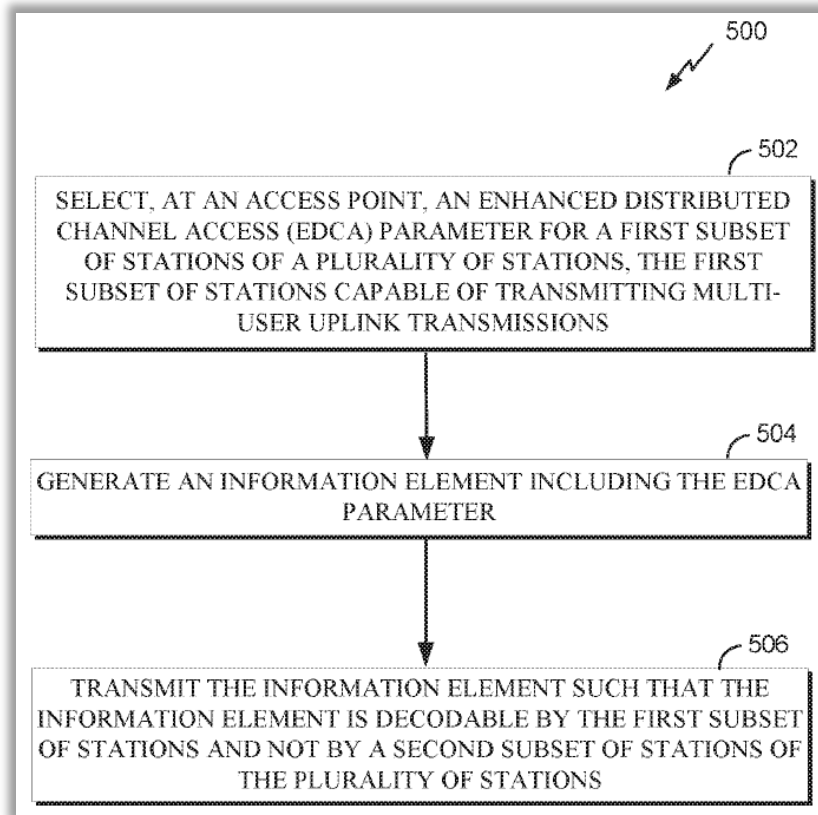


FIG. 5

Zhou further states, regarding Figure 5, that: “Although the method steps may be described as occurring in a certain order, the steps can be reordered, omitted, and/or additional steps may be added.” *Id.*

B. Cherian (Ex. 1006)

Cherian is a U.S. patent application publication (Pub. No. US 2017/0325264). Cherian is entitled “Backoff techniques for transitioning between single-user and multi-user modes.” Ex. 1006 at 1 (54).

According to the Abstract: “Methods and apparatus for determining backoff values when transitioning between single-user (SU) and multi-user (MU) modes are provided.” *Id.* at 1 (57). “A station (STA) transitions from a Single-User (SU) mode, in which a first set of parameters is used to attempt to access a medium, to a Multi-User (MU) mode, in which a second set of parameters is used to attempt to access the medium.” *Id.* “The STA determines, upon transitioning back from the MU mode to the SU mode, one or more values to use for setting corresponding one or more of a set of backoff counters.” *Id.* “The STA attempts, after setting the one or more backoff counters, to access the medium for one or more SU transmissions based on the set of backoff counters.”

C. Kim (Ex. 1008)

Kim is a U.S. patent application publication (US 2018/0034595). Kim is entitled “Method for transmitting and receiving policy indicator-based acknowledgement/ non-acknowledgement signal in wireless lan system, and device therefor.” Ex. 1008 at 1 (54).

The Abstract states: “According to the present invention an AP transmits a trigger frame to a plurality of stations (STAs), and transmits an ACK/NACK signal for data received from the plurality of STAs when the data is received from the plurality of STAs in response to the trigger frame.” *Id.* at 1 (57). “At this time, an ACK policy value having a specific value is set in one or more STAs among the

plurality of STAs, the AP transmits, through a multi-user block ACK (M-BA) frame, an ACK/NACK signal for STAs excluding the one or more STAs among the plurality of STAs, and the ACK/NACK signal for the one or more STAs is transmitted in response to a block ACK request message received from the one or more STAs.” *Id.*

V. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF UNPATENTABILITY FOR ANY CHALLENGED CLAIM

The Petition fails to show that the asserted three-way combination of Zhou, Cherian, and Kim render obvious claim elements [1.5] and [1.6] of the '879 patent. Those elements, referred to herein as the “when” limitations, recite a claimed wireless communication terminal with a processor configured to:

Identifier	Claim Language
[1.5]	when a MAC protocol data unit (MPDU) included in the trigger-based PPDU does not request an immediate response, set a second parameter set timer for an access category of the MPDU when the transmission of the trigger-based PPDU ends,
[1.6]	when the MPDU included in the trigger-based PPDU requests the immediate response, set the second parameter set timer for the access category of the MPDU for which immediate response is received,

None of the cited references disclose, teach, or suggest these limitations. Petitioner’s obviousness theory is based on conclusory and unsupported assertions and

inaccurate characterizations of the cited references. Other times, the Petition attempts to fill in gaps in the prior art based on what a POSITA allegedly “could” do. Overall, the Petition reflects an improper approach of by using the limitations of claim 1 of the '879 patent as a roadmap to assert obviousness. This fails to establish a reasonable likelihood of invalidity of claim 1. The same deficiency applies to all challenged claims. Accordingly, institution should be denied.³

A. The Petition Fails to Show Obviousness of the Claimed “When a MPDU Included in the Trigger-Based PPDU Does Not Request an Immediate Response”

The Petition asserts that “Zhou-Cherian-Kim renders obvious configurations *when a (MPDU) . . . does not request an immediate response.*” Pet. at 41 (emphasis in original) (citations omitted). The Petition does not rely on any disclosure of Zhou or Cherian for the “immediate response” requirement. Indeed, there is no support for this requirement in either of those references. For example, during prosecution,⁴ the Applicant emphasized that “nowhere does Zhou mention the ‘immediate response’

³ The deficiencies discussed for independent claim 1 applies to all challenged claims 1-10. Dependent claims 2-7 depend on claim 1, and the Petition relies on the same theory for the limitations of claim 1 that appear in claims 2-7. *See* Pet. 63-67, 77-82, 88-96. Claim 8 is an independent claim. For elements [8.4] and [8.5], the Petition cites its showing for elements [1.5] and [1.6]. *See id.* at 71. Thus, the same deficiency discussed for claim 1 applies to claim 8 and dependent claims 9-10.

⁴ As discussed above and consistent with the Petition, Patent Owner refers to the prosecution of the parent '884 application, which addressed the same limitations that issued in the '879 claims. Patent Owner uses “prosecution” with that context.

recited in pending claim 21, which issued as claim 1 of the '035 patent. Ex. 1002 ('035 FH) at *Id.* at 707. In response to this argument, the Examiner withdrew its obviousness rejection based on Zhou and allowed the claims. The same limitations of claim 1 of the '035 patent appears in claim 1 of the '879 patent.

The Petition relies on Kim for the “immediate response” limitation. *See* Pet. at 40-45. But despite devoting several pages, it does not (and cannot) point to any disclosure, teaching, or suggestion in Kim of performing the claimed operation “when a MPDU included in the trigger-based PPDU does not request an *immediate response*” The Petition fails to show that or explain how Kim’s reference to acknowledgements, “e.g., “normal acknowledgement” and “no acknowledgement” (Pet. at 42) constitutes the claimed immediate response. Further, there is no disclosure or suggestion in Kim of suing the ACK policy as a criterion for setting a second EDCA parameter set timer.

Thus, the Petition resorts to alleging that: “A POSITA would have understood and found obvious that whether an MPDU includes, or does not include, a request for an immediate response is a design choice contemplated by Kim.” *Id.* at 43. This is entirely conclusory and insufficient to establish a reasonable likelihood of unpatentability. Nowhere does Kim (or any other cited reference) discuss a request for an immediate response being a “design choice.” The Petitioner should not be allowed to resort to alleged “design choices” to satisfy a limitation missing from the

prior art. This further reflects impermissible hindsight by using limitations of the challenged claim as a roadmap to assert obviousness.

B. The Petition Fails to Show Obviousness of the Claimed “Set a Second Parameter Set Timer for an Access Category of the MPDU When the Transmission of the Trigger-Based PPDU Ends”

The Petition asserts that “Zhou-Cherian-Kim renders obvious that the STA can *set a second parameter set timer for an access category of the MPDU when the transmission of the trigger-based PPDU ends.*” Pet. at 45 (emphasis in original). But the Petitioner’s showing is conclusory and unsupported, and rests on inaccurate characterizations of the Zhou and Cherian references.

Cherian’s provisional application (Ex. 1007) expressly defines MU EDCA Timer as indicating “the duration of time, in units of Tus, for which the provided MU EDCA parameters are valid after reception of a Trigger frame.” Ex. 1007 at [0063]. Thus, Cherian is directed to and only allows embodiments in which the MU EDCA timer starts from when the trigger frame is received. This means that, according to Cherian, the timer is always set after reception of a Trigger frame. And after receiving a trigger frame from the AP, a STA transitions to the MU mode and starts applying the MU EDCA Parameter set.

In contrast, according to claim 1 of the '879 patent, only after receiving a response to the MPDU in the trigger frame, the wireless communication terminal switches to a MU mode and starts applying the second EDCA parameter set. Further,

according to claim 1, the second EDCA parameter set timer starts at a time point which is determined according to the type of response requested by the MPDU included in the trigger-based PPDU. When the MPDU included in the trigger-based PPDU requests an immediate response, the wireless communication terminal switches to MU mode and starts using the second EDCA parameter set only after receiving the response to the MPDU. *See* Ex. 1001 at Fig. 16a and associated written description, e.g., at column 22.

Cherian is materially different from and does not disclose setting the MU EDCA timer at a time point which depends on the type of response requested by the MPDU in the trigger-based frame. This is because in Cherian, the MU EDCA timer is only started after receiving the trigger frame.

The Petition asserts that “Zhou’s disclosure of resetting the timer ‘after the STA 106 transmits a scheduled UL transmission, or transmits a scheduled UL transmission and gets an ACK message’ or ‘after the STA 106 transmits a non-scheduled UL transmission, or transmits a non-scheduled UL transmission and gets an ACK message’ demonstrates various times at which the setting or resetting of a timer could have occurred.” *Id.* at 46. This is unsupported and fails.

But the “timer/counter” described in Zhou’s provisional application is not related to the “second parameter set timer” as recited in claim 1 of the ’879 patent. In Zhou, the “timer/counter” is a parameter used to determine poor performance, not

to determine whether a time interval for MU mode has expired. This is demonstrated by paragraph [0079] of the Zhou provisional:

Additionally, embodiments described herein also relate to options allowing the first subset of STAs (e.g., scheduled mode STAs) to transition from operating in scheduled mode to operating in legacy mode. In some aspects, a scheduled mode STA 106 may revert back to legacy mode EDCA parameters *if selecting scheduled mode EDCA parameters gives poor performance*. In these aspects, *the fallback to legacy mode may then provide better performance for the scheduled mode STA 106 and increase*. In some aspects, *poor performance can be determined by determining that the STA 106 (with buffered data) is not scheduled for UL transmission after 'X' seconds*. In some aspects, *poor performance can be determined by determining that the STA 106's non-scheduled transmission fails for 'Y' attempts*. In some aspects, *poor performance can be determined by determining that the STA 106 is not scheduled after sending UL scheduling request, e.g., buffer status report, for 'Z' times.*"

Ex. 1005 at [0079] (emphasis added).

In each instance the “timer/counter” of Zhou is a parameter used to determine poor performance, not to determine whether a time interval for MU mode has expired. This is distinguished from the “MU EDCA timer” of Cherian, which is defined as “the duration of time, in units of T_{us} , for which the provided MU EDCA parameters are valid after reception of a Trigger frame.” The Petition fails to reconcile these disparate teachings from Zhou and Cherian, which undermines its obviousness assertion. Likewise, Zhou’s “timer/counter” used to determine poor performance is clearly distinguished from the “second parameter set timer” recited in claim 1 of the '879 patent.

Further, contrary to the Petition's assertion, Zhou does not contain any disclosure or suggestion about how to select the time point for resetting or zeroing a timer/counter among "transmits a scheduled UL transmission" and "transmits a scheduled UL transmission and gets an ACK message." Pet. at 46. Tellingly, the Petition asserts that Zhou demonstrates "various times at which the setting or resetting of a timer *could have occurred*." *Id.* (emphasis added). The reference to what "could have" occurred undercuts the Petition's obviousness theory and fails to show that a POSITA *would be motivated* to combine the references to arrive at the claimed invention.

The Petition's argument also fails because Zhou and Cherian do not discuss the claim requirement of an "immediate response" or setting / resetting timers in that context or for that purpose. As discussed in the prosecution history, Zhou and were cited by the Examiner in the first non-final rejection. In response to the Applicant's amendment for the "when" limitations, the Examiner allowed the claims. This was based on the Applicant's arguments that Zhou does not distinguish between cases where an immediate response is required or desirable and those where it is not. Neither Zhou nor Cherian are directed to this problem or scenario.

C. The Petition Fails to Address Additional Differences Between the '879 Claims and Relied on Prior Art

In the '879 patent and as reflected in claim elements [1.5] and [1.6], a STA uses different EDCA parameters based on whether the STA has participated in the uplink (UL) MU procedure. The Petition relies on disclosures and embodiments of Zhou that are different. For example, in Zhou, a STA uses different EDCA parameters based on capability (not based on actual participation or transmission). Ex. 1005 at [0043] [0050] [0072] (discussing determination “based on the capabilities of the STA 106”). As another example, Zhou discusses termination based on legacy mode transmission results. *Id.* at [0073]. The Petition fails to establish that a POSITA would be modify Zhou’s different use of EDCA parameters to arrive at the claimed invention of the '879 patent.

According to Zhou, a UL-MU capable STA may switch from legacy mode EDCA to scheduled mode EDCA only if the STA’s legacy mode transmissions have had poor performance. Thus, in Zhou switching from the legacy EDCA parameters to scheduled mode EDCA parameters does not occur when the AP triggers a multi-user uplink transmission participation of the station. The switching only occurs if the STA experienced poor transmission performance in legacy mode.

For this reason, Zhou does not disclose a second EDCA parameter set timer as claimed. Zhou’s timer/counter only relates to evaluating the STA’s performance

in the scheduled EDCA mode. It is not a timer which establishes how long the scheduled mode EDCA parameters are valid. Thus, the Petition fails to show that a POSITA attempting to improve Cherian's method for switching from an EDCA SU mode to a EDCA MU mode, would have looked to Zhou's disclosures regarding timer/counter. Further, any alleged combination of Cherian with Zhou would not arrive at the claimed invention because neither Cherian nor Zhou discloses or suggests setting a timer for an AC of the MPDU depending on the type of response request by the MPDU in the trigger-based PPDU.

VI. CONCLUSION

Because the Petition fails to show a reasonable likelihood of unpatentability for the challenged claims of the '879 patent, institution should be denied.

Date: September 17, 2025

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), I certify that there are 4,799 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

Date: September 17, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(1), I certify that the above document was served on September 17, 2025 by filing this document through the Patent Trial and Appeal Case Tracking System as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

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