

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

Case IPR2025-01043
U.S. Patent No. 11,116,035

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Discretionary Denial Considerations Favored Referral	2
	A. The Challenged Patents are involved in a complex and diverse litigation proceeding.....	2
	B. The Referral Decision properly found the Examiner had committed material error	5
	1. The Examiner Overlooked Important Disclosure in Cherian and Zhou	6
	2. The Examiner Failed to Conduct an Adequate Search That Would Have Led to the Kim Reference.....	8
III.	Conclusion	15

I. Introduction

Patent Owner's Request for Director Review ("the Request") of the Decision Referring Petitions to the Board ("the Referral Decision") (Paper 11) fails to establish any abuse of discretion, important issues of law or policy, erroneous findings of material fact, or erroneous conclusions of law and should thus be denied. Director Review Process, Section 2.B, *available at* <https://www.uspto.gov/patents/ptab/decisions/director-review-process>.

Regarding discretionary denial, Patent Owner has not shown that the Acting Chief Administrative Patent Judge's decision to refer the Petition to the Board was made in error. It is undisputed that the '035 Patent is one among twelve patents spanning eight different families that Patent Owner has asserted against Petitioner. Paper 11, 3 ("The large number and wide scope of the patents . . . weighs against discretionary denial, as the Board is better suited to review a large number of patents involving diverse subject matter.") The '035 Patent is thus involved in a complex and diverse district court proceeding. The Request also fails to refute the Acting Chief Administrative Patent Judge's finding that the examiner committed material error during examination of the '035 Patent, or that reliance on that material error to refer the Petition to the Board was itself in error. Paper 11, 3 ("Petitioner provides persuasive evidence that the Office erred in a manner material to the patentability of the challenged claims in at least some of the challenged patents.")

II. Discretionary Denial Considerations Favored Referral

A. The Challenged Patents are involved in a complex and diverse litigation proceeding

Patent Owner's argument that "the IPRs Samsung has brought against Wilus do not present [a] 'diverse range of subject matter'" is flawed for several reasons.

As a preliminary matter, Patent Owner's framing of "the IPRs Samsung has brought against Wilus" mischaracterizes the Acting Director's analysis in *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00217, Paper 9 at 2-3 (Jun. 13, 2025) and in *Shenzhen Tuozy Tech. Co., Ltd. v. Stratasy, Inc.*, IPR2025-00438, Paper 10 (Jul. 17, 2025). Rather than focusing on the IPR challenge, the Acting Director in *Tesla* cited the "**complex and diverse litigation proceeding**." *Tesla*, 2-3 (emphasis added). Similarly, the Acting Director cited the "large number and vast scope of the patents asserted in the **district court litigation**" as "weigh[ing] against discretionary denial, as the Board is better suited to review a large number of patents involving diverse subject matter." *Shenzhen*, 3 (emphasis added) (citing *Tesla*, 2-3). Patent Owner's challenge is additionally limited only to whether the patents-at-issue are diverse. Notably, Patent Owner does not challenge the complexity of addressing **twelve** patents in district court litigation.

Nonetheless, as explained in Petitioner's Opposition to Patent Owner's Request for Discretionary Denial, the patents in the co-pending litigation involve a di-

verse range of subject matter, where “the ’035 patent is but one of 12 patents spanning eight different families that Wilus has asserted against Samsung in District Court.” Paper 9, 6-7. This is no different than the scenarios in *Tesla* and in *Shenzhen*. Namely, the patents-in-suit in *Tesla* involved “eleven patents spanning nine different families that involve a diverse range of subject matter.” *Tesla*, 3. Similarly, the patents-in-suit in *Shenzhen* involved “nine different patents spanning six families that involve a diverse range of subject matter.” *Shenzhen*, 3.

Patent Owner’s attempts to distinguish the present case from *Tesla* and from *Shenzhen* are unavailing. For instance, with respect to *Shenzhen*, while all patents were generally directed to 3D printing, they cover diverse aspects of that technology. *Shenzhen*, Paper 9 at 7-9 (Jul. 9, 2025). Similarly, here, while all patents-in-suit relate generally to wireless technologies, they, too, cover diverse aspects of wireless technologies, ranging, for example, from “enhanced distributed channel access prioritization” to “legacy and modern device coexistence via physical layer frame designs” to “signaling user-specific fields and spatial stream configurations in multi-user MIMO transmissions” as in the case of the ’035 Patent. Paper 9, 7-8. Patent Owner’s characterization of the technology claimed in each of the patents in the pending litigation as simply relating to “features of the 802.11ax standard that improve efficiency and performance of wireless communications in congested spectrum” is an overgeneralization. *See Request*, 3-4.

Patent Owner’s argument that the relatedness of the subject matter can be seen from the overlapping prior art (“including the various versions of the 802.11 standards that are relied upon as purported prior art”) is incorrect. First, petitions for only three of the 12 patents-in-suit include grounds that rely on IEEE 802.11 standards as prior art. Patent Owner’s argument further ignores the diverse aspects of wireless technology covered in the various IEEE 802.11 standards documents, including the physical (PHY) layer responsible for the actual transmission of data, and the medium access control (MAC) layer that controls access to a shared wireless medium and handles functions such as authentication and frame control. Patent Owner further alleges that “[t]he fact that all eight of these patents are alleged to be rendered obvious by versions of the 802.11ax standard or patents that are directed to improvements [of] that very same standard refutes any argument that the situation here is comparable to those in *Tesla* or *Shenzhen*.” Request, 4-5. However, since all of the patents-in-suit relate, *generally*, to wireless standards, it is not surprising that the wireless standards themselves—and patents similarly directed to aspects of those standards—would form the basis for invalidity grounds. But again, Patent Owner conveniently ignores the complicated nature of wireless technology—indeed the D1.0 standard alone is over 450 pages.

Finally, Patent Owner alleges in its Request that the discretionary denial factors were “decided in error, based upon misleading representations by Samsung that

Wilus was not afforded an opportunity to rebut.” Request, 2. Notably, however, Wilus made no such request of the Director to rebut any alleged “misleading representations,” despite the guidance on the bifurcated process at the time permitting parties to request additional briefing on discretionary issues. FAQs for Interim Process for PTAB Workload Management, Question 17 (“A patent owner who wants to request a reply should send an email request, with a copy to counsel for all parties, to Director_Discretionary_Decision@USPTO.gov.”), *available at* <https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management>. Indeed, Patent Owner could have been afforded such an opportunity to rebut any of Petitioner’s arguments in a timely manner pre-institution if it had simply asked to do so. It did not.

B. The Referral Decision properly found the Examiner had committed material error

Patent Owner states that the decision “did not identify any such [material] errors in the prosecution of the ’035 patent.” Request, 2. This misrepresents the decision’s statements.

The decision stated, “Petitioner provides persuasive evidence that the Office erred in a manner material to the patentability of the challenged claims in at least some of the challenged patents.” Paper 11, 3. The decision then briefly provides examples from IPR2025-00933 and IPR2025-00934. Paper 11, 3-4. The omission of examples or details of each of the 8 IPRs addressed in the decision is not equivalent

to saying that the decision found no error in the '035 patent. Instead, the decision explicitly states that the Office erred in “some” of the challenged patents without mentioning whether any of the IPRs, much less the IPR addressing the '035 patent, failed to show material error. Paper 11, 2.

As explained in Petitioner’s opposition (Paper 9), the Examiner erred in multiple ways during examination of the '035 patent.

1. The Examiner Overlooked Important Disclosure in Cherian and Zhou

To start, the Examiner applied Cherian in view of IEEE 802.11-16/1180r0 for a first rejection and Cherian in view of Zhou (both references used in Ground 1 of the Petition) for a second rejection. SAMSUNG-1002, 732, 737.

7. Claims 21, 22, 24, 25, 33, 34, 36 and 37 are rejected under 35 U.S.C. 103 as being unpatentable over Cherian in view of Zhou et al. (US 2017/0202023 A1, hereinafter “Zhou”).

SAMSUNG-1002, 737.

In fact, similar to the Petition, the Examiner cited to the provisional applications of both Cherian and Zhou in support of the rejection. SAMSUNG-1002, 737-740. However, the original rejection lacked specificity with respect to the rejection of dependent claims 22-25. *Id.*, 737-740. In response to the generalized and non-specific rejection of these dependent claims, Wilus amended the independent claim

to include a combination of features recited in claims 22-25 and canceled claims 22-25. SAMSUNG-1002, 929-930, 700-701. The claim amendments correlate to claim elements [1.4] and [1.5] in the Petition. Samsung's Petition presents a more thorough and technically accurate analysis of the features of these claims using the same references, showing with greater specificity how each claim element is disclosed or rendered obvious. Pet., 26-63 (all of claim 1), 39-61 (the amended elements [1.4] and [1.5] that lead to allowance). The Petition's improved mapping of these features highlights that the original rejection (of the features originally described in claims 22-25, and then crafted into the features amended into the independent claims) was not fully developed and that the Examiner's conclusions were based on an incomplete understanding of the prior art. This lack of understanding is exhibited by i) the lack of specificity in the rejection of the features described in claims 22-25 and the ultimate amendment to the independent claims, as well as ii) the inadequate searching of prior art demonstrated by the lack of proper terminology used in the search terms (discussed in more detail below).

For example, Cherian discloses using a timer with a value corresponding to the period of time during which Uplink Multi-User (UL-MU) transmissions should occur. Pet., 39 (citing SAMSUNG-1007, 0058, 0063). Elements [1.4] and [1.5] (the elements amended to gain allowance) concern whether or not the MAC Protocol Data Unit (MPDU) requests an "immediate response" (e.g., an ACK signal) from

the Access Point, and using that condition to determine when the timer is used. First, if no ACK is requested [1.4] uses the timer “when” transmission of the trigger-based PPDU ends and, second, if an ACK is requested, [1.5] uses the timer upon receipt of the ACK signal. *Id.* As shown below in Kim’s Tables 6 and 7, Kim provides an example of ACK policies that would govern both of the above-described conditions.

After this amendment to elements [1.4] and [1.5], the Examiner subsequently allowed the claims without considering Kim (or any other reference equivalent to Kim’s disclosure), which clearly teaches the subject matter added by amendment e.g., ACK policies for whether or not an ACK is requested. Had Kim been found and applied, i) the prior dependent claims 22-25 would have been rejected and ii) the amended claims would also have been rejected. The failure to identify and apply Kim, which presents simplified and commonly known acknowledgement policies for transmissions, represented a further material error in prosecution, as the allowance of the claims was not based on a complete or accurate consideration of the most relevant prior art.

2. *The Examiner Failed to Conduct an Adequate Search That Would Have Led to the Kim Reference*

In addition, a thorough search should have led the Examiner to the Kim reference (US 2018/0034595) asserted in Ground 1. This is particularly true given the

generic and well-known nature of what Kim contributes to the teachings. Specifically, Kim teaches a series of acknowledgement (ACK) policies regarding whether transmitters and receivers are required to acknowledge signals and under what conditions. Pet., 18-19, 40-45; SAMSUNG-1008, Tables 6-7, 0093-0110. For example, Kim's Tables 6 and 7 (below) demonstrate at least one example of how Kim simply states the well-known nature of ACK policy configurations.

TABLE 6

ACK Policy == 00

Normal ACK or Implicit Block ACK Request.

In a frame that is a non-A-MPDU frame or VHT single MPDU:

The addressed recipient returns an ACK or QoS +CF-ACK frame after a short interframe space (SIFS) period, according to the procedures defined in ACK procedure and HCCA transfer rules. A non-DMG STA sets the ACK Policy subfield for individually addressed QoS Null (no data) frames to this value.

Otherwise:

The addressed recipient returns a Block ACK frame, either individually or as part of an A-MPDU starting an SIFS after the PPDU carrying the frame, according to the procedures defined in Block ACK procedure, Generation and transmission of Block ACK frames by an HT STA or DMG STA, Operation of HT-delayed block ACK, Rules for RD initiator, Rules for RD responder, and Explicit feedback beamforming.

Pet., 44-45 (citing SAMSUNG-1008, Table 6).

TABLE 7

ACK Policy == 01

No ACK

The addressed recipient takes no action upon receipt of the frame.
The ACK Policy subfield is set to this value in all individually addressed frames in which the sender does not require acknowledgment. The ACK Policy subfield is also set to this value in all group addressed frames that use the QoS frame format except with a TID for which a block ACK agreement exists.

This value of the ACK Policy subfield is not used for QoS Data frames with a TID for which a block ACK agreement exists.

The ACK Policy subfield for group addressed QoS Null (no data) frames is set to this value.

Pet., 44-45 (citing SAMSUNG-1008, Table 7).

The above noted ACK policies are among the known ACK policy configurations taught and known in the art at the time of the '035 patent filing.

The search record reveals that, before and after the amendment that led to allowance (the petition's elements [1.4] and [1.5]), the Examiner too narrowly searched for the claim language without considering and searching for other terms related to the same concept or even the concepts in general e.g., "ACK policy," "QoS policy."

For example, seen below is a search performed by the Examiner in response to the amendment entered on September 20, 2020.

S24	36	(mu\$2 or multi\$2 user) same (parameter or edca) same (timer or time\$out or count\$4 or count\$down or reset\$4 or set\$4) with ((enabl\$4 or request\$4) near3 (respons or feedback or ack or acknowledg\$5) or enabl\$4 immediat\$4 response or "deid" or enabl\$4 ("not" or "no") immediat\$4 response or "denir")	US-PGPUB; USPAT; DERWENT	NEAR	ON	2020/12/26 14:13
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SAMSUNG-1002, 54.

The Examiner’s search, as evidenced by the query “(respons or feedback or ack or acknowledg\$5) or enabl\$4 immediat\$4 response or "deid" or enabl\$4 ("not" or "no") immediat\$4 response or "denir”)” demonstrates an improper emphasis on the outcome of a communication event, specifically an “immediate response,” instead of the underlying “acknowledgement policy” that dictates such behavior. This analytical oversight is critical, as the provided sources (information within the specification and material in the IDS) clearly delineate “Ack Policy” as a distinct, configurable, and granular mechanism within the Medium Access Control (MAC) layer. As cited on the cover of the ’035 patent (seen below) and in Figure 10a (seen below), the Examiner should have searched for “ACK polices” that would have resulted in the polices disclosed in Kim.

Kiseon Ryu, “Ack Policy for UL MU Ack transmission”, IEEE 802.11 -15/1346r 1, Internet URL:<https://mentor.ieee.org/802.11/dcn/15/11-15-1346-01-00ax-ack-policy-for-ul-mu-ack-transmissio.ppx>, Nov. 8, 2015.

SAMSUNG-1001, Cover.

Additionally, the specification further describes the context of ACK policies: “[t]he wireless communication terminal receiving the A-MPDU may determine whether the QoS data requests an Ack according to the value of the ACK Policy subfield of the QoS Control field of the MAC header.” SAMSUNG-1001, 23:59-62.

The Examiner’s search terms, while including “ack” and “acknowledg\$5,” dilute their specificity by broadly linking them with “respons” and “feedback,” and by improperly framing the intent around “immediate response” or “no immediate response.” This approach is insufficient to capture the nuanced definitions, configurations, and strategic implications of “ACK policies” as direct MAC layer controls. Terms such as “ACK Policy subfield,” “Block Ack Policy,” “Implicit Block Ack Request,” “Delayed Block Ack,” “Multi-User Block Ack (M-BA),” and specific policy values (e.g., Ack Policy ==00, Ack Policy ==01) would have been far more effective in identifying the pertinent disclosures related to acknowledgment strategies. Had the Examiner been aware of the well-known concept of “ACK Policies,” as referenced in the ’035 patent specification and related art, and searched for them, the Examiner would have uncovered more relevant prior art, such as Kim. Thus, the Examiner’s search fundamentally mischaracterized the nature of the relevant concepts by treating the *result* of an acknowledgment action (i.e., immediate or no immediate response) as equivalent to the *policy* governing that action.

Finally, the cited Cooperative Patent Classification (CPC) codes searched by the Examiner were too generic to cover these specific MAC layer acknowledgment policies and the Examiner's overly broad inclusion of codes did not focus on the amended features. The number of results from the Examiner's search, nearly 110,000 results, demonstrates that the search was too broad. Focusing on the key features added by amendment would have likely yielded better results. For example, the Office classified Kim with at least the H04L 5/0055 code. SAMSUNG-1008, Cover.



US 20180034595A1

(19) **United States**

(12) **Patent Application Publication**
Kim et al.

(10) **Pub. No.: US 2018/0034595 A1**
(43) **Pub. Date: Feb. 1, 2018**

(54) **METHOD FOR TRANSMITTING AND RECEIVING POLICY INDICATOR-BASED ACKNOWLEDGEMENT/NON-ACKNOWLEDGEMENT SIGNAL IN WIRELESS LAN SYSTEM, AND DEVICE THEREFOR**

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Publication Classification

(51) **Int. Cl.**
H04L 1/16 (2006.01)
H04L 1/18 (2006.01)
H04L 5/00 (2006.01)

(52) **U.S. Cl.**
CPC **H04L 1/1671** (2013.01); **H04L 5/0055** (2013.01); **H04L 1/1854** (2013.01); **H04W 72/042** (2013.01)

(57) **ABSTRACT**

SAMSUNG-1008, Cover.

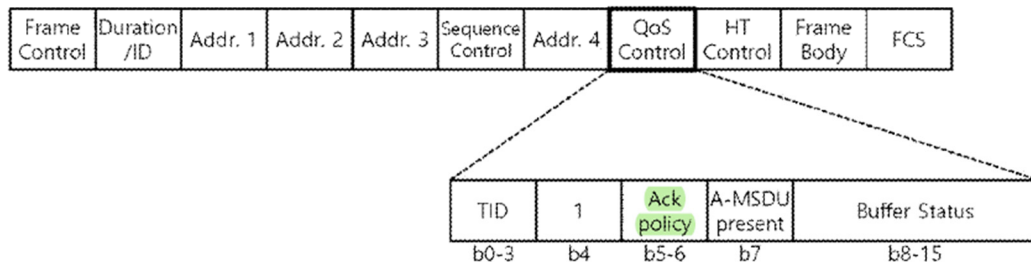
The Examiner searched the H04L 5/0055 code, which may have resulted in the Kim reference, but because the Examiner included an additional seven other codes, the 109,764 results were too vast, lowering the chances of the Examiner finding Kim or a similar reference.

S27	109,764	(H04W80/02 or H04W28/0268 or H04W74/0808 or H04W40/244 or H04W74/08 or H04L5/0055 or H04W84/12 or H04W74/00 or H04W72/0446).cpc.	US-PGPUB; USPAT; DERWENT	NEAR	ON	2020/12/26 14:30
S28	19	S26 not S25	US-PGPUB; USPAT; DERWENT	NEAR	ON	2020/12/26 14:30
S29	227	(mu\$2 or multi\$2 user) same trigger and (parameter or edca) same (timer or time\$out) with (respons or feedback or ack or acknowledg\$5)	US-PGPUB; USPAT; DERWENT	NEAR	ON	2020/12/26 14:35

SAMSUNG-1002, 55.

Specifically, the Examiner searched for either an “immediate response” or “not or no” “immediate response” and did not perform searches with key terms from the claims such as “ACK policy,” “QoS policy,” “PPDU,” “MPDU,” or “trigger-based PPDU” or other terms and CPC codes that would have resulted in Kim or an equivalent reference. SAMSUNG-1002, 52-56. Such terms were known in the art, indeed, the ’035 patent itself shows the general and well-known frame structure and employment of “QoS Control field[s]” in FIG. 10a. SAMSUNG-1001, FIG. 10 and 17.

(a)



SAMSUNG-1001, FIG. 10a.

The lack of proper searching led initially to the lack of proper rejections to prior dependent claims 22-25, and eventually to the lack of proper rejection of the amendment to the independent claims that led to allowance. This is shown by the generalized rejection offered for original claims 22-25. SAMSUNG-1002, 737-740, 52-56 (Showing the search strategy lacking a search for “MPDU,” “PPDU,” and “trigger-based”).

Because the Examiner overlooked highly relevant disclosure of acknowledgment protocols well-known in the art and discussed in Kim’s disclosure (among other publications teaching similar ACK policies), and failed to perform straightforward search strategies that would have led to Kim, the Examiner erred in issuing the ’035 patent. Board resources are thus well-spent to correct the Examiner’s error and to prevent further errors in the examination of this family of applications, which remains pending.

III. Conclusion

Patent Owner’s Request for Director Review of the Referral Decision should be denied. The Director should permit the instituted IPR in this proceeding to proceed.

Respectfully submitted,

Dated December 2, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on December 2, 2025, a complete and entire copy of this Authorized Response to Director Review Request was provided by email to the Patent Owner by serving the correspondence email address of record as follows:

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