

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 No. IPR2025-00934
U.S. Patent No. 11,159,210

PATENT OWNER'S PRELIMINARY RESPONSE

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TABLE OF AUTHORITIES

Cases

Samsung Elecs. Co. v. Infobridge Pte. Ltd.,
929 F.3d 1363 (Fed. Cir. 2019)19

Voter Verified, Inc. v. Premier Election Sols., Inc.,
698 F.3d 1374 (Fed. Cir. 2012)19

PATENT OWNER’S EXHIBIT LIST

Exhibit	Description
2001	Order, <i>Wilus Institute of Standards and Technology Inc., v. HP Inc.</i> , Case No. 2:24-cv-00752-JRG-RSP, Dkt. No. 130 (E.D. Tex., June 11, 2025) (“Docket Control Order”)
2002	U.S. Publ. No. 2017/0181136 (“Bharadwaj ’136”)
2003	Excerpts of Defendants’ P.R. 3-3 and 3-4 Invalidity Contentions and Subject Matter Eligibility Contentions in the consolidated case, <i>Wilus Institute of Standards and Technology Inc., v. HP Inc.</i> , Case No. 2:24-cv-00752-JRG-RSP (E.D. Tex.), dated February 13, 2025.
2004	Docket Navigator Stay Statistics
2005	Excerpt from U.S. District Court – National Judicial Caseload Profile for the Eastern District of Texas, March 31, 2025, https://www.uscourts.gov/sites/default/files/document/fcms_na_distprofile0331.2025.pdf
2006	Judge Rodney Gilstrap’s median time to trial from July 22, 2024 until July 22, 2025, retrieved from www.docketnavigator.com
2007	D. Crouch, <i>Estoppel Guttled: A Pelican’s Guide to Patent Litigation</i> , Patently-O, https://patentlyo.com/patent/2025/05/estoppel-pelicans-litigation.html (May 7, 2025)
2008	Declaration of Jin Sam Kwak
2009	List of Licensees to Wifi 6 from Sisvel, https://www.sisvel.com/licensing-programmes/Wi-Fi/wifi-6/#tab-list-of-licensees
2010	Letter re “Notice of Wi-Fi 6 License offer” from Sisvel to Samsung Electronics Co., Ltd. with Attachments 1-2, April 8, 2022
2011	Intentionally Omitted

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2012	Application Data Sheet and Acknowledge Receipt for U.S. Appl. No. 17/656,916 on March 29, 2022
2013	Information Disclosure Statement for U.S. Appl. No. 17/656,916 on March 29, 2022
2014	Korean Patent No. 10-2082093, retrieved from the File History of U.S. Appl. No. 17/656,916
2015	HE-SIG-B Compression Mode (dated March 14, 2016)
2016	CIDs on Signaling for UL HE MU PPDU (dated January 16, 2017)
2017	Email from Alex Gelberg (district court trial counsel for Petitioner) dated August 27, 2025 to counsel for WILUS

I. Introduction

The Petition fails to establish that the alleged prior art discloses the elements of “wherein when a SIG-B compression field of the HE-SIG-A indicates *full bandwidth multi User-Multiple Input Multiple Output(MU-MIMO) transmission, a format of user field(s) included in a user specific field of the HE-SIG-B is identified based on a number of MU-MIMO users indicated by a subfield of the HE-SIG-A*” and “*wherein when the number of MU-MIMO users indicates a single user*, the user specific field of the HE-SIG-B includes one user field for non-MU-MIMO allocation” in all challenged independent claims (i.e., claims 1 and 6).¹

The Petition asserts that a POSITA would have understood 802.11ax_D1.0 to teach bits B18-21 and B22 of HE-SIG-A as satisfying “a subfield of the HE-SIG-A” indicating “a number of MU-MIMO users,” and specifically that bits B18-21, when set to “zero,” would have “indicate[d] a single user.” Pet. at 35-36. In 802.11ax_D1.0, however, bits B18-21 being set to “zero” cannot indicate “a single user” for full bandwidth MU-MIMO, because when the value of bit B22 of HE-SIG-A is “1” (indicating full bandwidth MU-MIMO), only multiple users can be indicated in the HE-SIG-A field.

¹ All emphases added unless otherwise noted.

Further, a contemporaneous statement from Dr. Youhan Kim, who was a co-author of the Table 28-17 (“HE-SIG-A field of an HE MU PPDU”) in 802.11ax_D1.0, contradicts Petitioner’s interpretation of Table 28-17. For 802.11ax_D1.0, Dr. Kim observed in January 2017 that the “[n]umber of MU-MIMO users **cannot be 1** (value 0x0) in HE-SIG-A of HE_MU PPDU.” Ex. 1035, at 484. If Dr. Kim’s observation is credited, then the Petition’s central argument for how 802.11ax_D1.0 teaches a HE-SIG-A subfield which “indicates a single user” cannot be correct. Even assuming that 802.11ax_D1.0 permitted a “single-user” case under a full-BW MU-MIMO context, the 802.11ax_D1.0 does not prescribe or teach any rule by which the format of the HE-SIG-B user field(s) is identified based on the number of MU-MIMO users indicated by HE-SIG-A.

Finally, before the January 9, 2017 critical date, the only way for any person to obtain a copy of 802.11ax_D1.0 was to either (1) be a member of the IEEE 802.11 Working Group; or (2) if not a Working Group member, somehow learn of 802.11ax_D1.0 after its publication December 1, 2016, and then request and (successfully) obtain it from a Working Group member before January 9, 2017. This fails to establish that 802.11ax_D1.0 was “publicly accessible” under any Federal Circuit precedent.

Thus, the Petition fails to establish a reasonable likelihood that Petitioner would succeed in showing that the prior art discloses or renders obvious any of the challenged claims. For at least this reason, the Board should deny institution.

II. Overview of the '210 Patent

The '210 Patent was filed on December 31, 2019, and issued on October 26, 2021. It is a continuation of U.S. Patent No. 10,567,047 filed on July 8, 2019 which is a continuation of PCT Application No. PCT/KR2018/000443, filed on January 9, 2018. Ex. 1001 ('210 patent) at pgs. 1-2. The PCT Application further claims priority to Korean Application Nos. 10-2017-0003147 on January 29, 2017, and 10-2017-08927 on January 18, 2018. '210 Patent at 1:9-18. The '210 Patent lists Juhyung Son, Jinsam Kwak, Geonjung Ko, Woojin Ahn as inventors. Wilus Institute of Standards and Technology Inc. ("Wilus") is the sole assignee of record.

The '210 Patent describes that there is a continued need "for providing a high-efficiency and high-performance wireless LAN communication technology in a high-density environment" and recognizes that "in a next generation wireless LAN environment, communication having high frequency efficiency needs to be provided indoors/outdoors under the presence of high-density stations and access points (AP)." '210 Patent at 2:35-

44. The techniques provided in the '210 Patent can advantageously increase the total resource utilization rate, and improve the performance of the wireless LAN system. '210 Patent, 4:15-23. The '210 Patent is utilized by products that implement the Wi-Fi 6 (802.11ax) standard for wireless communications and is widely licensed by the industry.

A High Efficiency Multi-User PHY Protocol Data Unit (HE MU PPDU) is used for OFDMA (Orthogonal Frequency Division Multiple Access) and/or MU-MIMO transmission methods to enable an Access Point (AP) to send data to multiple stations (STAs) simultaneously. MU-MIMO achieves multi-user access by transmitting different spatial streams to different users, while OFDMA divides the available bandwidth into smaller Resource Units (RUs) allocated to different users. The preamble of an HE MU PPDU contains the HE-SIG-A (High Efficiency Signal A) and HE-SIG-B (High Efficiency Signal B) fields. The '210 patent discloses techniques for configuring and using a combination of subfields in HE-SIG-A and HE-SIG-B to enable correct decoding of resources for full-bandwidth (BW) MU-MIMO transmissions without OFDMA. This approach prevents misinterpretation of the HE-SIG-B field and ensures proper decoding and resource allocation for both the MU-MIMO or single-user (non-MU-MIMO) transmissions.

Representative Claim 1 of the '210 Patent recites the following:

[1.1] a communication unit; and

[1.2] a processor configured to process signals transmitted and received through the communication unit, wherein the processor is configured to:

[1.3] receive, through the communication unit, a high efficiency multi-user PHY protocol data unit (HE MU PPDU), wherein a preamble of the HE MU PPDU includes high efficiency signal A field (HE-SIG-A) and high efficiency signal B field (HE-SIG-B), and

[1.4] decode the received HE MU PPDU based on information obtained from the preamble,

[1.5] wherein when a SIG-B compression field of the HE-SIG-A indicates full bandwidth multi User-Multiple Input Multiple Output(MU-MIMO) transmission, a format of user field(s) included in a user specific field of the HE-SIG-B is identified based on a number of MU-MIMO users indicated by a subfield of the HE-SIG-A,

[1.6] wherein when the number of MU-MIMO users indicates two or more users, the user specific field of the HE-SIG-B includes user fields for MU-MIMO allocation, and

[1.7] wherein when the number of MU-MIMO users indicates a single user, the user specific field of the HE-SIG-B includes one user field for non-MU-MIMO allocation.

Independent Claim 6 also recites similar elements as Claim 1.

III. Level of Ordinary Skill in the Art

The Petition proposes that 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 equivalent, as of [January 9, 2017]. Increased education experience can make up for less work experience and vice versa.” Petition at 3. To the extent that Petitioner requires that the required experience and/or education level to be acquired by January 9, 2017, Petitioner objects to this requirement because it is not relevant or needed for someone to be a POSITA. Patent Owner does not otherwise challenge Petitioner’s definition for purposes of this Preliminary Response.

IV. Claim Construction

“Petitioner submits that no formal claim constructions are necessary...” for purposes of the Petition. Petition at 2. Patent Owner notes that both parties have submitted terms for construction in the district court for this Patent.

Recently, in district court, however, Petitioner has identified one term from the '210 Patent for construction—"a format of user field(s) included in a user specific field of the HE-SIG-B is identified based on a number of MU-MIMO users indicated by a subfield of the HE-SIG-A"—which appears in both independent claims 1 and 6. Petitioner contends that this term is indefinite 35 U.S.C. § 112. *See* Ex. 2017, at 1 (correspondence from Petitioner's trial counsel identifying indefiniteness position for the '210 Patent).

Petitioner asserted this indefiniteness position for the '210 Patent in the district court for the first time on August 27, 2025, which was after Patent Owner filed its Request for Discretionary Denial of Institution on August 11, 2025. *See* Paper 8, Ex. 2017. The Petitioner has offered no explanation, in this *inter partes* review or in the district court litigation, why it has adopted inconsistent claim construction positions between the two proceedings.

When the Patent Office transitioned IPRs away from the Broadest Reasonable Interpretation claim construction and to the same *Phillips* standard applied in district court, one goal was to "reduce the potential for inconsistency in the interpretation of the same or similar claim terms" between PTAB and district court proceedings. 83 Fed. Reg. at 51,350 (2018). Petitioner's adoption of inconsistent claim construction arguments between its

district court position and its Petition generates the risk with which the Patent Office was concerned. If Petitioner prevails in this IPR and obtains a final written decision finding any challenged claim unpatentable, such a decision would both suggest the challenged claims are not indefinite under *Phillips* and be inconsistent with a district court finding the claims are indefinite.

In any event, for purposes of this Preliminary Response, Patent Owner applies the plain and ordinary meaning of the challenged claims. But, as further discussed below, the Petition fails to show that the alleged art discloses even when applying the plain and ordinary meaning of the term.

V. The Petition Fails to Establish “a number of MU-MIMO users indicated by a subfield of the HE-SIG-A,” “wherein ... the number of MU-MIMO users indicates a single user,” in all Challenged Claims

A. Grounds 1A/1B

The Petition argues, for Ground 1A, that 802.11ax_D1.0 renders obvious claims 6-9. Pet. at 32-51. In Ground 1B, the Petition argues that 802.11ax_D1.0 in combination with Bharadwaj renders obvious claims 1-6. Pet. at 52-61. Challenged independent claims 1 and 6 require the following: “subfield of the HE-SIG-A” indicate “a number of MU-MIMO users, and that “the number of MU-MIMO users indicates a single user.” *See, e.g.*, '210 Patent, cl. 1 (limitations [1.5] and [1.7]) & cl. 6 (limitations [6.3] and [6.5]).

For both Grounds 1A and 1B, the Petition contends that 802.11ax_D1.0 alone teaches these limitations. *See, e.g.*, Pet. at 34-42 (addressing claim 6, limitation [6.3]), 43-46 (addressing claim 6, limitation [6.5]), 58 (addressing claim 1, limitations [1.5] and [1.7] by summarily citing back to Ground 1A argumentation).

For the “subfield of the HE-SIG-A” required in all challenged claims, the Petition maps that limitation to bits B18-22 and B22 of HE-SIG-A of an HE MU PPDU, and contends that the value of field B18-22 may be used to indicate a number of MU-MIMO users. To make this point, the Petition presents and annotates the following excerpt of Table 28-17 from 802.11ax_D1.0:

Table 28-17—HE-SIG-A field of an HE MU PPDU (continued)

...

B18-B21	Number Of HE-SIG-B Symbols Or MU-MIMO Users	4	If the SIGB Compression field is 0, indicates the number of OFDM symbols in the HE-SIG-B field minus 1. If the SIGB Compression field is 1, indicates the number of MU-MIMO users minus 1.
B22	SIGB Compression	1	Set to 1 for full BW MU-MIMO Set to 0 otherwise.

Pet. at 35 (excerpting Table 28-17) (annotations by Petitioner). As Table 28-17 shows, in 802.11ax_D1.0, bit B22 is set to “1” to indicate “full BW MU-MIMO.” Where this is the case, bits 18-B21 “indicates the number of MU-MIMO users minus 1.” *See Ex. 1004*, at 277. Then, according to the Petition,

bits B18-B22 may be set to “zero,” in which case “the number of MU-MIMO users indicated is one,” and then the “receiver identifies the format of the HE-SIG-B user field for a single-user (SU) allocation, the subfields of which are shown in Table 28-22.” Pet. at 35. This fails for multiple reasons.

First, the Petition's reasoning is circular. It assumes, without explaining, that a single user transmission may be performed according to 802.11ax_D1.0 where bit B22 is “one” and bits B18-21 is “zero.” 802.11ax_D1.0 does not actually contemplate full bandwidth MU-MIMO transmission for a single user, which is apparent from 802.11ax_D1.0 itself. For example, the Petition argues that where bit B22 is “one” (indicating full bandwidth MU-MIMO, as required by limitations [1.5] and [6.3]) and there is only a “single user” indicated through a “zero” value in bits B18-21, then the receiver identifies the communication for “single-user (SU) allocation” through using to “the subfields ... shown in Table 28-22.” Pet. at 35-36. But Table 28-22 is not for MU-MIMO allocation, much less a “full bandwidth MU-MIMO” transmission. By contrast, Table 28-17 shows the HE-SIG-A field when B22=1, i.e., in a full-BW MU-MIMO context. A POSITA would not consider whether Table 28-22 could be a “single-user” format within the MU-MIMO context of Table 28-17.

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1 The HE-SIG-B user field for an SU allocation contain the subfields shown in Table 28-22 (Fields of the
2 HE-SIG-B user field for an non-MU-MIMO allocation).
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6 **Table 28-22—Fields of the HE-SIG-B user field for an non-MU-MIMO allocation**

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Bit	Field	Number of bits	Description
B0-B10	STA-ID	11	The STA-ID refers to the AID described in 9.4.1.8 (AID field). The 11 LSBs of the AID field are used to address the STAs in this field. For RUs that carry a broadcast allocation: — For single BSS AP, the STAID for broadcast

Ex. 1004, at 321 (showing Table 28-22). Table 28-22 contains bit and field descriptions for non-MU-MIMO allocation. 802.11ax_D1.0 does not contemplate, and a POSITA would not understand, Table 28-17 to disclose either MU-MIMO transmission or the required “full bandwidth [MU-MIMO]” transmission required in the claims for “a single user.”

In other words, if the Petition were, for the sake of argument, correct to suggest that 802.11ax_D1.0 contemplates a single-user full bandwidth MU-MIMO transmission for a single user, 802.11ax_D1.0 would be silent about what user-specific format determining HE-SIG-B structure and how the number of spatial streams should be distributed (in contrast to expected scenario of multiple users across which streams could be distributed). The Petition attempted to paper over this deficiency in 802.11ax_D1.0 by pointing to Table 28-22, but, as shown above, Table 28-22 is used for non-MU-MIMO transmissions. Further, as the Petition concedes, Table 28-23 (which *is* MU-MIMO transmissions) “cannot support the single-user scenario.” Pet. at 38.

Second, contemporaneous evidence from before the critical date of the '210 Patent strongly suggests that the Petition's core assumption—that 802.11ax_D1.0 discloses and supports full bandwidth MU-MIMO transmissions for a single user)—is incorrect. As soon as 802.11ax_D1.0 was published in December 2016 to the members of the IEEE 802.11 Working Group, the Working Group began collecting and collating comments from IEEE members regarding various aspects of the 802.11ax_D1.0 draft. *See* Ex. 1035 (spreadsheet of comments on 802.11ax_D1.0 dating to January 9, 2017) (“1/9/2017 Comments”).

The authors of comments collected in the 1/9/2017 Comments include authors of the portions of 802.11ax_D1.0 relied upon in the Petition, including specifically the authors of Table 28-17 and related specification information for HE-SIG-A and HE-SIG-B. In relevant part, Dr. Youhan Kim, affiliated with Qualcomm, was a co-author of the information presented at Table 28-17 and related HE-SIG-B information presented in 802.11ax_D1.0:

March 2016

doc.: IEEE 802.11-15/0349r1

HE-SIG-B Compression Mode

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Ex. 2015, at 1, 5 (annotated) (listing Dr. Youhan Kim as a co-author). *See also id.*, at slide 11 (describing functionality later presented in HE-SIG-A, bit B22), 12 (describing need to “indicate number of users in full bandwidth MU-MIMO allocation” later presented in HE-SIG-A, bit B18-21).

In the 1/9/2017 Comments, Dr. Kim (a co-author of the parts of 802.11ax_D1.0 relied upon by the Petition) provided comment number 9770 (CID 9770), shown below in relevant part:

9770 Youhan Kim	225	1 28.3.10.7.2	277	20	T	Y	277.20 28.3.10.7.2	Number of MU-MIMO users cannot be 1 (value 0x0) in HE-SIG-A of HE_MU PPDU because the Spatial Config subfield in HE-SIG-B has Nuser >= 2.	Make the value 0x0 reserved for the Number of HE-SIG-B Symbol Or MU-MIMO Users field of HE-SIG-A for HE_MU PPDU if the SIGB Compression field is 1.
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Number of MU-MIMO users cannot be 1 (value 0x0) in HE-SIG-A of HE_MU PPDU because the Spatial Config subfield in HE-SIG-B has Nuser >= 2.	Make the value 0x0 reserved for the Number of HE-SIG-B Symbol Or MU-MIMO Users field of HE-SIG-A for HE_MU PPDU if the SIGB Compression field is 1.
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In CID 9770, Dr. Kim observed that, in 802.11ax_D1.0, the “[n]umber of MU-MIMO users **cannot be 1** (value 0x0) in HE-SIG-A of HE_MU_PPDU.” Ex. 1035, at 484. In other words, 802.11ax_D1.0 did not provide for full bandwidth MU-MIMO transmission for a single user—which Dr. Kim recognized and commented on for the purpose of suggesting a future revision to the draft standard. This direct statement, from a co-author of Table 28-17, forecloses Petitioner’s assumption.

The Petition’s own evidence points to this result. CID 5264, cited in the Pet. at 46 n. 6, actually establishes that 802.11ax_D1.0 did not provide for or disclose full bandwidth MU-MIMO transmissions for a single user. *See* Ex. 1035, at 142 (CID 5264) (“Regarding ‘Each User Block field is made up of two user fields’, is it allowed to use the HE MU PPDU for a single user? If so, this statement is incorrect. Please clarify.”). CID 5264 shows not only that it was at minimum *unclear* whether MU-MIMO transmission could be used for a single user, it also shows that a contrary assumption (such as the one taken in the Petition) would be “incorrect” and inconsistent with other portions of 802.11ax_D1.0.

Finally, further showing that the Petition's argument based on 802.11ax_D1.0 is incorrect, Dr. Kim's CID 9770 was later resolved by a revision proposed by *the Patent Owner*, WILUS, which was subsequently accepted in subsequent versions of and the eventual final version of the 802.11ax technical specification. Patent Owner's proposed revision is shown below, in relevant part, with the "tracked" changes indicating Patent Owner's proposed revision to 802.11ax_D1.0 for resolving CID 9770:

28.3.10.8 HE SIG-B

28.3.10.8.1 Encoding and modulation

TGax Editor: Modify the following paragraph in 28.3.10.8.1 in page 286 of D1.0 0 (#CID 5412, 6194, 7032, 7033)

When the SIGB Compression field in the HE-SIG-A field of an HE MU PPDU is set to 1 (indicating full bandwidth MU-MIMO transmission), the Common Block field is not present and the content channel consists of only the User Specific field.

When the SIGB Compression field in the HE-SIG-A field of an HE MU PPDU is set to 1 (indicating full bandwidth MU-MIMO transmission) and the Number Of HE-SIG-B Symbols Or MU-MIMO Users field in the HE-SIG-A field of an HE MU PPDU is set to 0 (indicating 1 MU-MIMO user), the User Specific field in the HE-SIG-B field consists of the HE-SIG-B user field for a non-MU-MIMO allocation as shown in Table 28-22 (Fields of the HE-SIG-B user field for a non-MU-MIMO allocation). (#5412) (#6194) (#7032) (#9770)

Ex. 2016, at 3 (resolving CID 9770); *see also id.* at 1 (listing Ju-Hyung Son of WILUS Inc. and Lochan Verma of Qualcomm as authors).

In short, 802.11ax_D1.0 did not disclose or suggest full bandwidth MU-MIMO transmission for a single user, which is required by the challenged claims. The Petition assumes the opposite to be true, without explaining why that would have been the case for a POSITA. Further, the contemporaneous evidence (*i.e.*, comments made by Working Group members about

802.11ax_D1.0) establishes at least that it was at most unclear from 802.11ax_D1.0 whether it provided for MU-MIMO transmission for a single user; and considering CID 9770, which literally states that “the -[n]umber of MU-MIMO users cannot be 1 (value 0x0) in HE-SIG-A of HE_MU_PPDU,” it is clear that the Petition not only failed to establish reasonable likelihood of success in showing that 802.11ax_D1.0 alone teaches a “subfield of the HE-SIG-A” that indicates “a number of MU-MIMO users,” and that “the number of MU-MIMO users indicates a single user,” the Petition is incorrect as a basic factual and technical matter about 802.11ax_D1.0.

B. Ground 2

The Petition argues, for Ground 2, that Bharadwaj in combination with Sun renders obvious limitations [1.5], [1.7], [6.3], and [6.5]. *See* Pet. at 70-74 (mapping for [1.5] and [1.7], 79-80 (citing back to claim 1 analysis). For the relevant limitations here, the Petition relies principally on Bharadwaj, which is a patent application filed by Qualcomm on December 21, 2016. *See* Ex. 1013, at 1.

The portions of Bharadwaj relied upon by the Petition exactly match the portions of 802.11ax_D1.0 mapped by the Petition for Grounds 1A and 1B (*see* Pet. at 70-71)—that is, Qualcomm potentially prepared and filed the patent Bharadwaj patent application in the wake of the December 1, 2016

circulation of the 802.11ax_D1.0 draft within the IEEE Working Group. The Petition cites Bharadwaj, for example, to identify bits B18-21 and B22 of HE-SIG-A as establishing the field of HE-SIG-A that “indicates the number of MU-MIMO” users. Pet. at 70-1. Like for Grounds 1A and 1B, however, the Petition does not explain why these disclosures from 802.11ax_D1.0 teach or suggest full bandwidth MU-MIMO transmission for a single user. The Petition's reliance on Bharadwaj's incorporation of 802.11ax_D1.0 fails for the same reasons as its arguments for Grounds 1A and 1B.

Indeed, the even where the Petition maps specifically to portions of Bharadwaj for the “single user for full BW MU-MIMO for a single user” limitation, it is clear the prior art does not disclose it. For example, the Petition maps Figure 5 of Bharadwaj as establishing limitation [1.7], Pet. at 72-73, and notes that Bharadwaj teaches per-user information for “two or more MU-MIMO users.” But where Figure 5 of Bharadwaj accounts for a single user (e.g., as expressed in the right-hand portion of object 345-D of Figure 5 that the Petition maps), it is for a “single user” (SU) transmission which does not use MU-MIMO techniques and never described, in either the Figure or in the text of Bharadwaj, as for MU-MIMO transmission. When the Petition asserts that “Bharadwaj describes ... the number of MU-MIMO users indicates a

single user” (Pet. at 73), it is an assertion unsupported by the Bharadwaj and the rest of the prior art.

VI. The Petition Fails to Establish 802.11ax_D1.0 is Prior Art

Finally, the Petition fails to establish that 802.11ax_D1.0 was “publicly accessible” for purposes of serving as printed-publication prior art. The Petition and Petitioner’s expert, Dr. Christopher Hansen, argue at length that 802.11ax_D1.0 was “publicly accessible” because it was circulated internally within the IEEE 802.11ax working group on or around December 1, 2016.

The Petition acknowledges that the document was not “publicly accessible” in the conventional sense. Dr. Hansen explains—and the Petition does not mention—that, first, the existence of 802.11ax_D1.0 was made known to “IEEE 802.11 Working Group” via email on December 1, 2016, and that the email contained a “link to the draft D1.0 PDF, which was password protected.” Ex. 1026, ¶ 60. According to Dr. Hansen, a “voting member of the IEEE 802.11 Working Group could enter their credentials” to download a copy of 802.11ax_D1.0. The draft was otherwise not “publicly accessible” in the myriad scenarios addressed by the Federal Circuit case law on this issue: for example, it was not downloadable or retrievable via the Internet by a member of the general public, it could not be located in a library via an index of collected works, and so on.

Instead, the Petition advances a novel theory of public accessibility: that

- (1) “[i]nterested members of the public would have gained access to 802.11ax_D1.0 either by following IEEE’s straightforward procedures for joining the ranks of voting members of the IEEE 802.11 Working Group,” or
- (2) “by obtaining a copy of 802.11ax_D1.0 from a voting member (or an intermediary who obtained a copy from a voting member).” Pet. at 17-18.

As an initial matter, the Petition’s argument for the alleged public accessibility of 802.11ax_D1.0 is unsupported by any Federal Circuit or other precedent. It is settled law that a publication which is “uploaded to a website or deposited in a library” and which is “indexed or catalogued in some way” may be “publicly accessible” for prior art purposes. *See Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369 (Fed. Cir. 2019). For a publication to be “publicly accessible” to a POSITA, whether the POSITA “would have been independently aware” of the publication before the critical date also affects the determination. *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1381 (Fed. Cir. 2012). For publications deposited in an Internet location, the inquiry should include whether “a person of ordinary skill could have reasonably found the website and then found the reference on that website.” *Infobridge*, 929 F.3d at 1369. The 802.11ax_D1.0 draft fits none of

these or other scenarios in which the Federal Circuit has confirmed the “public accessibility” of a prior art reference.

Here, the 802.11ax_D1.0 draft was never made “publicly available” to a general member of the interested public, unless one were to assume that the definition of a POSITA include membership in the “voting” sub-group of the IEEE 802.11 Working Group. The Petition does not allege that a POSITA for the '210 Patent would have been a voting member of the IEEE Working Group (*see* Pet. at 2-3), and an assertion otherwise would be dubious at best, given that the Petition also asserts a POSITA would have had only “3 years of experience” with a Bachelor’s degree in electrical engineering or computer science, a definition met by innumerable 24-year-old, junior software engineers in the United States.

Perhaps having foreseen this problem, the Petition contends that it would have been simple for a POSITA (having graduated from college 3 years earlier) to follow “straightforward procedures for joining the ranks of voting members of the IEE 802.11 Working Group.” Pet. at 17. Those procedures, as of the critical date, required an interested person to attend three IEEE working group meetings *in person*, two of which must be week-long “plenary” meetings. *See* Ex. 1035, ¶¶ 66-70.

Dr. Hansen's declaration itself shows why the Petition's arguments are suspect. *See* Ex. 1035, ¶ 69. If an interested member of the public desired to become a voting member of IEEE 802.11 Working Group as late as possible before the January 2017 critical date, they would have needed to do the following:

- Attend at least two "plenary" IEEE meetings in the following locations and dates: (1) Macau, March 2016; (2) San Diego, California, July 2016, and (3) San Antonio, Texas, November 2016.
- If only two "plenary" meetings attended, attend at least one of the following non-plenary IEEE meetings: (1) Waikoloa, Hawaii, May 2016, (2) Warsaw, Poland, September 2016.

The Petition's theory that a POSITA would have just "joined" Working Group and become a member fails for numerous reasons. First, a POSITA could not have been meaningfully motivated to do so beginning in December 2016 if they had (hypothetically) been informed of the existence of 802.11ax_D1.0, because they would not had time to do so before the January 2017 critical date. Even if one counterfactually assumes the role of a 23-year old software engineer in January 2016, it defies logic to conclude that 23-year old software engineer, even acting as a reasonably diligent member of the public but with

just 3 years of experience and a Bachelor's degree, would have strategically attended multiple IEEE meetings throughout 2017, some in far-flung locations, just to become a voting member of the Working Group for the chance to learn about and access 802.11ax_D1.0 between December 2016 and January 2017.

The Petition plainly understands the incredibility of the above scenario, and so also argues that a reasonably diligent POSITA would have asked a member of the Working Group (or some intermediary who knows a Working Group member) to obtain a copy of 802.11ax_D1.0. But this presupposes, without evidence, that a POSITA would have known of the existence of 802.11ax_D1.0 before the January 2017 critical date, which is a factually dubious scenario given the Petition's own definition of a POSITA. More importantly, the Petition's argument here is simply: "a POSITA, acting as an otherwise unrelated member of the public, could have emailed a Working Group member, or someone else who knew a Working Group member, to request the password-protected 802.11ax_D1.0 draft and expected to obtain it." No case law or other precedent supports such an expansive definition of "public accessibility," and the Petition cites none. 802.11ax_D1.0 was simply not "publicly accessible" for prior art purposes.

VII. Conclusion

For the foregoing reasons, the Petition should be denied.

Patent Owner's Preliminary Response
IPR2025-00934 (U.S. Patent No. 11,159,210)

Dated: September 10, 2025

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I certify that there are 4,228 words in this paper, excluding the portions exempted under 37 C.F.R. § 42.24(a)(1), according to the word count tool in Microsoft Word.

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I hereby certify that "Patent Owner's Preliminary Response" was served on September 10, 2025 by email sent to:

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