

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

WILUS INSTITUTE OF STANDARDS AND  
TECHNOLOGY INC.,

*Plaintiff,*

v.

HP INC.,

*Defendant.*

Case No. 2:24-cv-00752-JRG-RSP  
[Lead Case]

Case No. 2:24-cv-00764-JRG  
[Member Case]

WILUS INSTITUTE OF STANDARDS AND  
TECHNOLOGY INC.,

*Plaintiff,*

v.

SAMSUNG ELECTRONICS CO., LTD.,  
SAMSUNG ELECTRONICS AMERICA, INC.

*Defendants.*

Case No. 2:24-cv-00746-JRG  
[Member Case]

Case No. 2:24-cv-00764-JRG  
[Member Case]

Case No. 2:24-cv-00765-JRG  
[Member Case]

WILUS INSTITUTE OF STANDARDS AND  
TECHNOLOGY INC.,

*Plaintiff,*

v.

ASKEY COMPUTER CORP.,  
ASKEY INTERNATIONAL CORP.

*Defendants.*

Case No. 2:24-cv-00766-JRG  
[Member Case]

Case No. 2:24-cv-00753-JRG-RSP  
[Member Case]

**WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.'S  
OPENING CLAIM CONSTRUCTION BRIEF**

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1	U.S. Patent No. 11,159,210	'210 patent
2	U.S. Patent No. 10,313,077	'077 patent
3	U.S. Patent No. 10,687,281	'281 patent
4	U.S. Patent No. 11,470,595	'595 patent
5	U.S. Patent No. 11,129,163	'163 patent
6	U.S. Patent No. 11,700,597	'597 patent
7	U.S. Patent No. 11,116,035	'035 patent
8	U.S. Patent No. 11,516,879	'879 patent
9	U.S. Patent No. 10,651,992	'992 patent
10	U.S. Patent No. 11,128,421	'421 patent
11	U.S. Patent No. 10,820,233	'233 patent
12	U.S. Patent No. 10,931,396	'396 patent
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19	Samsung's Petition for <i>Inter Partes</i> Review of '281 Patent, Paper 2, IPR2025-00988 (May 20, 2025)	'281 IPR Pet.

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20	Samsung’s Petition for <i>Inter Partes</i> Review of ’595 Patent, Paper 2, IPR2025-00933 (May 13, 2025)	’595 IPR Pet.
21	Samsung’s Petition for <i>Inter Partes</i> Review of ’163 Patent, Paper 2, IPR2025-00935 (Apr. 30, 2025)	’163 IPR Pet.
22	Samsung’s Petition for <i>Inter Partes</i> Review of ’597 Patent, Paper 2, IPR2025-00936 (Apr. 30, 2025)	’597 IPR Pet.
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\* All exhibits attached to the concurrently filed declaration of James S. Tsuei

Plaintiff Wilus submits this opening claim construction brief to address 29 disputed claim terms. For most terms, Defendants Samsung and Askey provide no constructions and assert that the terms are indefinite. But they fall far short far short of proving indefiniteness by clear and convincing evidence. In the meet and confers leading to claim construction, Defendants failed to identify two or more alternative meanings that render the terms ambiguous. Their primary argument was that the terms were allegedly broad and that not every possibility was described in the specification. This fails. That a claim term (in isolation) is broad is not a basis for indefiniteness. This only shows that the term is entitled to the full scope of its plain meaning.

Otherwise, Defendants' assertions fail for three overarching reasons. *First*, the claim language and the specification are clear. The claims use known technical terms in wireless communications or common English words that would be readily understood to a POSITA. *Second*, Defendants' indefiniteness arguments are legally flawed. For any term, it fails to identify any fundamental ambiguity that would render the term indefinite. For instance, Defendants give examples of narrower meanings that might be encompassed by a term. But this merely shows that the plain meaning of a term is broad and covers multiple examples. This is not a proper basis for indefiniteness. *Third*, Defendants' own IPRs on the asserted patents undermines indefiniteness. In those IPRs, Defendants had no problem understanding the disputed terms and allegedly mapping them to the prior art. Nor did Defendants propose any constructions in their IPRs.

## **I. THE ASSERTED PATENTS**

The asserted patents in the captioned cases are U.S. Patent Nos. 11,159,210 (“210 patent”); 10,313,077 (“077 patent”); 10,687,281 (“281 patent”); 11,470,595 (“595 patent”); 11,129,163 (“163 patent”); 11,700,597 (“597 patent”); 11,116,035 (“035 patent”); 11,516,879 (“879 patent”); 10,651,992 (“992 patent”); 11,128,421 (“421 patent”); 10,820,233 (“233 patent”); 10,931,396 (“396 patent”); 11,664,926 (“926 patent”).

**A. Overview of the Asserted Patents**

The '210 patent is entitled “Wireless communication method and wireless communication terminal for signaling multi-user packet.” 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 MU-MIMO or single-user transmissions.

The '077 patent is entitled “Wireless communication method and wireless communication terminal for coexistence with legacy wireless communication terminal.” The '077 patent describes techniques that can advantageously improve the efficiency of the wireless LAN system while allowing coexistence with legacy wireless LAN devices. '077 patent at 5:39-47. The '077 Patent is used by products that implement the Wi-Fi 6 (802.11ax) standard for wireless communications. In Wi-Fi 6, the Physical Layer Protocol Data Unit's (PPDU) preamble consists of a legacy portion at the beginning of the preamble. *Id.* at 14:17-34, Fig. 6. In Wi-Fi 6, the “legacy preamble may include L-STF, L-LTF, and L-SIG for compatibility with a legacy terminal.” *Id.* at 14:22-24, Fig. 9. The L-SIG field is used to communicate rate and length information.

The '077 patent recognizes that: “when a non-legacy physical layer frame is transmitted, the legacy wireless communication terminal may not know the duration of the non-legacy physical layer frame and may perform channel sensing repeatedly.” *Id.* at 28:32-52, 11:3-41. “To solve this

problem, the L-SIG may include length information used for determining the duration of a non-legacy physical layer frame after the L-SIG.” *Id.* The ’077 patent proposes that the length information in the L-SIG filed be calculated according to specific formulas set forth in the claims. The current Wi-Fi 6 standard adopted the same formulas.

The ’281 and ’595 patents are entitled “Wireless communication method and wireless communication terminal, which use discontinuous channel” and “Wireless communication method and wireless communication terminal, which use discontinuous channel.” The ’281 and ’595 patents describe techniques for wireless devices to identify and use non-contiguous resources. ’281 patent at 1:33-37, 3:43-45. The patents can signal non-contiguous channel allocation information, including the unassigned resource unit. *Id.* at 1:33-37, 3:43-45, Abstract. The disclosed techniques can advantageously increase the total resource utilization rate and improve the performance of the wireless LAN system. *Id.* at 5:10-14.

The ’281 and ’595 patents address issues for signaling unassigned resource unit with preamble puncture in a channel. The patents can indicate puncture information in a channel and identify an unassigned resource unit with preamble puncturing. *See* ’281 patent at 3:43-64, 4:8-34, 33:59-62. The patents describe that that, due to the limitation of the available number of bits in the HE-SIG-A, various non-contiguous channel allocation information might not be signaled if the non-contiguous channel allocation information were signaled solely via subfield(s) of the HE-SIG-A. *Id.* at 38:64-66. If the non-contiguous channel allocation information were signaled solely via sub-field(s) of the HE-SIG-B, the signaling overhead of the HE-SIG-B would increase. *Id.* at 39:23-25. The patents teaches that non-contiguous channel allocation information may be signaled via a combination of subfield(s) of the HE-SIG-A and subfield(s) of the HE-SIG-B. Therefore, the subfield(s) of the HE-SIG-A (e.g. the bandwidth field) may signal at least a portion of the non-contiguous channel allocation information (e.g., channel information to be punctured)

and the subfield(s) of the HE-SIG-B may signal the remaining portion of the non-contiguous channel allocation information. '281 Patent at 3:43-4:34, claims 1 and 8.

The '163 and '597 patents are entitled “Wireless communication method and wireless communication terminal in basic service set overlapping with another basic service set.” They are directed to handling operations based on BSS colors in the presence of BSS color collisions. '163 patent at 16:22-27, FIG. 8. Due to color collisions in certain situations, operations based on BSS colors are no longer allowed since BSS colors cannot be reliably used to perform these operations. The patents recognize that even with BSS color collisions, BSS color-based operations can still be performed, e.g., by using other techniques that do not use BSS color. *Id.* at 3:52-59. Specifically, the patents teach that, in the event of color collision, operations based on BSS color are carried out by employing parameters different from the BSS color, e.g. MAC address or other RXVECTOR parameters. *Id.* at Fig. 22, 14:65-15:9, 16:65-17:29.

The '035 and '879 patents are entitled “Wireless communication method using enhanced distributed channel access, and wireless communication terminal using same.” The '035 and '879 patents relate 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). '035 patent at 1:35-2:67. The patents 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 '035 and '879 patents describe and enable an STA to switch between two sets of EDCA parameters: (1) legacy EDCA parameter set and (2) MU EDCA parameter set. *Id.* at Figs. 6-7. 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. For example, and as shown in certain embodiments, the STA switches to MU EDCA when an AP transmits a trigger frame for uplink MU transmission. *Id.* at Figs. 12-14. After sending a trigger-based PPDU, the STA sets the second parameter set timer. *Id.* When it expires, the STA reverts to legacy EDCA. and associated written descriptions. *Id.*

The '992, '421, '233, '396, and '926 patents. The '992 patent is representative of the '421, '233, '396, and '926 patents for purposes of claim construction. The '992 patent is entitled “Wireless communication method and wireless communication terminal for coexistence with legacy wireless communication terminal.” In exemplary embodiments, the wireless system includes a processor configured to transmit a non-legacy physical layer frame including a legacy signaling field including information decodable by a legacy wireless communication terminal by using the transceiver. '992 patent at Abstract. The patent addresses interpreting mixed legacy/non-legacy preambles to coexist with legacy STAs by extracting parameters from defined fields. This enables correct decoding of non-legacy frames amidst legacy signaling.

## **B. Level of Ordinary Skill**

For purposes of claim construction, Wilus doesn't dispute Defendants' proposed definition for the level of person of ordinary skill in the art (POSITA): “a Bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and at least three years of experience in the research, design or development of wireless communication devices, systems, and/or networks, or the equivalent, as of 2015-2017 timeframe.” Lanning Decl. ¶ 31. Further: “Increased educational experience can make up for less work experience, and vice versa.” *Id.*

**II. DISPUTED TERMS FOR '210 PATENT**

- A. “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” ('210 patent, claims 1, 6)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

This phrase of the '077 patent uses terms readily understandable to a POSITA in the field. Earlier in the claim construction exchange stage, Defendants contended that this term was invalid under IPXL-type indefiniteness, saying that the asserted claims improperly mixed system claims with a method step expressed through the verb “identified.” Defendants’ claim construction expert, Mark Lanning, does not offer an opinion based on IPXL-type indefiniteness, but contends instead more generally that this term is “vague and ambiguous.” Mr. Lanning’s opinion rests principally on the argument that “POSITA would not know ... what structure or steps are encompassed” by the language: “a format ... is identified.” Lanning Decl. ¶ 112. Whether considering Defendants’ attorney-asserted IPXL argument or Mr. Lanning’s “structure or steps” opinion, Defendants’ arguments fail to sustain scrutiny, and it is plain that nothing in this term suggests that a POSITA would be unable to know its scope with reasonable certainty.

To begin, this term should be considered in its proper context, which includes at least the entirety of the relevant “processor” limitation in which it appears:

wherein the processor is configured to:

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

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

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***

'210 patent, cl. 1 (all emphasis in brief added). The disputed language appears within the context of a “processor” limitation, which is configured to “decode” certain high efficiency multi-user PHY protocol data unit (“HE MU PPDU”) information from a Wi-Fi packet. The “HE MU PPDU” element, which is required to “include[] high efficiency signal A field (HE-SIG-A) and high efficiency signal B field (HE-SIG-B),” is constrained by the wherein limitations at the end of claims 1 and 6. Thus, HE MU PPDU includes “a SIG-B compression field” which may “indicate[] full bandwidth multi User-Multiple Input Multiple Output (MU-MIMO) transmission,” and, when it does, “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.”

In other words, the claimed “processor” is configured to decode a HE MU PPDU, and if a certain condition is met (“SIG-B compression field . . . indicates full bandwidth [MU-MIMO]”), then the decoded information identifies a certain a piece of information (“format of user field(s)”) based on another piece of information (“number of MUI-MIMO users” indicated in HE-SIG-A). The logical structure of the claim language is akin to: “the post office routes packages to their destination; when the package has a mailing label, then the format of the postal code is identified based on the destination’s country.” For instance, where the country field reads “USA,” then the postal code format is identified as consisting of five digits (e.g., “75670”). The '210 patent confirms this straightforward understanding by discussing this aspect of the claimed invention:

***a configuration of a user specific field of the HE-SIG-B may be identified based on information obtained from at least one subfield of the HE-SIG-A.***

When the SIG-B compression field of the HE-SIG-A indicates full bandwidth MU-MIMO transmission, the configuration of the user specific field of the HE-SIG-B may be identified based on information on the number of MU-MIMO users indicated by the HE-SIG-A.

A type of a user field constituting the user specific field of the HE-SIG-B may include a user field for MU-MIMO allocation and a user field for non-MU-MIMO

allocation. *The user specific field of the HE-SIG-B may include user fields for MU-MIMO allocation when the information on the number of MU-MIMO users indicates two or more users. The user specific field of the HE-SIG-B may include one user field for non-MU-MIMO allocation when the information on the number of MU-MIMO users indicates a single user.*

'210 patent, at 3:15-36. In plain English, this specification disclosure teaches that when HE-SIG-A indicates two or more users involved in the packet transmission, then the user-specific fields of HE-SIG-B are formatted for MU-MIMO allocation. When HE-SIG-A indicates only one user, in contrast, then the user field in HE-SIG-B is formatted for non-MU-MIMO allocation. No ambiguity exists here to a POSITA either when reading the specification or the claim language.

Turning to Defendants' arguments, Mr. Lanning argues that "a POSITA would not know from the claim term what structure or steps are encompassed by the claims." *See* Lanning Decl. ¶¶ 112-113. He also contends that the language "a format ... is identified" require a "result obtained," but that it is "unclear who or what obtains this result." *Id.* These alleged confusions are unsupported. As shown above, the language is a limitation constraining the format of the user-specific field in the HE MU PPDU—it is not a step to be performed. As Mr. Lanning's argument hinges on the words "is identified," it must also be true under his logic that the following claim is likewise indefinite: "A database, where a subsection of the database is identified by a name based on the content stored in the database." But this manner of patent claim drafting is commonplace and thus doesn't suggest any such claim is indefinite.<sup>1</sup>

As for Mr. Lanning's argument that there must be some other structure in the claim to which the disputed term is tethered—the answer is clear from the claims themselves. For claim 1, the terminal has a processor, and the processor must be configured to *decode* a HE MU PPDU "based on information obtained from the preamble," and the preamble contains both (1) HE-SIG-

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<sup>1</sup> *Compare* Ex. 26 (U.S. Patent 11,076,087, assigned to Samsung) (system claim 1: processor configured to "determine a similarity between a previous image and the one or more images, and if the similarity is less than a specified value, determine a scene corresponding to the one or more images based on the recognized first object and the identified type of the background region").

A and (2) HE-SIG-B. The last three “wherein” limitations of claim 1 are limitations constraining the functionality of the processor and, specifically, the decoding of the HE MU PDU. Mr. Lanning fails to recognize this, nor does he note the absence of semicolons separating the functional language constraining the claimed “processor” that plainly suggest such a conclusion.

For claim 6, Mr. Lanning acknowledges the possible involvement of the “decode” step, but comes to the wrong conclusion. *See* Lanning Decl. ¶ 114. He says that the disputed language is “not recited as part of the ... ‘decode’ step or as its own step,” and so therefore creates “genuine uncertainty.” *Id.* But the “wherein” clauses in claim 6, like those in claim 1, are likewise not separated from the “decode” language by any semicolons indicating logical separation. In contrast, where the patentees here intended to separate method steps or structural elements within the claimed system they did so with semi-colons—a commonplace claim drafting practice. Claim 6’s “receive” and “decode” steps, for example, are separated by a semicolon. Put another way, the “wherein” clauses of claim 6 are constraints on the “decode” step—there is no ambiguity.

### III. DISPUTED TERMS FOR '077 PATENT

#### A. “obtain length information indicating information on a duration of the non-legacy physical layer frame, from the legacy signaling field” ('077 patent, claim 1)

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

Defendants contend that this term from claim 1 is indefinite because of the word “duration.” *See* Lanning Decl. ¶¶ 76-79. Defendants’ claim construction expert, Mr. Lanning, argues that “duration” here can refer to “the entire non-legacy physical layer frame” or “a portion of the non-legacy physical layer frame.” *Id.* Mr. Lanning asserts that “the specification describes that there are multiple durations within a non-legacy physical layer frame,” and so suggests that the claim is indefinite because it is allegedly unclear which of the “multiple durations” discussed

in the specification would satisfy the claim. For instance, Mr. Lanning points out that claim 8, which contains similar but narrower language to the claim 1 phrase here, which Mr. Lanning interprets to mean that it is impossible for a POSITA to know what the “broader meaning” in claim 1 would be. *Id.* ¶ 78. These arguments lack merit.

Defendants’ argument fails because it mistakes breadth with indefiniteness. *See SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005) (“[b]readth is not indefiniteness.” (citation omitted)); *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1350 (Fed. Cir. 2022) (“[A] claim is not indefinite just because it is broad.”). Here, Mr. Lanning has identified—with no reservations—two ordinary interpretations of what “duration” might mean in claim 1. So, under Mr. Lanning’s view, the claim language could be practiced in two ways: either when the duration information obtained is for the “entire” frame or when the duration information obtained is for a “portion” of the frame. *See* Lanning Decl. ¶¶ 76-78. Mr. Lanning’s objection, in plain English, is that a POSITA must choose between the two possibilities for the claim to be definite. But this is a false dichotomy and overlooks the more reasonable conclusion: that the language, “*a* duration of the non-legacy physical layer frame,” would be understood with certainty by a POSITA to cover *both* the duration of the entire frame and any “portion” of it. That is, the words “*a* duration of the [] frame” means what they plainly suggest: any “duration” information of the frame. If there is a duration obtained, whether it be for the “entire” frame or a “portion” of it, the limitation is satisfied.

Indeed, Mr. Lanning’s identification of a discernible scope difference between claim 1 and similar language in claim 8 (Lanning Decl. ¶ 78) confirms that there is no indefiniteness: i.e., a POSITA would simply read claim 8 and conclude (as Mr. Lanning does) that claim 8’s “duration” refers to that of a “portion” of the frame (“duration ... after the legacy signaling field”), while claim 1 encompasses both the duration of a “portion” of the frame as well as the “entire” frame.

**B. “obtaining length information indicating information on a duration of the non-legacy physical layer frame after a legacy signaling field, from the legacy signaling field” (’077 patent, claim 8)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

Similar to the previous “duration” term from claim 1, Defendants contend this language from claim 8 is indefinite. *See* Lanning Decl. ¶¶ 83-90. Defendants are wrong for at least the same reasons. Mr. Lanning argues that this term in claim 8 is indefinite due to the language, “after a legacy signaling field.” He contends that “the specification and drawings disclose multiple legacy signaling fields within the non-legacy physical layer frame,” and so the claim is indefinite because a POSITA supposedly “would not understand which legacy signaling field is being referred to in claim 8.” Lanning Decl. ¶ 85. In support, Mr. Lanning analyzes and opines from 19:49-53 and Figure 16 of the ’077 patent, which he characterizes as “disclosing multiple legacy signaling fields within the non-legacy physical layer frame.” *See* Lanning Decl. ¶ 88. According to Mr. Lanning, the L-SIG field of a PPDU contains multiple constituent “legacy signaling fields,” which he says could be “length field, rate field, parity field, tail field etc.,” and any of these L-SIG subfields could be a “legacy signaling field” within the scope of claim 8. *See id.* ¶¶ 88-89.

This opinion is wrong and unsupported by evidence. First, as his declaration omits, the ’077 patent (and the relevant IEEE 802.11 standards) say what “legacy signaling field” is to a POSITA. “Legacy signaling field” is the “L-SIG” field of a Wi-Fi frame. It does not refer to some constituent subfield of L-SIG, and nor would a POSITA interpret the claim thusly. *See* ’077 patent, 12:58-64 (“FIG. 7 shows a preamble structure of IEEE 802.11n, 11a and 11ac physical layer frames. ... The legacy preamble includes a legacy short training field (L-STF), a legacy long training field (L-LTF), and a **legacy signal field (L-SIG)**[.]”). Indeed, the term “legacy signal field” / “legacy signaling field” has been universally used within the field (including by all major

IEEE 802.11 group participants) to refer specifically to the L-SIG portion of a frame. *See, e.g.*, Ex. 27, at 9:22-23 (U.S. Patent No. 11,398,938 assigned to Huawei) (defining “legacy signaling field” as “L-SIG” and, *inter alia*, claiming a “L-preamble” with “a legacy signaling (L-SIG) field”).<sup>2</sup> The evidence shows that a “legacy signaling field”—a term used in the Wi-Fi standard long before the priority of the ’077 patent—is a term of art with a readily ascertainable meaning to the POSITA.

Conversely, no evidence, including the ’077 patent, the evidence attached to Mr. Lanning’s declaration, or other authoritative resource, supports Mr. Lanning’s argument that “legacy signaling field” would be understood to refer to a *subfield* of L-SIG such that a POSITA would somehow become intractable confused when determining claim scope. Certainly, no evidence is cited by Mr. Lanning. *See* Lanning Decl. ¶¶ 88-90.

Even if Mr. Lanning were correct that “legacy signaling field” would be interpreted to refer to a specific subfield of L-SIG such as those shown in Figure 16 of the ’077 patent, Defendants *still* have not shown indefiniteness because, through Mr. Lanning’s own opinion, Defendants have already identified—concretely and without ambiguity—all subfields within L-SIG as allegedly satisfying the “legacy signaling field” of claim 8. Defendants may contend, in turn, that means “legacy signaling field” is overbroad, but this does not help their argument because “[b]readth is not indefiniteness.” *Beecham*, 403 F.3d at 1341.

**C. “obtain[ing] information other than [the] information on the duration of the non-legacy physical layer frame through a remaining value obtained by dividing the length information by a data size transmittable by a symbol of a legacy physical layer frame” (’077 patent, claims 1, 8)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

<sup>2</sup> *See also* Ex. 28, at [0027] (U.S. Patent Appl. Pub. 2019/0116513, assigned to Qualcomm) (“the legacy preamble portion includes a legacy signaling (L-SIG) field”); Ex. 29, at 3:15-20 (U.S. Patent No. 10,177,956, initially assigned to Intel) (“a legacy signaling field (L-SIG)”).

Defendants contend that this phrase is indefinite because of the phrase, “other information.” According to Defendants’ expert, Mr. Lanning, a “POSITA would not understand what *other information* is sought.” See Lanning Decl. ¶¶ 93-94. He also argues that the use of the word “through” also creates irresolvable uncertainty for a POSITA. *Id.* ¶¶ 95-96. None of these arguments have merit. *First*, the term “information other than information on the duration of the . . . frame” is not indefinite. Mr. Lanning himself *affirmatively opines* what this language means: he says it is any information “so long as it is not ‘information on the duration of the non-legacy physical layer frame.’” Lanning Decl. ¶ 94. If a claim required, “obtaining any information about a person other than their name, by having a verbal discussion with them,” it would be unreasonable to argue the claim’s scope somehow could not be understood by an ordinary lay person with reasonable certainty. Yet that is what Mr. Lanning contends with the disputed claim language.

*Second*, the use of the word “through” presents no ambiguity, at least as to one with an ordinary command of lay English. *Compare* Lanning Decl. ¶ 95. The word “through” in the phrase provides clarity as to *how* the information is to be obtained—like with the following phrase: “obtaining enough dietary calcium through drinking milk.” Finally, Mr. Lanning contends that “it is unclear whether the terminal has to obtain a remaining value.” Lanning Decl. ¶ 96. This argument fails because the claim does not recite, as a step, a requirement that the claimed terminal obtain the “remaining value.” Mr. Lanning is attempting to manufacture ambiguities untethered to both the claim language and whether the claimed step is performed.

**D. “the duration of the non-legacy physical layer frame after the legacy signaling field” (’077 patent, claim 3)**

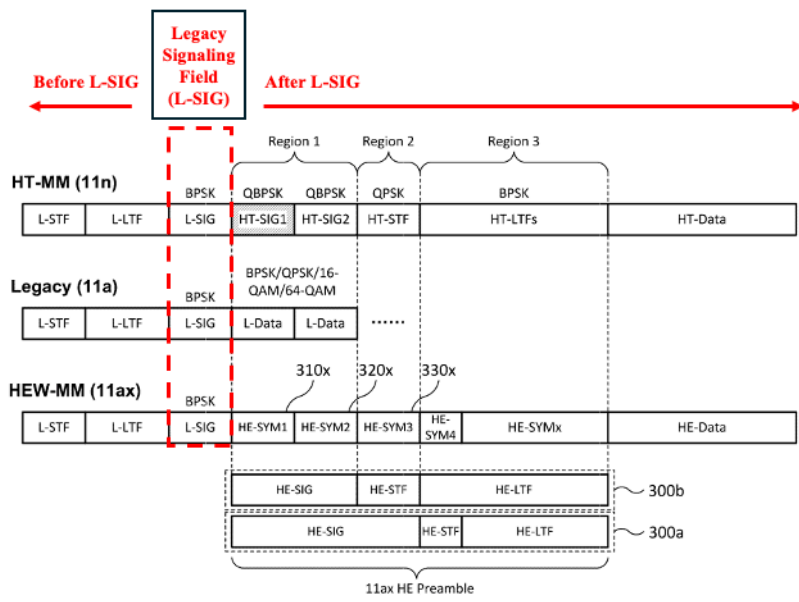
Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

Defendants contend this phrase from claim 3 is indefinite because “it is unclear whether it

refers to a similar limitation recited earlier, in the independent claim [1].” *See* Lanning Decl. ¶¶ 99-101. Defendants’ expert, Mr. Lanning, contends that claim 3 presents three possible interpretations of the disputed claim language, and the POSITA is allegedly left without any basis to choose between the three interpretations. *See id.* ¶¶ 102-103. None of Mr. Lanning’s opinions are supported by reasoned analysis or evidence.

*First*, Mr. Lanning opines that the language from claim 3 here might “refer[] to the previously recited ‘duration of the non-legacy physical layer frame’ in claim 1.” Lanning Decl. ¶ 102. This is certainly incorrect because, as Mr. Lanning acknowledges, the phrases in question between claim 1 and claim 3 are materially different. It would thus be incorrect to conclude that claim 1’s “a duration of the ... frame” supplies the antecedent basis to claim 3’s “the duration of the ... frame after the legacy signaling field.” For the same reasons, it is incorrect to conclude, as Mr. Lanning suggests, that the claim 3 language is “supposed to narrow the meaning of ‘duration of the non-legacy physical layer frame’ in claim 1.” Even if one is a subset of the other, indefiniteness does not result.

Mr. Lanning’s third interpretation, that claim 3 here “refers to a duration that is different from ‘a duration of the non-legacy physical layer frame’ recited in claim 1,” is both correct and the natural reading of claim 3 by a POSITA. The language “the duration of the non-legacy physical layer frame after the legacy signaling field” is obviously different from claim 1’s similar language, which recites “a duration of the non-legacy physical layer frame.” Claim 1’s “duration” wording is broader and refers to “*a* duration” of the frame – i.e., any duration of the frame. Claim 3, in contrast, refers to a known and specific duration: that of the frame “after the legacy signaling field.” There is no confusion here—the patent describes in detail through words and figures what this means. As just one example, consider Figure 12 (annotated) of the patent:



**'077 patent, at Fig. 12 (annotated in red).**

Mr. Lanning’s only argument here, amounting to a single sentence is about the article, “the” is unsupported. Lanning Decl. ¶ 103. It is not improper to use the article “the” in claim drafting, and nor does its use necessarily signal that there must have been some explicit antecedent basis. In claim 3, “the duration... after the legacy signaling field” is a definite and ascertainable thing—it is *the* duration of the frame after the L-SIG field.

**IV. DISPUTED TERMS FOR '281 PATENT**

- A. “obtain[ing] information of an unassigned resource unit via at least one of the bandwidth field of the HE-SIG-A and a subfield of HE-SIG-B of the received packet” ('281 patent, claims 1, 8)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

This phrase of the '281 patent uses terms readily understandable to a POSITA in the field and contains no ambiguity on its face. Indeed, in his deposition, Defendants’ expert acknowledged that a POSITA would understand the meaning of the disputed claim term itself. Lanning Dep. at 135:25–136:21. Rather, Defendants’ argument turns on an alleged inconsistency between this limitation and another limitation of the claims.

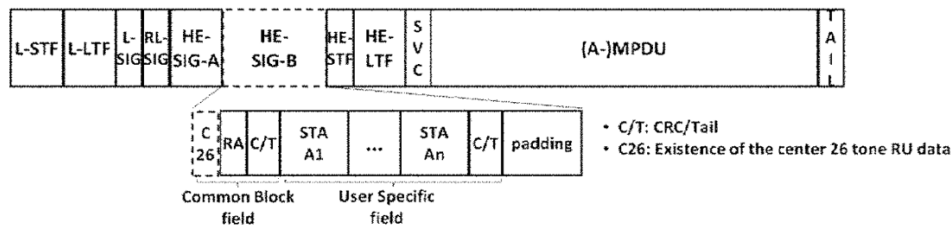
The argument rests first on Mr. Lanning’s contention that the “subfield of HE-SIG-B” in this limitation and the “resource unit allocation field of the HE-SIG-B” that appears later in the claims “cannot be the same thing” and “must have different scopes.” Lanning Decl. ¶ 122. Insofar as Defendants are arguing that these two terms do not have identical scopes, Wilus agrees. The term “subfield of HE-SIG-B” encompasses many different types of subfield, while the term “resource unit allocation field of the HE-SIG-B” covers only specific types of subfield, namely those that pertain to resource unit allocation. But Defendants’ argument requires more than that these terms have different scope; it requires that a “resource unit allocation field of the HE-SIG-B” cannot also be an embodiment of “subfield of HE-SIG-B.” See Lanning Dec. ¶ 131.

This argument flies in the face of how these terms are used in the specification. For example, the specification states:

FIG. 15 illustrates *a configuration of an HE-SIG-B field* according to an embodiment of the present invention. The HE-SIG-B field is present in the HE MU PPDU and is transmitted in units of 20 MHz. In addition, the HE-SIG-B field indicates information necessary for receiving the HE MU PPDU. As illustrated in FIG. 15(a), *the HE-SIG-B consists of a common block field* and a user specific field.

FIG. 15(b) illustrates an embodiment of a subfield configuration of the common block field of the HE-SIG-B. First, the common block field includes a resource unit allocation (RA) field. FIG. 15(c) illustrates an embodiment of the RA field.

’281 patent at 21:56–67 (emphasis added). This text is describing Figures 15(a) and 15(b):



Field	Bit	Descriptions
C26	1	Existence of Center 26 tone RU data (at >= 80MHz)
RA	8	Resource Allocation
Total	9	

(b)

As described in this text and figure, the HE-SIG-B is a field, which contains a common block field, which in turn contains a resource unit allocation field. The resource unit allocation field is described as part of the “subfield configuration” of the common block field. ’281 patent at 21:63–67. In other words, it is simultaneously both a “field” in its own right and a “subfield” of something else. Thus, Mr. Lanning’s argument that the “resource unit allocation field of the HE-SIG-B” cannot be a “subfield of the HE-SIG-B” (Lanning Decl. ¶ 126) fails as it is inconsistent with how the specification describes its preferred embodiments. Nothing in the specification suggests that “subfields” are not also themselves “fields.”

Mr. Lanning also makes confusing references to “peer[s]” of fields and to “a container that defines [subfields],” apparently seeking to require that a field lie at some particular level in a hierarchy of field structures in order to be considered a “subfield of the HE-SIG-B.” There is no support for such a requirement in the intrinsic or extrinsic records. The claim does not say “direct subfield,” and there is no reason to say that a subfield of a subfield of HE-SIG-B is not itself a subfield of HE-SIG-B, just as subordinates of the subordinates of a CEO are themselves the CEO’s subordinates. Indeed, the very phrase “resource unit allocation field of the HE-SIG-B” indicates a direct possessive relationship between HE-SIG-B and its resource unit allocation field—even if the latter lies multiple levels down a hierarchy of fields—such that it would be proper to consider the latter a subfield of HE-SIG-B. To impose a requirement that the “subfield of the HE-SIG-B” be a direct subfield is not only unsupported by the evidence but would also exclude a preferred embodiment (shown in Fig. 15 and the supporting text) from the independent claims, which is “rarely, if ever, correct and would require highly persuasive evidentiary support.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

Defendants’ argument further rests on an alleged inconsistency between this term’s reference to the use of “at least one of” two fields and the reference in the subsequent “wherein”

clause to use of “a combination of” two fields. Lanning Decl. ¶¶ 130–131. There is no inconsistency. As Mr. Lanning recognizes, the “wherein” clause was added during prosecution, specifically to narrow the claim, by imposing a further requirement on how the “information of an unassigned resource unit” of this disputed claim term is obtained. *Id.* ¶ 132. Of course there are possible ways of satisfying this disputed limitation that no longer satisfy the claim as a whole, due to the added “wherein” clause. If that was not the case, there would have been no reason to add the “wherein” clause; it does not render the claim indefinite. Rather, the claim clearly and unambiguously requires that both this disputed term and the “wherein” clause be satisfied. That is readily possible, for example by obtaining information of an unassigned resource unit via the combination of the bandwidth field of the HE-SIG-A and a resource unit allocation field of the HE-SIG-B. This satisfies the “wherein clause,” and because these two fields are also “at least one of the bandwidth field of the HE-SIG-A and a subfield of HE-SIG-B,” it satisfies this disputed term. Defendants’ arguments for indefiniteness of this term fail.

**V. DISPUTED TERMS FOR '595 PATENT**

**A. “the total bandwidth information” ('595 patent, claim 7)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite, wherein “the total bandwidth information” refers to the total bandwidth information indicated by the bandwidth field	Indefinite

Defendants argue that this claim is indefinite for lack of antecedent basis because this phrase begins with “the” and the phrase “total bandwidth information” did not occur earlier in the claim. But “inherent components of elements recited have antecedent basis in the recitation of the components themselves.” *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001) (“the outer surface of said sphere” not lacking antecedent basis because a sphere necessarily has an outer surface); see *Energizer Holdings, Inc. v. Int’l Trade Com’n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (“anode gel comprised of zinc” antecedent basis for “said zinc anode”).

Here, a prior limitation of the claim recited “bandwidth information indicated via a bandwidth field included in the HE-SIG-A.” ’595 patent at 53:57–58. Figure 14 of the ’595 patent showed—and a POSITA would understand—the format of the various fields of the HE-SIG-A, depending on the type of PPDU being transmitted. *Id.* at 18:42–21:55. Depending on the type of PPDU, the “Bandwidth” field is either 2 or 3 bits. *Id.* at Fig. 14. As the specification explains, this field “indicates the total bandwidth,” and may also provide other information. *Id.* at 19:9–15, 19:51–58, 21:53–55. Accordingly, a POSITA would understand that the HE-SIG-A bandwidth field inherently provided total bandwidth information and thus serves as the antecedent basis for “the total bandwidth information.” Alternatively, this language is analogous to that in *Energizer*, and the “bandwidth information indicated via a bandwidth field” provides antecedent basis for “total bandwidth information.” In either case, this term has antecedent basis and is not indefinite.

Defendants also argue that the inclusion of the word “total” makes the term indefinite because of multiple purported interpretations of the word. Lanning Decl. ¶¶ 141–143. But the specification provides clear guidance on what the “total bandwidth” is in the scenarios that Mr. Lanning points to, involving gaps in the bandwidth due to puncturing or unassigned resources. For example, the specification refers to “puncturing information *within* the total bandwidth,” and it provides multiple examples where the bandwidth is punctured but the “total bandwidth” is not reduced. ’595 patent at 4:11–34. Likewise, the specification refers to situations where “some of the resource units constituting the total bandwidth are not assigned to a user,” making it clear that unassigned resources are still part of the “total bandwidth.” *Id.* at 37:20–25. Given these clear examples from the specification, Defendants fail to show a POSITA would have had any difficulty applying the term “total bandwidth information” with reasonable certainty as to its scope.

Defendants point to the fact that claims in a parent patent application were rejected during prosecution on the grounds that the term “total bandwidth information” was indefinite. Lanning

Decl. ¶¶ 144–145. But this argument overlooks the fact that the claims of the ’595 patent, including claim 7 reciting the “total bandwidth information,” were subsequently allowed by exactly the same examiners. *Compare* ’281 patent, cover *with* ’595 patent, cover. Plainly these examiners were convinced that this term did not render claim 7 of the ’595 patent indefinite, in the context of this patent. The presumption of validity under 35 U.S.C. § 282 is especially applicable here.

**VI. DISPUTED TERMS FOR ’163 AND ’597 PATENTS**

- A. “intra-BSS” (’163 patent, claims 2-3, 6, 10-11, 14; ’597 patent, claims 2-3, 6, 10-11, 14); “intra-BSS PPDU” (’163 patent, claims 2, 6, 10, 14; ’597 patent, claims 2, 6, 10, 14; ’597 patent, claims 2, 10);**

Term	Wilus’s Proposed Construction	Defendants’ Proposed Construction
intra-BSS	Plain and ordinary meaning; no further construction necessary	“a BSS including the wireless communication terminal”
intra-BSS PPDU	Plain and ordinary meaning; no further construction necessary	“a PPDU transmitted from the intra-BSS”

No separate construction on the term “intra-BSS” is necessary because the meaning of this phrase depends on the noun that it modifies. The term “intra-BSS” should be more appropriately interpreted with the context, i.e., as intra-BSS PPDU or intra-BSS NAV. As stated in the claims, if the PPDU is classified as an intra-BSS PPDU, then setting intra-BSS NAV is performed; otherwise, setting basic NAV is performed. Defendants did not raise any dispute on the word PPDU or the idea that intra-BSS NAV is set by intra-BSS PPDU. Thus, any dispute of “intra-BSS” can be resolved in the context of the phrase “intra-BSS PPDU.” Regardless, the plain and ordinary meaning “intra” should apply for intra-BSS. “Intra” plainly means within, and intra-BSS can simply be within a BSS. There is no reason to import the additional limitation of whether the BSS also includes the wireless communication terminal.

As to intra-BSS PPDU, the Court should not adopt Defendants’ proposal because it attempts to impose a narrow limitation (i.e., PPDU transmitted from the BSS containing the

wireless communication terminal) when the specification is not so strictly limited. *See also* Subsection A above. The label intra-BSS PPDU is set as a result of meeting certain conditions, which may not always coincide with the true source of the PPDU. For example, the IEEE standards describe (and a POSITA would understand) that the intra-BSS PPDU as meeting at least one of the listed conditions. Ex. 30, IEEE 802.11ax-2021 at p. 312.

This understanding also aligns with the specification which describes several examples of the intra-BSS PPDU. One example intra-BSS PPDU is a PPDU that has a predetermined BSS color. '163 Patent at 4:40-42 (“When the BSS color indicated by the PPDU is a predetermined value, the processor may regard the PPDU as an Intra-BSS PPDU”); 14:51-57. In this situation, the wireless terminal identifies a PPDU as an intra-BSS PPDU by simply adopting the information in the signaling field of the PPDU, irrespective of the true origin of the PPDU. A PPDU can also be classified as an intra-BSS PPDU based on the value “indicated by the MAC address and the signaling field of the PPDU” or “based on the partial AID field of the VHT PPDU.” '163 Patent at 28:38-42, 28:21-25, 29:14-17.

Defendants point to the '163 Patent at 11:50-61, which merely provides an example of intra-BSS PPDU. This passage starts with the phrase “[f]or convenience of explanation” and then states that “the PPDU transmitted from the Intra-BSS is referred to as an Intra-BSS PPDU.” '163 Patent at 11:50, 11:59-61. It does not use the phrase “in the present invention” or other similar limiting language. Instead, the phrase “for convenience of explanation” acknowledges that the PPDU transmitted from the Intra-BSS is an example “for convenience of explanation.” *Id.* Indeed, throughout the specifications, the Intra-BSS PPDU is discussed as a classification based on various conditions, not solely based on the PPDU’s origin.

Without a clear and unambiguous disclaimer or lexicography, courts “do not import limitations into claims from examples or embodiments appearing only in a patent’s written

description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment.” *JVW Enters., Inc. v. Interact Accessories*, 424 F.3d 1324, 1335 (Fed. Cir. 2005). Therefore, Defendants’ proposals should be rejected.

**B. “inter-BSS” / “inter-BSS PPDU” (’163 patent, claims 2, 10; 597 patent, claims 2, 10)**

Term	Wilus’s Proposed Construction	Defendants’ Proposed Construction
inter-BSS	Plain and ordinary meaning; no further construction necessary	“a BSS different from the intra-BSS”
inter-BSS PPDU	Plain and ordinary meaning; no further construction necessary	“a PPDU transmitted from an OBSS”

No construction is necessary for “inter-BSS”. “Inter-BSS” is always used in the context of “inter-BSS PPDU” for these claims. Thus, the term “inter-BSS” does not need to be separately construed. Furthermore, similar to the term “intra-BSS”, “inter-BSS” is used as an adjective in the claims, which modifies a subsequent word, i.e., PPDU. The interpretation of the inter-BSS would depend on the whole term “inter-BSS PPDU”. Defendants’ proposal ignores the context of this term and instead treats “inter-BSS” as a noun, rather than an adjective, and only adds confusion.

As to “inter-BSS PPDU,” Defendants’ proposal should be rejected because it attempts to impose a narrow limitation (i.e., PPDU from OBSS) when the specification and the industry standards do not comport with this understanding. The label inter-BSS PPDU is set as a result of meeting certain conditions, not solely based on the source of the transmission. *See, e.g.*, Ex. 30, IEEE 802.11ax-2021 at p. 312. Although the characteristics of a PPDU transmitted from an OBSS can meet one or more of the conditions of an inter-BSS PPDU, there are many ways that a PPDU can be classified as an inter-BSS PPDU. As one example, the ’163 Patent describes that “[w]hen the PPDU satisfies both an Inter-BSS PPDU condition and an Intra-BSS PPDU condition, the PPDU may be identified as an Inter-BSS PPDU.” ’163 Patent at 3:41-43. This example shows that

an inter-BSS PPDU is not limited to the source of the transmission as Defendants propose because under Defendants' origin-based proposal, a PPDU cannot both satisfy a condition of inter-BSS PPDU and a condition of intra-BSS PPDU as the two are mutually exclusive – a PPDU is either from this BSS or another BSS (i.e., an OBSS). The fact that an inter-BSS PPDU satisfies both intra-BSS and inter-BSS conditions demonstrates that the term is less concerned with the origin of the PPDU, and instead focuses on whether the conditions of the classification are met.

The '163 Patent describes a number of conditions of what inter-BSS PPDU can be, irrespective of whether the PPDU is actually from an OBSS. *See, e.g.*, '163 Patent at 28:21-29:65. For example, “when a wireless communication terminal ... receives a trigger-based PPDU without transmitting a trigger frame, the wireless communication terminal ... may identify the PPDU as an Inter-BSS PPDU.” '163 Patent at 29:62-65. As another example, when the terminal “receives a PPDU for downlink transmission, the wireless communication terminal that is an AP may identify the PPDU as an Inter-PPDU.” *Id.* at 30:4-7, 5:43-47. Also, an AP “may identify the received PPDUs as Inter-BSS PPDUs only when the DLS protocol or the TDLS protocol is not used.” *Id.* 29:44-45. Furthermore, the inter-BSS PPDU status can be preset by the access point. The wireless communication terminal receives the signaling field of the PPDU, which already signals the PPDU as an inter-BSS PPDU. *Id.* at 14:57-64. In this situation, the wireless terminal identifies a PPDU as an inter-BSS PPDU by simply adopting the information in the signaling field of the PPDU.

Defendants point to the '163 Patent at 11:50-61 which does not provide a definition of inter-BSS PPDU and instead provides an example of inter-BSS PPDU. This passage starts with the phrase “[f]or convenience of explanation” and then states that “the PPDU transmitted from the OBSS is referred to as an OBSS PPDU or an Inter-BSS PPDU.” '163 Patent at 11:50, 11:59-61. It does not state that the “in the present invention.” Instead, the phrase “for convenience of explanation” acknowledges that the PPDU transmitted from the OBSS is not the definition, but

rather an example only “for convenience of explanation.” *Id.* Indeed, reading the entire specification, there are other examples of Inter-BSS PPDU, as mentioned above, that are not limited to the sole situation of PPDU transmission from OBSS. These confirm that the inter-BSS PPDU is not just a PPDU transmitted from OBSS. Therefore, Defendants’ proposals should be rejected because there is no disclaimer or lexicography. *See VW Enters.*, 424 F.3d at 1335.

**C. “BSS color collision” (’163 patent, claims 4, 5, 12, 13; ’597 patent, claims 4, 5, 12, 13)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no further construction necessary	“a case where different BSSs correspond to the same BSS color”

Defendants’ proposal is unnecessary and would inject confusion and complexity into the claims. Each claim recites the term “BSS color collision” with the following language “. . . when the wireless communication terminal recognizes that a *BSS color collision* has occurred, wherein *the BSS color collision represents that different BSSs correspond to one BSS color.*” ’163 patent at cls. 4 & 12; ’597 patent, cls. 4 & 12. This language is incorporated into the other dependent claims. ’163 patent at cls. 5 & 13; ’597 patent, cls. 5 & 13. Thus, each claim already says what BSS color collision is: “BSS color collision represents that different BSSs correspond to one BSS color.” This is the plain and ordinary meaning, and no further construction is necessary.

Defendants’ proposal appears to be equivalent and redundant of the claim language. It is unnecessary to import a description from the specification where the claims already specify what BSS color collision is in a wherein clause. To the extent Defendants imply any differences with their proposal, the description in the claim language should control. Defendants’ construction is also highly confusing, redundant, and circular when inserted into the claims. Each claim would read: “[a case where different BSSs correspond to the same BSS color] represents that different BSSs correspond to one BSS color.” This should be rejected.

**D. “valid signaling field of the MAC frame” (’163 patent, claims 3, 11; ’597 patent, claims 3, 11)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

The claims recite a wireless communication terminal wherein the processor is configured to not perform an operation (use the TXOP Duration field for setting the Intra-BSS NAV or the Basic NAV) “when the wireless communication terminal gets a *valid signaling field of the MAC frame*.” *E.g.* ’163 patent, claim 3. In the field of wireless communications and the ’153 and ’597 patents, a POSITA would readily understand a “valid” signaling field of the MAC frame. In this context, the plain meaning of “valid” refers to correctness of the modified noun, i.e., the noun (signaling field of the MAC frame) being free of detected errors.

Defendants’ expert, Mr. Lanning, offers opinions consistent with this understanding. As he states, a POSITA would understand that “‘validity’ implies correctness, use of proper syntax, and related concepts, such as technical compatibility with a given system. *E.g.*, Ex. 18 at SAM-HP-CC\_00000014; Ex. 19 at 543; Ex. 20 at 1729 (defining ‘valid’ as ‘(computing) that is accepted by the system: a valid password.’).” Lanning Decl. at ¶ 150. Mr. Lanning further states, as a non-limiting example, that a field may be considered *valid* “when it is free of errors.” *Id.* at ¶ 152. Mr. Lanning’s cited extrinsic evidence likewise supports this understanding.

Mr. Lanning asserts indefiniteness for two primary reasons. Both fail. *First*, Mr. Lanning relies on a few alternative examples of when a field may be considered valid: “(1) when it is simply present in the received data, (2) when it is free of errors, or (3) when the value of the field is within a specified range.” *Id.* at ¶ 152. These examples don’t show that the word “valid” is indefinite. As Mr. Lanning and the extrinsic evidence acknowledge, “valid” generally refers to correctness, as detected by the system. A system may have different *implementations* for detecting correctness, i.e., whether a field is present in the received or the value of the field is within a specified range.

But these examples all within the plain meaning of valid. A “valid” signaling field of the MAC frame is simply a field that is free of detected errors. That an error may be detected through different implementations or criteria does not render the term indefinite.

*Second*, Mr. Lanning suggests the term “valid signaling field of the MAC frame” is indefinite because it is allegedly inadequately described in the specification. This fails because the specification is replete with examples that are consistent with the plain meaning of validity and inform the understanding of a POSITA. As Mr. Lanning acknowledges, this includes extensive discussion of “signaling fields,” “duration fields,” a “valid PSDU,” and a “valid Duration field value of a PSDU.” *See* Lanning Decl. ¶¶ 159-167. This is more than sufficient. Mr. Lanning again implies that the claim must narrowly recite a specific way of when/how/why a signaling field is considered “valid.” But that is not how claims are drafted nor remotely required to avoid indefiniteness. Further, to the extent Mr. Lanning is raising a written description argument, that is unfounded and regardless not a proper basis for indefiniteness.

**VII. DISPUTED TERMS FOR '035 AND '879 PATENTS**

**A. “when” ('035 patent, claims 1, 8; '879 patent, claims 1, 8)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; not indefinite	Indefinite

The term “when” is a common English word and appears in thousands of patents. Defendants identify it as the entire term for construction but provide no basis for rendering the word indefinite. Defendants’ expert Mr. Lanning asserts that in general English, “when” can be used a temporal sense or a conditional sense. *See* Lanning Decl. ¶ 185 (“To a POSITA, the term ‘when,’ generally speaking, would have had two different meanings. First, ‘when’ could be used temporally to mean ‘at the same time as.’ (or ‘at substantially the same time as). Second, ‘when’ could be used conditionally to mean ‘if,’ ‘in the event that’ or ‘provided that.’”).

Wilus agrees that these are two general meanings of the word “when” in isolation. But Defendants fail to show that the meanings are materially different and ambiguous such that the word (or any claim term containing it) is indefinite. Under Defendants approach, one could manufacture an indefiniteness argument based on countless words in the English language. This is unpersuasive and improper and should be rejected.

In particular, a POSITA would reasonably understand the meaning of the claims based on the context and surrounding claim language. Here, for example, the word “when” appears four times in claim 1 of the ’135 patent, indicated with brackets as follows:

[1] [*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 [2] [*when the transmission of the trigger-based PPDU ends*],

[3] [*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,

[4] [*when the second parameter set timer expires*], terminate an application of the second parameter set

Defendants and Mr. Lanning agree that the first and third instances of “when” are not indefinite. This is because the surrounding claim language (e.g., “when a MAC protocol data unit (MPDU) included in the trigger-based PPDU does not request an immediate response”) makes clear the phrase describes a condition (“when the MPDU . . . requests the immediate response”).

For the same reasons, the second and third instances of “when” are likewise not indefinite. Defendants improperly identify a word in isolation without the surrounding context. A POSITA would read the relevant claim phrases, which are: “when the transmission of the trigger-based PPDU ends” and “when the second parameter set timer expires.” In proper context, these phrases use the word “when” in a temporal sense. That is apparent from the structure of the phrases themselves: “when the transmission . . . ends” and “when the . . . timer expires.” Both a

transmission and a timer are processes that take time to perform. And the claim phrase expressly refer to the processes ending or expiring. This invokes “when” in a temporal sense.

The claims use “when” consistent with the term’s plain meaning and how is word is used in ordinary English. No further construction is necessary.

**B. “set[ting] a/the . . . timer” (’035 patent, claims 1, 4, 5, 8; ’879 patent, claims 1, 4, 5, 8)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no further construction necessary	“assign[ing] a duration to a/the timer”

The terms “sets or “set a . . . timer” are ordinary English phrases without a special technical meaning in the art. They carry their plain and ordinary meaning, and no further construction is required. Defendants propose to change the word “set/setting” as “assign/assigning a duration to.” But they do not even attempt to argue lexicography or disclaimer. The Court should thus decline to rewrite the claims differently from what the Applicant wrote and the Examiner allowed.

To the extent Defendants intend to argue that “setting . . . a timer” excludes starting a timer, that position is wrong and inappropriate as a matter of claim construction. Again, Defendants can point to no disclaimer in the specification or prosecution history to support such an exclusion. And the plain meaning of “set” or “set . . . a timer” is not limited to assigning a duration. As indicated by the parties’ general-purpose dictionaries, the verb “set” includes a myriad of definitions and meanings. And each dictionary contains definitions that contemplate starting or initiating. This conforms with normal English usage. If a cooking recipe calls for setting the oven timer for 30 mins., that reasonably includes adjusting the timer and starting it.

The claims and specification likewise use “set” to include starting a timer. For example, claim 1 of the ’035 patent recites: “set the second parameter set timer for the access category of the MPDU for which immediate response is received, when the second parameter set timer expires

...” Since the claim discusses setting a timer and then the set timer expiring, it is nonsensical to interpret “setting” as adjusting the timer but not starting it. The specification also uses “setting” to imply and include starting a timer. E.g., ’035 patent at 3:28-34 (“set a second parameter set timer according to [a condition], and when the second parameter set timer expires, terminate the application of the second parameter set”); id. at 19:52-56 (“the wireless communication terminal may set the MU EDCA timer[.] At this time, when the MU EDCA parameter set application condition is not satisfied for a certain period after setting the MU EDCA timer, the wireless communication terminal may be allowed to terminate the MU EDCA parameter set application”).

**VIII. DISPUTED TERMS FOR ’077, ’992, ’421, ’233, ’396, AND ’926 PATENTS**

- A. “[a] wireless communication terminal” (’077 patent, claims 1, 8; ’992 patent, claims 1, 7; ’421 patent, claims 1, 5; ’233 patent, claim 1; ’396 patent, claims 1, 9; ’926 patent, claims 1, 8); “[a] wireless communication method of a terminal” (’233 patent, claim 6)**

Wilus’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, wherein “terminal” includes a non-access point station, an access point, or both.	Plain and ordinary meaning, wherein “wireless communication terminal” means “user equipment for wireless communication.”

The term “[a] wireless communication terminal” appears in several asserted patents/claims, as listed above. The ’077 and ’992 patents are representative of all patents (and each other) for purposes of construing this term. The parties agree that the term “wireless communication terminal” carries its plain meaning in view of the specification. The sole dispute is whether the “terminal” can include a non-access point station, an access point, or both (Wilus’s proposal) or whether the term is limited to “user equipment” (Defendants’ proposal).

On this dispute, the specification is dispositive in Wilus’s favor. The specification states that the term “terminal,” as used in the specification and claims, refers to a wireless communication device “such as non-AP STA, or an AP, or both terms”:

The station (STA) is a predetermined device including medium access control (MAC) following a regulation of an IEEE 802.11 standard and a physical layer interface for a wireless medium, and includes both a non-access point (non-AP) station and an access point (AP) in a broad sense. Further, *in the present specification, a term ‘terminal’ may be used to refer to a concept including a wireless LAN communication device such as non-AP STA, or an AP, or both terms.*

’077 patent at 7:58-66; ’992 patent at 7:60-8:1; ’421 patent at 8:2-11; ’233 patent at 5:54-60; ’396 patent at 6:57-63; ’926 patent at 7:3-9.

Wilus’s proposal comes directly from the specification. It reflects the full scope of the plain meaning of the “wireless communication terminal” in the context of the patents. Given the specification, there is no basis to limit the term to “user equipment” as Defendants propose. The patents expressly state that a terminal includes an access point (AP). *Id.* The patents then explain that “[t]he access point (AP) is an entity that provides access to the distribution system (DS).” *E.g.* ’077 patent at 8:9-11. Further, “in the present invention, the AP” may include “a centralized controller, a base station (BS), a node-B, a base transceiver system (BTS), and a site controller in a broad sense.” *E.g., id.* at 8:15-20.

Defendants cannot reconcile their proposal with the specifications’ teachings above. Nor can they identify any lexicography or disclaimer that would limit the claimed terminal to “user equipment.” Even if certain patents described user equipment as an example of a terminal, that is not limiting and does not supersede the patents’ description of a terminal as including a non-access point station, an access point, or both.

## IX. CONCLUSION

For the foregoing reasons, the Court should (a) reject Defendants’ indefiniteness assertions and projected constructions, and (b) adopt Wilus’s proposed constructions.

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**CERTIFICATE OF SERVICE**

I certify that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system.

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