

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

AX Wireless LLC,

Plaintiff,

v.

DELL INC., and DELL TECHNOLOGIES
INC.

Defendants.

Civil Action No. 2:22-cv-277-RWS-RSP

JURY TRIAL DEMANDED

AX WIRELESS LLC,

Plaintiff,

v.

HP Inc.

Defendant.

Civil Action No. 2:22-cv-279-JRG-RSP

JURY TRIAL DEMANDED

AX WIRELESS LLC,

Plaintiff,

v.

LENOVO GROUP LIMITED,

Defendant.

Civil Action No. 2:22-cv-280-RWS-RSP

JURY TRIAL DEMANDED

PLAINTIFF'S OPENING CONSTRUCTION BRIEF

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	OVERVIEW OF THE ASSERTED PATENTS.....	1
III.	DISPUTED TERMS FOR CLAIM CONSTRUCTION	4
A.	“OFDM symbol”.....	4
1.	The Intrinsic Evidence Consistently Refers to an OFDM Symbol as a Signal That Carries One or More Bits of Data.....	4
2.	Defendants’ Construction Divorces The Term From Its Context.....	8
3.	Neither the Intrinsic Nor the Extrinsic Evidence Supports Requiring Each Subcarrier of an OFDM Symbol Be Modulated with Data Bits	8
B.	“wherein the second packet format is distinguished from the first packet format by detecting, from the received wireless packet, the second header field which repeats the first header field”	12
IV.	CONCLUSION.....	18

TABLE OF AUTHORITIES

Page(s)

CASES

<i>Akzo Nobel Coatings, Inc. v. Dow Chem. Co.</i> , 811 F.3d 1334 (Fed. Cir. 2016).....	17
<i>Cheese Systems, Inc. v. Tetra Pak Cheese and Powder Sys., Inc.</i> , 725 F. 3d 1341 (Fed. Cir. 2013).....	9
<i>CommScope Techs. LLC v. Dali Wireless Inc.</i> , 10 F.4th 1289 (Fed. Cir. 2021)	16
<i>Cont’l Circuits LLC v. Intel Corp.</i> , 915 F.3d 788 (Fed. Cir. 2019).....	9
<i>ePlus, Inc. v. Lawson Software, Inc.</i> , 700 F.3d 509 (Fed. Cir. 2012).....	12
<i>Ironburg Inventions Ltd. v. Valve Corp.</i> , 64 F.4th 1274 (Fed. Cir. 2023)	12
<i>Liberty Ammunition, Inc. v. United States</i> , 835 F.3d 1388 (Fed. Cir. 2016).....	16
<i>Microsoft Corp. v. i4i Ltd. P’ship</i> , 564 U.S. 91 (2011).....	12
<i>Nature Simulation Sys. Inc. v. Autodesk, Inc.</i> , 50 F.4th 1358 (Fed. Cir. 2022)	17
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 572 U.S. 898 (2014).....	12, 17
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	8
<i>SkinMedica, Inc. v. Histogen Inc.</i> , 727 F.3d 1187 (Fed. Cir. 2013).....	10
<i>Sonix Tech. Co. v. Publ’ns Int’l, Ltd.</i> , 844 F.3d 1370 (Fed. Cir. 2017).....	12
<i>Sycamore IP Holdings LLC v. AT&T Corp.</i> , No. 2:16-CV-588-WCB, 2017 WL 1045949 (E.D. Tex. Mar. 16, 2017).....	10

<i>Trs. of Columbia Univ. v. Symantec Corp.</i> , 811 F.3d 1359 (Fed. Cir. 2016).....	10
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STATUTES

35 U.S.C. § 282.....	12
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I. INTRODUCTION

AX Wireless's Asserted Patents relate to Wi-Fi networks. The parties' dispute just two terms: "OFDM symbol" and "wherein the second packet format is distinguished from the first packet format by detecting, from the received wireless packet, the second header field which repeats the first header field" (the "distinguished" limitation). AX Wireless's construction of "OFDM symbol" reflects the patents' intrinsic record, while Defendants' construction contradicts it by introducing limitations inconsistent with an ordinarily skilled artisan's understanding. And as AX Wireless explains below, the meaning and scope of the "distinguished" limitation is readily understandable by those of skill in the art—Defendants' indefiniteness arguments are both unsupported and unsupportable.

The Court should reject Defendants' claim construction positions and adopt AX Wireless's positions.

II. OVERVIEW OF THE ASSERTED PATENTS

There are eight asserted patents in this case: U.S. Patent Nos. 9,584,262, 9,614,566, 9,973,361, 10,079,707, 10,291,449, 10,554,459, 10,917,272, 11,212,146 (collectively, "Asserted Patents"). The Asserted Patents relate to improving communications in wireless Orthogonal Frequency Division Multicarrier ("OFDM") networks; they share substantially the same specification. The '262 patent, which claims priority to a provisional application filed August 21, 2009, is the direct parent of the other seven.¹

A brief background on wireless OFDM communications is helpful. As the asserted patents explain, "[c]onventional multi-user communications system[s]"—Wi-Fi, for example—"use frame-based (or packet-based) transmission to communicat[e] between two or more users over a

¹ For ease of reference, citations below are to the '262 patent unless otherwise noted.

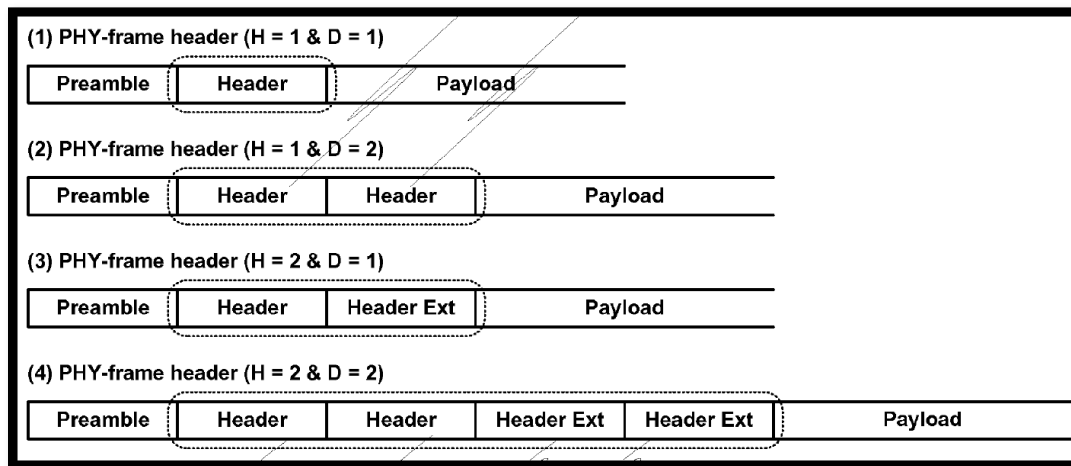
shared channel based on Orthogonal Frequency Division Multiplexing (OFDM).” Ex. 1, (’262 patent), 1:28-31. OFDM, “also referred to as multicarrier modulation,” is a transmission method that “divides the transmission frequency band into multiple subcarriers (also referred to as tones or sub-channels).” *Id.*, 1:28-31, 1:37-42. A subcarrier enables the transmission of data bits associated with a wireless data packet, by which one or more of the packet’s data bits may modulate, or vary the waveform properties, of a subcarrier. *See id.* In OFDM communications, “a packet is usually formed by a preamble, header, and payload.” *Id.*, 1:33-34.

The Asserted Patents generally relate to improving the reliability of OFDM communications through novel configurations of the header portion of a data packet. *Id.*, 1:21-24. The Asserted Patents recognize that it “is essential to decode the header reliably” because the “header contains important control information for the receive to decode the payload properly, and also provides information about the packet length for virtual carrier sensing.” *Id.*, 1:43-46. The Asserted Patents propose using packet types with various repetition schemes of the header to protect against times when an error is introduced into the header through encoding/decoding of its corresponding data bits or when a header becomes corrupted during transmission. *Id.*, 2:64-67. This is because the disclosed header repetition schemes “provide[] additional diversity [to the header and] thereby increas[e] the likelihood of decoding the header information correctly” and improve the reliability. *Id.*

The patents disclose header repetition by varying the values of “D” and “H.” *Id.*, 2:21-25. D is defined as OFDM symbols that carry header bits and H represents other header information blocks. *See id.*, 1:48-50 (“the header containing PHY_H bits (header information block) is carried over one or two OFDM symbols ($D=1$ or 2)”), 6:35-36, 7:42-43, 8:67-9:1, 9:26-27 (each stating, “where the integer D indicates a number of header OFDM symbols that carry header bits”); *id.*,

2:64-65 (discussing how H represents “[t]he possibility of carrying more than PHY_H bits [i.e., header fields] in the header”).

As shown in Figure 1, the '262 patent describes a variety of header configurations based on a change in the value of “D” and “H.”



Id., Fig. 1. Varying D allows for 1:1 duplication of a header field (*see id.*, Fig. 1(2), Fig. 1(4)), while varying H creates more header fields that contain a different number of bits. *See id.*, Fig. 1(3), Fig. 1(4); *see also id.*, 5:44-57 (discussing the four embodiments in Figure 1.).

In one disclosed embodiment, “the transmitter selects (or determines), the at least one D value.” *Id.*, 2:40-43. “The selection may be at its own discretion, or may be based on information communicated between one or more receivers, or based on instruction(s) from one or more other receivers and/or a domain master.” *Id.*, 2:43-47. The receiver is then “able to decode packets sent by the transmitter without knowing D a prior (i.e. prior to decoding the packet header).” *Id.*, 2:50-53.

III. DISPUTED TERMS FOR CLAIM CONSTRUCTION

A. “OFDM symbol”

AX Wireless Proposed Construction	Defendants Proposed Construction
A fixed time unit of an OFDM signal carrying one or more bits of data.	The smallest unit of data transmission on a medium consisting of multiple subcarriers, each modulated by a certain number of data bits and transmitted during a fixed time called a symbol period.

AX Wireless’s proposed construction aligns with the claims’ and specification’s use of an “OFDM symbol” as a signal that carries data bits within a data packet’s header field in OFDM communications. Defendants’ construction, on the other hand, improperly limits the claims, requiring that “each” subcarrier be “modulated by a certain number of data bits.”

1. The Intrinsic Evidence Consistently Refers to an OFDM Symbol as a Signal That Carries One or More Bits of Data

The claims themselves support AX Wireless’s construction. They recite using OFDM symbols to “carry,” “receive,” “transmit,” or “determine” data bits associated with a packet’s header field in OFDM communications. *See, e.g.*, Ex. 1, (’262 patent), cl. 1; Ex. 2, (’361 patent), cl 1; Ex. 3, (’707 patent), cl. 1. For example, claim 1 of the ’262 patent recites OFDM symbols that “carry” and “determine” header bits of a first and second packet:

1. A wireless OFDM (Orthogonal Frequency Division Multiplexing) transceiver operable to:
 receive, in a first narrower frequency band, by a receiver using wireless OFDM communications, a first packet comprising a first number of OFDM symbols that carry a first plurality of header bits;
 demodulate, by a demodulator connected to and in communication with the receiver, the first number of OFDM symbols to determine the first plurality of header bits, wherein at least one header bit of the first plurality of header bits in the first packet is repeated on a plurality of OFDM subcarriers;
 receive, in a second wider frequency band, by the receiver using wireless OFDM communications, a second packet comprising a second number of OFDM symbols, less than the first number of OFDM symbols, that carry a second plurality of header bits, different than the first plurality of header bits; and
 demodulate, by the demodulator, the second number of OFDM symbols to determine the second plurality of header bits,
 wherein the first narrower and second wider frequency bands have one or more overlapping frequency regions.

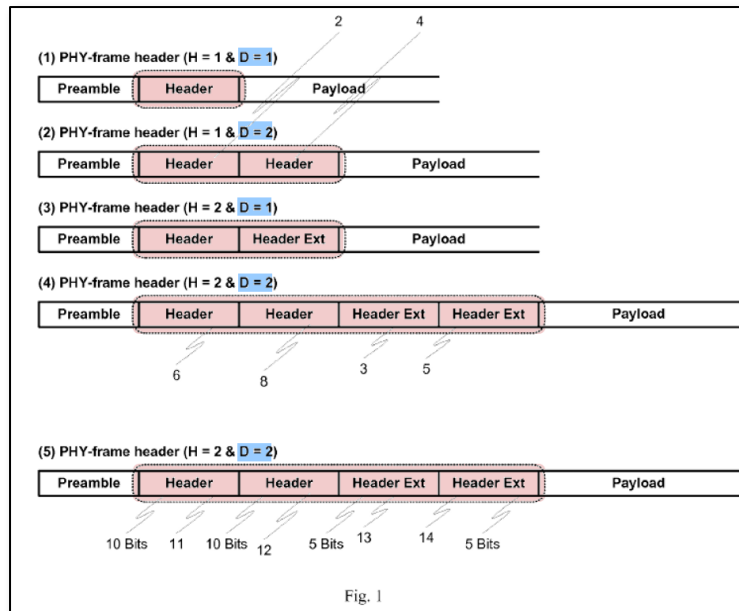
Ex. 1, ('262 patent), cl. 1 (highlighted/annotated). Here, an OFDM transceiver is operable to receive “a first packet comprising a first number of *OFDM symbols that carry* a plurality of *header bits*” and “a second packet comprising a second number of OFDM symbols ... that carry a second plurality of header bits.” *Id.*, cl. 1 (yellow); see also *id.*, cl. 17 (same). The OFDM transceiver is also operable to demodulate “the *OFDM symbols to determine* the [first]/[second] plurality of *header bits*.” *Id.*, cl. 1 (blue); see also *id.*, cl. 17 (same). Claims of the '146 patent likewise recite that “a [first]/[second] header field” is “*carried by* the [first]/[second] *OFDM symbol*” when receiving data packets in a wireless communication. Ex. 4, ('146 patent), cls. 1, 6.²

The claims also recite OFDM symbols that transmit or receive—i.e., carry—header data bits. For example, the claims of the '361, '707, '449, '459, and '272 patents recite that an “*OFDM symbol* is used *to receive*” or “*transmit* [a] part of the ... header field” that is comprised of “*header*

² The '146 patent claims two packets with “header fields.” Header fields are the same as “header parts” disclosed in the other Asserted Patents.

bits.” See, e.g., Ex. 2, (’361 patent), cl. 1 (“OFDM symbol is used to transmit the ... header field”); Ex. 5, (’449 patent), cls. 1, 9 (same); Ex. 6, (’272 patent), cls. 1, 11 (same); see also, e.g., Ex. 3, (’707 patent), cl. 1 (“OFDM symbol is used to receive the ... header field”). The claims of the ’566 patent and ’262 patent similarly recite “**OFDM symbols** to **transmit** a ... plurality of **header bits**” or a “**header portion received** on a ... number of **OFDM symbols**,” respectively. Ex. 7, (’566 patent), cls. 1, 21; Ex. 1, (’262 patent), cls. 9, 25. The claims thus consistently recite using an OFDM symbol to carry one or more data bits (e.g., header bits) as reflected in AX Wireless’s construction.

The specification also discusses OFDM symbols carrying header bits of data packets. It explains that “[c]onventional multi-user communications system[s] use frame-based (or packet-based) transmission” using OFDM transmissions, in which the “packet is usually formed by a preamble, header, and payload.” Ex. 1, (’262 patent), 1:28-35. And “the header contain[s] PHY_H **bits** (header information blocks) [that are] **carried** over one or two **OFDM symbols** (D=1 or 2).” *Id.*, 1:48-50. Consistent with its conventional use, the specification teaches that, in the embodiments corresponding to the claimed novel header structure, “[e]ach OFDM symbol carries [a] plurality of header bits.” *Id.*, 6:40-41; see also *id.*, 7:47-48 (same). For example, Figure 1 depicts embodiments of a header structure in which “an integer D [blue] indicates a number of header OFDM symbols that carry header bits [red]” (*id.*, 6:33-36):



Ex. 1, ('262 patent), Fig. 1 (annotated); *see also id.*, 7:40-43, 8:45-48, 8:65-9:1, 9:24-29. These configurations vary the number of OFDM symbols (“D”) that carry the data bits associated with parts of the header field. *Id.*, 5:44-6:7. The specification also teaches that the “header bits” of a packet are transmitted and received—i.e., carried—across a communications channel “using D header OFDM symbols.” *Id.*, 6:33-51, 6:60-66; *see also id.*, 7:4-26, 7:40-59, 8:1-11, 8:14-40, 8:41-52, 8:64-9:6, 9:20-40, 9:53-64, 10:12-23, Figs. 2-8. The written description thus consistently discloses an OFDM symbol as carrying data bits of a packet’s header field.

AX Wireless’s proposed construction also aligns with an industry recommendation for networking transceivers which was attached to the provisional application, which in turn is incorporated by reference in the Asserted Patents. *See, e.g.*, Ex. 1, ('262 patent), 2:1:46-52. The industry recommendation recites:

Symbol (OFDM symbol): a fixed time-unit of an OFDM signal carrying one or more bits of data. An OFDM symbol consists of multiple sine-wave signals or sub-carriers, each modulated by certain number of data bits and transmitted during the fixed time called symbol period.

Ex. 8, (ITU-T Draft Recommendation G.9960, January 2009 (“G.9960”)), p. 8:325-327. AX Wireless’s construction comports with the first sentence in red—“a fixed-time unit of a OFDM signal carrying one or more data bits.”³ See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005).

2. Defendants’ Construction Divorces The Term From Its Context

The first part of Defendants’ construction, “[t]he smallest unit of data transmission on a medium consisting of multiple subcarriers,” is absent from the intrinsic record. Defendants appear to rely on a technical dictionary to supply this construction. See Docket No. 118-1 at 7 (citing *The Authoritative Dictionary of IEEE Standards Terms* (7th ed. 2000)). But that is the definition for “symbol,” not “OFDM symbol.” See *id.* Defendants’ construction thus divorces the term from its context in the specification, precisely what reliance on a dictionary definition should not do. See *Phillips*, 415 F.3d at 1322 (“Even technical dictionaries or treatises, under certain circumstances, may suffer from some of these deficiencies.”). Defendants’ construction would encompass any arbitrary unit of transmission that satisfied the remaining limitations of the claim, not just one in an OFDM system, which the plain language of the claims clearly requires. The Court should reject Defendants’ construction removing “OFDM” from the language of the claim.

3. Neither the Intrinsic Nor the Extrinsic Evidence Supports Requiring Each Subcarrier of an OFDM Symbol Be Modulated with Data Bits

Unlike AX Wireless’s construction, Defendants’ proposed construction incorporates a portion of the ITU-T G.9960 Recommendation’s “OFDM symbol” definition—“an OFDM symbol consists of multiple ... subcarriers, each modulated by a certain number of data bits” (in blue above)—that contradicts both the intrinsic record of the Asserted Patents and other extrinsic

³ The parties do not dispute that an OFDM symbol is a “fixed time” signal.

evidence. Requiring that “each” subcarrier of an OFDM symbol be “modulated by [a] certain number of data bits”⁴ is not required by the intrinsic or extrinsic record.

The claims are either silent on the subcarrier modulation method used to generate the claimed OFDM symbols or, when one is recited, only require that a header bit modulate a “plurality”—i.e., more than one but not necessarily all—of the subcarriers. For example, claim 1 of the ’361 patent recites “an encoder and a modulator operable to generate a[n] ... OFDM symbol” to transmit header bits. Ex. 2, (’361 patent), cl. 1; *see also* Ex. 5, (’449 patent), cls. 1, 9; Ex. 6, (’272 patent), cl. 1. Nothing in these claims requires the header bits modulate a particular number of subcarriers, let alone all of them, to generate the OFDM symbol. *Id.* Similarly, claim 1 of the ’707 patent recites “a demodulator operable to demodulate a[n] ... OFDM symbol” to receive header bits with no mention of the number of subcarriers the header bits modulated in the received OFDM symbol. Ex. 3, (’707 Patent), cl. 1; *see also* Ex. 9, (’459 patent), cls. 1, 9; Ex. 6, (’272 patent), cl. 9. And although the claims of the ’262 and ’566 patents recite subcarriers for modulating or demodulating OFDM symbols, those claims require only that “at least one header bit ... is repeated on a *plurality* of OFDM subcarriers.” *See, e.g.*, Ex. 1, (’262 patent), cls. 1, 9, 17, 25; Ex. 7, (’566 patent), cls. 1, 11, 21, 31. A “plurality simply means two or more,” so the claimed header bit need be repeated only on, or modulate, at least two OFDM subcarriers, not each OFDM subcarrier as Defendants propose.

The Federal Circuit’s decision in *Cheese Systems, Inc. v. Tetra Pak Cheese and Powder Sys., Inc.*, is instructive. 725 F.3d 1341, 1349 (Fed. Cir. 2013). There, the claims recited “a plurality of sharp cutting edges disposed in a generally common first plane.” The Federal Circuit reversed

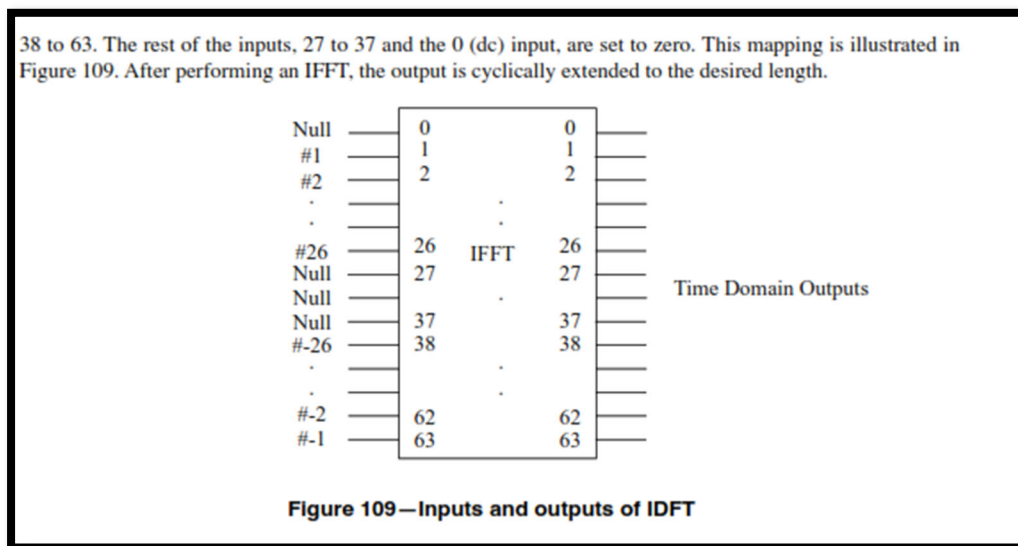
⁴ Defendants’ construction replaces “[a]n OFDM symbol consists of multiple sine-waves signals or ...” with “the smallest unit of data transmission on a medium consisting of.” It leaves the rest unchanged.

a construction that a “generally common plane” must be on the whole flat because that construction contradicted the claim language that only a “plurality of sharp cutting edges” be in the same general plane. *Id.* at 1348. Instead, the court held that the claim only required “two cutting and stirring edges lie in respective generally common planes.” *Id.* So too here, the claims merely require modulating a “plurality”—two or more subcarriers, not all.

The remaining intrinsic evidence also offers no help to Defendants. Because Defendants’ construction seeks to limit the plain scope of the claims, it must point to “clear and unmistakable limiting statements” in the specification or the prosecution history. *See Cont’l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797-98 (Fed. Cir. 2019). Defendants appear to be arguing that the patentee somehow limited the scope of “OFDM symbols” using the second sentence of the definition in ITU-T G.9960 Recommendation, which is incorporated by reference in the Background of the Invention section (*see, e.g.*, Ex. 1, (’262 patent). But this non-specific reference to its disclosures is not enough to find a disclaimer or lexicography here. *See, e.g., SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1207 (Fed. Cir. 2013) (finding non-specific references to a technical treatise incorporated by reference as a whole into the specification of the asserted patent could not be used to redefine the scope of a disputed term that was otherwise clear from the specification); *Trs. of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1368-69 (Fed. Cir. 2016) (rejecting patentee’s contention that references allegedly incorporated by reference into the asserted patent supported a broader construction since the specification only made a “fleeting reference[]” to the applications); *Sycamore IP Holdings LLC v. AT&T Corp.*, No. 2:16-CV-588-WCB, 2017 WL 1045949, at *4-6 (E.D. Tex. Mar. 16, 2017) (declining to narrowly construe a disputed term based on provisional application and instead prioritizing the language of the claims and specification of the issued patent).

Moreover, the ITU-T G.9960 Recommendation —the same document Defendants rely on—contradicts their construction in two key ways. First, it states that “[n]ot *all sub-carriers may always be used for data transmission.*” Ex. 8, (G.9960), 54:1432-1442. Some subcarriers may “have to be switched off in special circumstances.” *Id.* Thus, not “each” subcarrier is used for data transmission or modulation. Second, the G.9960’s definition of “OFDM sub-carrier” underscores the optional nature of modulation: “the center frequency of each OFDM sub-channel onto which bits *may be modulated* for transmission.” Ex. 8, (G.9960), 8:320-321.

The IEEE’s 802.11 Standards—which the Asserted Patents point to as examples of relevant systems, *see* Ex. 1, ’262 patent at 1:35-37—also confirm that only some of the available subcarriers are modulated with data bits. For example, the 802.11a Standard discloses that inputs for certain subcarriers “are set to zero,” meaning they are not modulated with data bits. *See* Ex. 10, (IEEE Std 802.11a-1999), Section 17.3.2.5, pp. 11-12 (“[t]he rest of the inputs, 27 to 37 and the 0 (dc) input, are set to zero.”). Figure 109 shows “null” inputs for these subcarriers:



Ex. 10, (IEEE Std 802.11a-1999), Section 17.3.2.5, p.12, Figure 109.⁵

Thus, the Court should reject Defendants’ proposed construction for OFDM symbol because it improperly narrows the scope of the term by requiring each subcarrier be modulated by data bits.

B. “wherein the second packet format is distinguished from the first packet format by detecting, from the received wireless packet, the second header field which repeats the first header field”

AX Wireless Proposed Construction	Defendants Proposed Construction
Plain and ordinary meaning.	Indefinite.

The dispute here is whether a POSA would objectively understand, with reasonable certainty, the scope of the term “the second packet format is distinguished from the first packet format by detecting, from the received wireless packet, the second header field which repeats the first header field.” She would.

“[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012). However, patents are presumed valid under 35 U.S.C. § 282, thus challenging a claim as invalid for indefiniteness must “be proved by clear and convincing evidence.” *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 95 (2011). When evaluating indefiniteness, a court asks whether a “patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty[,] ... while recognizing that absolute precision is unattainable.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). A patent can provide

⁵ Subsequent 802.11 Standards similarly disclose modulating only some of the available subcarriers to transmit data bits. *See, e.g.*, Ex. 11, (IEEE Std 802.11n-2009), 267 (despite there being 64 available subcarriers, the data is only “transmitted on subcarriers -26 to -1 and 1 to 26, with 0 being the center (dc) carrier,” or 53 subcarriers); Ex. 12, (IEEE Std 802.11ac-2013), 247 (explaining that “the 20 MHz is divided into 64 subcarriers” and that “[t]he signal is transmitted on subcarriers -28 to -1 and 1 to 28, with 0 being the center (DC) subcarrier.”).

reasonable certainty by providing guidance, examples, and points of comparison. *See Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017).

The explicit text of the disputed limitation itself, the surrounding claim language, and the specification all provide objective guidelines as to how the two claimed packet formats are distinguished: by detecting a second header field present in the second packet format, but absent from the first. Because the scope of this disputed limitation is readily ascertainable given the intrinsic evidence, the Defendants' indefiniteness construction should be rejected and the term should be afforded its plain and ordinary meaning. *See Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1285-86 (Fed. Cir. 2023) (finding that the description in the specification and the patent figures gave sufficient objective guidance of the term's scope).

The plain and ordinary meaning of disputed limitation provides sufficient guidance to a POSA as to the limitation's scope. The limitation recites "distinguish[ing]" the second packet format from the first "by detecting ... the second header field which repeats the first header field." A POSA, and indeed any layperson, can readily understand simple words like "distinguish" and "detect" (or their related words). Taken together, a POSA would understand that the scope of this limitation requires recognizing the packet format, from the received wireless packet, based on a determination of whether a second header field that repeats the first header field is present (i.e., second packet format) or absent (i.e., first packet format).

Indeed, the Defendants all but concede that the subject limitation is definite because they don't contend that asserted claim 6, which has a nearly identical limitation, is indefinite. A side-by-side comparison of the claim language is shown below:

Claim 1 (Defendants Contend is Indefinite)	Claim 6 (Defendants concede is definite)
wherein the wireless receiver distinguishes the second packet format from the first packet format by detecting, from the received wireless	wherein the second packet format is distinguished from the first packet format by detecting, from the received wireless packet,

packet, the second header field which repeats the first header field.	the second header field which repeats the first header field.
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The only difference between claim 1 and claim 6 is that claim 6 doesn't specify that the wireless receiver is the one doing the distinguishing of the second packet format from the first. But that added requirement of a wireless receiver cannot possibly make claim 1 indefinite.

The surrounding claim language of claim 1 and the dependent claims provide more guidance on how the second packet format is distinguished from the first based on the presence of a second repeated header field. For example, claim 1 recites two packet formats and also recites how they differ in terms of the required number of header fields:

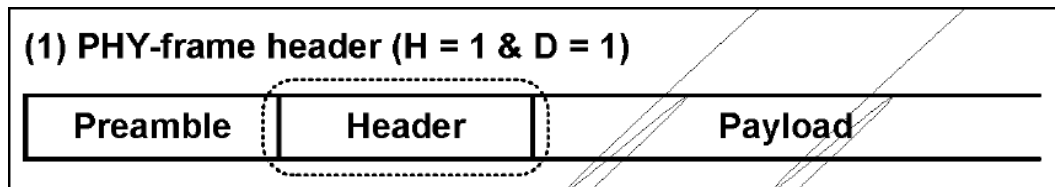
the *first packet format* comprising a first header field carried by a first orthogonal frequency division multiplexing (OFDM) symbol,

the *second packet format* comprising both the first header field carried by the first OFDM symbol and a second header field carried by a second OFDM symbol which follows the first OFDM symbol, and the second header field being a repetition of the first header field;

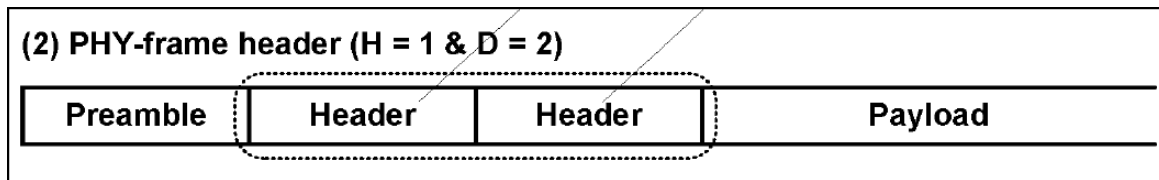
Ex. 4, ('146 patent), 12:56-63. The first packet format includes *one* header field carried by *one* OFDM symbol. The second packet format, however, contains *two* header fields—one that is the same as the first packet format's header field and another that is a repetition of the first header field—that are carried by *two OFDM symbols*. The format of the wireless packet may thus be determined based on the presence of the second header field carried by a second OFDM symbol, which is absent from the first packet format. Dependent claims 2 and 3 fit this understanding as they recite determining the wireless packet as either the second or first packet format based on the presence or absence of the second header field. *Id.*, cls. 2, 3.

The specification, through its detailed disclosures and embodiments, provides more guidance on the claimed packet formats and how the presence of repeated header fields may be detected. The specification teaches that “an exemplary aspect” of the invention is “directed to

techniques to accommodate different repetition schemes” of the header “in a single domain, and still allow devices to communicate with one another.” *Id.*, 2:32-35. Figure 1 shows possible header⁶ repetition schemes based on varying values of the header (H) and the number of OFDM symbols carrying the bits associated with the header (D). *See id.*, 5:56-6:19, Figure 1. Example (1) reflects a packet format with a single header field (H=1) carried by a single OFDM symbol (D = 1), consistent with the claimed first packet format:



Id., Fig. 1, 5:57-59. Example (2) depicts a first header field that is repeated, leading to two header fields (H=1) carried by two OFDM symbols (D=2), consistent with the second packet format:



Id., Fig. 1, 5:59-63. The difference between these packet formats is the addition of the repeated second header field carried by a second OFDM symbol.

The specification also teaches various methods to detect packet formats based on the presence or absence of duplicated header fields in the packet. For example, the specification teaches that one exemplary aspect of the invention is “directed toward receiver detection of D with variable repetition.” *Id.*, 2:51-52. In this embodiment, “the transmitter selects (or determines), the at least one D value,” which corresponds to the number of OFDM symbols carrying header fields.

⁶ The “header” recited in the specification of the ’146 patent is the same as the “header fields” recited in the ’146 patent claims.

Id., 2:51-54. The selection of D by the transmitter may be based on a variety of factors, including “information communicated between one or more receivers,” “instruction(s) from one or more other receivers, and/or a domain master.” *Id.*, 2:54-58. And “a receiving node ... should be able to decode packets sent by the transmitter without knowing D a priori (i.e., prior to decoding the packet header).” *Id.*, 2:61-64. In other words, using these techniques, a receiver could detect the packet format and decode the packets without knowing D, the number of OFDM symbols carrying the header fields, disclosed in the packet header.

The specification also teaches alternative embodiments in which the “transmitter ... carr[ies], insert[s], or otherwise communicate[s] the value of D in the header so that all nodes know how many OFDM symbols are carrying header information.” *Id.*, 2:65-3:1. In these embodiments, the receiver “process[es] the header by decoding one OFDM header symbol” to determine the value of D and from that the “receiver knows how many more OFDM symbols (D-1) are carrying header information for a given frame.” *Id.*, 3:1-5; *see also id.*, Figs. 5-6.

In sum, the specification is replete with teachings on detecting and distinguishing the packet format of a received packet based on the presence or absence of a repeated header field; a POSA would thus sufficiently understand the scope of the term as recited in the disputed claims. *See Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388, 1396 (Fed. Cir. 2016) (finding the patent specification “saves the term [in the claim] from indefiniteness” by disclosing additional information about the invention that clarifies meaning).

Indeed, Dell’s indemnifier, Intel, represented by the same counsel in this case, has effectively conceded that the “distinguished” limitation is sufficiently definite through parallel

proceedings Intel filed before the Patent Trial and Appeal Board.⁷ The Petitions do not allege that any special construction should be afforded to the distinguished limitation, but propose construing it consistent with its plain and ordinary meaning as Ax Wireless proposes here. *See* Ex. 13, (IPR2023-00145), 9; Ex. 14, (IPR2023-00146), 6. The Petitions then apply the prior art references against this claim limitation of the '146 patent with no indication that the scope of the claims were unclear. *See* Ex. 13, (IPR2023-00145), 9-30 (applying Yu against all claims), 31-63 (applying Hansen and WWiSE against all claims); Ex. 14, (IPR2023-00146), 19-47 (applying Huang against all claims), 47-77 (applying Sun against all claims). Defendants cannot have it both ways – they understand that the claims are definite to apply prior art in an IPR, while arguing the limitation is indefinite in the parallel district court cases. *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1299 (Fed. Cir. 2021) (A “patent may not, like a nose of wax, be twisted one way to avoid anticipation and another to find infringement.”) (citation omitted).

Defendants have presented no evidence, let alone clear and convincing evidence, that the '146 Patent fails to inform those skilled in the art about the scope of the invention with reasonable certainty. *See Nature Simulation Sys. Inc. v. Autodesk, Inc.*, 50 F.4th 1358, 1368 (Fed. Cir. 2022). In the Joint Claim Construction Chart, Defendants cited zero evidence, neither intrinsic nor extrinsic, for why the claims are allegedly indefinite and instead reserved the right to “provide additional evidence to rebut evidence proffered by Plaintiff.” Joint Claim Construction, Dkt. 118-1 at 7. But the burden is not on AX Wireless to prove through evidence that the disputed limitation is definite because the issued claims of the '146 patent are presumed valid. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1343 (Fed. Cir. 2016) (“Patents are presumed to be valid,

⁷ IPR2023-01135, IPR2023-01136, IPR2023-01137, IPR2023-01138, IPR2023-01139, IPR2023-01140, IPR2023-01143, IPR2023-01144, IPR2023-01145, IPR2023-01146.

and the challenger bears the burden of establishing invalidity.”) (citing *Nautilus*, 572 U.S. at 912 n.10). It is Defendants’ burden to prove through clear and convincing evidence that the limitation is indefinite, and they have failed to do so. *See id.*

The Court should find this term not indefinite and give it its plain and ordinary meaning.

IV. CONCLUSION

AX Wireless respectfully requests that the Court adopt its claim construction positions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a). Therefore, this document was served on all counsel who are deemed to have consented to electronic service. Local Rule CV-5(a)(3)(A). Pursuant to Fed. R. Civ. P. 5(d) and Local Rule CV-5(d) and (e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by email on this the 15th day of September 2023.

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