IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

NIPPON TELEGRAPH AND TELEPHONE CORPORATION and ESSENTIAL WIFI LLC, Plaintiffs, v. MEDIATEK INC. AND MEDIATEK USA INC. Defendants.	)	C. A. No. 1:20-cv-00632-ADA **JURY TRIAL DEMANDED**

NIPPON TELEGRAPH AND TELEPHONE CORPORATION and ESSENTIAL WIFI LLC, Plaintiffs, v. ACER INC. AND ACER AMERICA INC, Defendants.	)	C. A. No. 1:20-cv-00769-ADA **JURY TRIAL DEMANDED**

NIPPON TELEGRAPH AND TELEPHONE CORPORATION and ESSENTIAL WIFI LLC, Plaintiffs, v. TEXAS INSTRUMENTS INC., Defendant.	)	C.A. No. 1:20-cv-00583-ADA **JURY TRIAL DEMANDED**

PLAINTIFFS' OPENING CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

Pursuant to the Court's Scheduling Order dated September 9, 2020 (Dkt. 31), Plaintiffs Nippon Telegraph and Telephone Corp. and Essential WiFi, LLC (collectively "Plaintiffs") respectfully submit this opening brief in support of its proposed constructions of disputed claim terms of U.S. Patent Nos. 7,242,720 ("the '720 Patent") (Ex. A[1]); 7,280,551 ("the '551 Patent") (Ex. B); 7,400,616 ("the '616 Patent") (Ex. C); and 7,545,781 ("the '781 Patent") (Ex. D) (collectively, "the Patents-in-Suit), which have been asserted in the consolidated case involving Defendants Acer, Inc. and Acer America, Inc. ("Acer"); Texas Instruments, Inc. ("TI"); and MediaTek, Inc. and MediaTek USA, Inc. ("MediaTek") (collectively, "Defendants").

Plaintiffs have proposed constructions that assist the jury by providing useful meanings for technical claim terms, and that are consistent with the scope of those terms as understood by those skilled in the art with reference to the specifications of the Patents-in-Suit. The proposed constructions of Defendants improperly attempt to rewrite the claims with new limitations, or assign definitions that are not consistent with the specifications of the Patents–in-Suit. Accordingly, the Court should adopt NTT's proposed constructions because they "stay[] true to the claim language and most naturally align[] with the patent's description of the invention". *See Renishaw PLC v. Marposs Societa' per Azionzi*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

II. U.S. PATENT NO. 7,242,720 ("THE '720 PATENT")

A. Overview of the '720 Patent

The '720 Patent relates to novel methods and devices for addressing interference in a multi-antenna OFDM system. *E.g.* Ex. A ('720 Patent") at Abstract, 4:5-11. In particular, the '720 Patent provides an inverse matrix computer that computes inverse matrices for each OFDM

[1] All citations to exhibit numbers herein are citations to the Declaration of James T. Geier In Support Of Plaintiff's Opening Claim Construction Brief, submitted herewith.

subcarrier constituted by propagation coefficients for the respective propagation paths between the respective multiple transmitting and receive antennas, and an interference canceller that cancels interference based on the inverse matrix computed by this inverse matrix computer. *Id.* at 4:11-20. These methods provide multiple advantages over the prior art, including improved signal capacity (*id.* at 4:11-20), as well as simplified interference cancellation that does not require involvement of an equalizer, and may be feed-forward rather than involve feedback control *(id.* at 5:7-12). These advantages may be illustrated by the specific examples outlined in the '720 Patent's specification.

In conventional wireless communication systems, transmissions of signals over a wide frequency channel that exceeds its coherence bandwidth will experience frequency-selective fading. Ex. E, Declaration of James T. Geier ("Geier Decl.") at ¶¶28-29; Ex. A ('720 Patent) at 3:23-27. These issues are compounded in multi-path transmission systems, such as MIMO, wherein signals transmitted on multiple independent paths, each already associated with different time delays, will also experience frequency-selective fading. *Id.* 3:21-27. The severity of multipath, frequency-selective fading imposes substantial burdens on signal processing techniques such as channel equalization. Equalizers, as is known in the art, are designed to address the effects of channel distortions on a signal, which may cause prior transmitted portions of a signal ("symbols") to run into later transmitted portions—a phenomenon called "Inter-Symbol Interference." Ex. G (John G. Proakis, DIGITAL COMMUNICATIONS, (4th ed. 2001)) at 583. The '720 Patent teaches that in a multipath, frequency-selective fading environment, "the number and strength of the incoming delayed waves, and the so called delay profiles are diverse, and for all of these environments, realization of an effective equalizer is extremely difficult." '720 Patent at 3:28-32. As a result, equalization in such systems demands "an extremely large

signal processing capability" (*id*. at 3:32-37), but at the same time "high accuracy equalization for the frequency characteristics of the amplitude and phase is difficult" (*id*. at 3:52-55).

The strain on equalizers impacts other necessary signal processing techniques, particularly interference cancellation. *Id*. at 3:48-51. Such problems may be illustrated with reference to a conventional MIMO channel transmitter-receiver system shown in Fig. 37, showing a system including an N-antenna transmitter and N-antenna receiver. In a conventional system such as Fig. 37, MIMO channel capacity depends heavily on both equalization and interference cancellation. *See e.g.,* id. at 1:31-37. In a typical configuration, the arrangement of signal processing components in a receiver takes account of the fact that there are N received signals, such as by including N-1 interference cancellers (1114-1 to 1114-N) and N equalizers (1115-1 to 1115-N). *Id.* at 2:10-12. Since each antenna is able to receive all signals from the N transmitting antennas, signal processing at each antenna proceeds sequentially to separate out the desired signal for a given antenna pair, *e.g.*: "The received signal of the receiving antenna 1111-1, is at first equalized by the equalizer 1115-1," prior to being fed through remaining components such as a deinterleaver and decoder. *Id.* at 2:12-17. Then, "[i]n the interference canceller 1114-1, the output from the decoder 1118-1 is subtracted from the received signal of the receiving antenna 111-1 for which all the N transmission signals have been superposed." *Id.* at 2:31-34. The remaining signal is then input into the next equalizer 1115-2, and the process repeats until the desired signal is produced. *See id.* at 2:39-40. "Consequently, for the operation of the equalizer, it is necessary to equalize the NxN paths, and perform (N-1)xN interference cancellations based on the result." *Id.* at 3:15-17.

From the foregoing example, it can be seen that interference cancellation can be highly dependent on equalizer operation. Ex. E (Geier Decl.) at ¶¶27-29. Thus, the '720 Patent teaches

that "in the case where equalizing accuracy cannot be achieved, the interference cancellation is not sufficient, resulting in residual interference noise." '720 Patent at 3:48-51. In the multipath, frequency-selective fading environment described above, the problem is particularly acute "since high accuracy equalization for the frequency characteristics of the amplitude and phase is difficult," resulting in "a problem in that the signal-to-interference noise ratio easily deteriorates." *Id*. at 3:52-55.

The '720 Patent addresses the foregoing problems by providing apparatuses and methods for implementing interference cancellation in a way that is less dependent on equalizers. *E.g.*, '720 Patent at 4:63-65. One aspect of the invention is that interference cancellation is performed in the context of an OFDM system, on each OFDM subcarrier. *Id.* at 4:65-5:4. OFDM, as is known in the art, partitions a wideband channel into a plurality of narrowband subcarriers. Ex. E (Geier Decl.) at ¶31. Within each subcarrier, frequency-selective fading is reduced. Ex. A at 5:5-12. A further aspect of the invention is that interference cancellation is achieved based on applying an inverse matrix, obtained from inverting matrices constituted by propagation coefficients. *E.g.* id. at 4:5-21, cl. 18. These propagation coefficients may be determined using pilot signals, which, when received through a wireless channel, can be compared to reference values as part of gauging characteristics for signal transmission. *See id.* at 9:65-10:2. Thus, interference cancellation may be achieved without having to involve equalizers, and is not as vulnerable to equalizer limitations. Ex. E (Geier Decl.) at ¶31.

The '720 Patent teaches that independence from equalizer function carries multiple advantages, including, for example, the following: First, interference cancellation by such methods need not be impacted by equalizer performance. *Id.* at 4:63-5:4. Thus, even when the effects of multipath fading are severe, interference cancellation can maintain accuracy. *See id.*

Second, such a method of interference cancellation can be feed-forward, rather than rely on feedback control as in the case of methods that depend on equalization. *See id.* at 11:26-30. Thus, for example, receiver-end signal processing can be substantially simplified. *Id.* at 5:35-37. In an Eighth Embodiment, for instance, the pilot signal generator 34, inverse matrix computer 42, and pre-interference canceller 32 are provided in the transmitter. *E.g.*, '720 Patent at 21:64-22:3, Fig. 10. Thus, "since not only the function of the interference canceller but also the function of the inverse matrix computer can be disposed on the OFDM signal transmitting device 30 side, it is not necessary to mount the inverse matrix computation function and the function of the interference cancellation on the OFDM signal receiving device 50 side. Consequently, the signal processing for the OFDM signal receiving device 50 side is simplified, and the circuit size of the OFDM signal receiving device can be further reduced." *Id.* at 24:33-. Alternatively, the '720 Patent teaches that components for implementing its interference cancelling method could be provided in the receiver as well. For example, in a Seventh Embodiment, the inverse matrix computer 57 is provided in the receiving device 50. *Id.* at Fig. 9. The inverse matrix computer 57 computes an inverse matrix based on received pilot signals, and then transmits this information back to the transmitting device 30 for use by the pre-interference canceller 32. *Id*. at 17:51-63, Fig. 9. "Since it is not necessary to provide an interference canceller in the OFDM signal receiving device 50, the construction of the OFDM signal receiving device 50 is simplified and power consumption is also suppressed." *Id.* at 17:48-51.

B. Disputed Claim Term #1: "interference canceller" ('720 Pat. cl. 18, 19, 21, 22 31, 32)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
a device, embodied in software and/or hardware, designed to reduce effects of unwanted signals or noise on a desired signal	plain meaning

The parties dispute whether this term should be construed and, if so, what construction should be given. Plaintiffs' construction is consistent with the ordinary meaning of the term as well as the specification, and conveys in simple language that one of the key advantages of the '720 Patent is that interference cancellation may be achieved without involvement of an equalizer. Defendants, on the other hand, refuse to provide an explicit construction, but it is clear that Defendants plan to use their "plain meaning" proposal to erase the clear distinction between an equalizer and interference canceller. *See* Ex. H ('720 IPR Petition) at 9. Given how clearly the '720 Patent distinguishes between an "interference canceller" and equalizer, there is simply no reason to allow Defendants to maintain ambiguity when a simple definition can resolve claim scope in a way that would be helpful to the trier of fact. Plaintiffs therefore ask the Court to adopt their proposed construction.

As discussed in the above Overview, one of the key advantages of the '720 Patent is that its methods provide a way of cancelling interference that does not require involvement of an equalizer. *E.g., id.* at 4:63-65 ("In the present invention, an OFDM method is used to realize a signal communication system for MIMO channels **without using an equalizer**.") (emphasis added). Indeed, equalizer complexity is one of the very problems that motivated development of the '720 Patent's inventions. *E.g.,* id. at 3:48-51 ("[W]here equalizing accuracy cannot be achieved, the interference cancellation is not sufficient, resulting in residual interference noise."). The specification ***repeatedly*** uses the terms "interference canceller" and "equalizer" to refer to different things. *See* Section III(A) supra. Thus, it cannot be more plain that the "interference canceller" recited in the claims ***is not*** an equalizer.

However, Defendants have made clear that their putative "plain meaning" proposal is designed to do exactly that—to erase the distinction between interference cancellers and

equalizers, and by extension, to erase the point of the '720 Patent. In particular, Defendant MediaTek filed a co-pending petition for *inter partes* review (IPR) of the '720 Patent, wherein it states: "Interference cancellation using an inverse channel matrix is called 'Zero-Forcing' because it forces interference to zero by 'completely eliminat[ing] ISI [Inter-Symbol ***Interference***]'". Ex. H at 9 (emphasis in original). All three Defendants in this consolidated proceeding have adopted the same interpretation of the primary reference cited in MediaTek's IPR Petition. *See* Ex. I (Defs. chart on Raleigh). However, it is well known in the art that the Zero-Forcing algorithm is an equalizing algorithm, and ISI, as explained in the Overview, is not truly "interference" in the ordinary sense of that word but rather an effect of channel distortion that causes earlier transmitted symbols from a signal to disrupt later transmitted portions of itself. *See also* Ex. E (Geier Decl.) at ¶29; Ex. G (Proakis) at 583.

Indeed, the specification makes clear that the '720 Patent does not use the term "interference" to include ISI, but rather in the ordinary sense of the word, which refers to disturbances to a desired signal from sources external to itself—*i.e.*, unwanted signals or noise. *E.g.*, Ex. A ('720 patent) at 3:48-51 ("[I]n the case where equalizing accuracy cannot be achieved, the interference cancellation is not sufficient, resulting in residual ***interference noise***.") (emphasis added). Further, dictionary definitions emphasize that interference comes from something other than the desired signal itself: For example, the fourth edition of the Microsoft Computer Dictionary (1999) defines "interference" as "[n]oise or other external signals that affect the performance of a communications channel." Ex.[MS Dict]at 241 (definition of "Interference"). Thus, a POSA would understand that the purpose of an interference canceller is to reduce the effects of unwanted noise on the signal. Ex. E (Geier Decl.) at ¶40; see also Ex. K (Modern Dictionary of Electronics 7th edition (1999)) at 386. "Equalization" and "equalizers,"

by contrast, are not understood to address "interference" in the ordinary sense, but rather channel distortion, Ex. E (Geier Decl.) at ¶40; see also Ex. K (Modern Dictionary of Electronics) at 262; Ex. G (Proakis) at 583.

C. Disputed Claim Term #2: "Among" (cls. 18, 22, 31)

Claim Term	Defendants' Proposed Construction
"Among," as it appears in claims 18, 22, 31	"operating in connection with"
	Plaintiffs' Proposed Construction
	Plain meaning

The word "among" appears in similar phrases in each of claims 18, 22, and 31. For example, in claim 18, the term appears in "the OFDM signal transmitting device comprises at least an interference canceller **among** an inverse matrix computer, the interference canceller, and a pilot signal generator." (emphasis added). Claims 22 and 31 have similar structure, but are instead directed to OFDM signal *receiving* devices. The Defendants' proposal for all three claims is the same: to replace the word "among" with "operating in connection with." Nothing in the specification or claims justifies this arbitrary revision.

"Among" is an ordinary English word that is not difficult to understand, and it does not mean "operating in connection with." Moreover, it is at best unclear what "operating in connection with" means. Defendants' proposal injects ambiguity into otherwise clear language, and should be rejected.

Furthermore, Defendants' proposed construction should be rejected because each of the three claims in which these terms appear are apparatus claims. Ex. A, cl. 18, 22, and 23. Yet, Defendants seek to replace the word "among" with operational language of "operating in connection with." Federal Circuit precedent is clear that Defendants' proposed constructions are legally improper: "reciting both an apparatus and a method of using that apparatus renders a claim indefinite." *IPXL*, 430 F.3d at 1384. This is because "it is unclear whether infringement

. . . occurs when one creates a system that allows the user to [perform the step], or whether infringement occurs when the user actually uses the [system to perform the step]." *Id*. Thus, Defendants' construction should also be rejected under the canon of claim construction that a claim "should be construed to preserve its validity." *Ruckus Wireless, Inc. v. Innovative Wireless Sols.*, LLC, 824 F.3d 999, 1004 (Fed. Cir. 2016).

III. U.S. PATENT NO. 7,280,551 ("THE '551 PATENT")

A. Overview of the '551 Patent

The '551 Patent relates to methods and apparatuses that can improve channel throughput in a multi-channel system. Specifically, the '551 Patent teaches methods for setting one of the channels provided in a multi-channel system as a "mandatory channel," such that the busy or idle state of that channel governs whether a transmission may take place, regardless of the state of other provided channels.

The '551 Patent teaches that multi-channel systems are unlike the single-channel methods in standards such as 802.11-1999. *See* Ex. B ('551 Patent) at 1:43-44 ("**On the other hand**, a wireless packet communication method is known in which, when **multiple wireless channels** are found idle by carrier sense…") (emphases added). In a conventional single-channel system ("Single-Input-Single-Output"), stations wishing to transmit on an assigned channel must first sense its idle state before transmitting. '551 Patent at 1:30-32. This is in contrast to a multi-channel system (not yet standardized at the time of the '551 Patent; Ex. E (Geier Decl.) at ¶43), wherein "multiple wireless channels are found idle by carrier sense, a plurality of wireless packets are transmitted simultaneously by using the wireless channels." Ex. B ('551 Patent) at 1:43-47; *see also* Ex. N (Bugeja) at ¶46. The '551 Patent teaches that other simultaneous transmission techniques, such as Multiple-Input-Multiple-Output ("MIMO") may also be used for data transmission. Ex. B ('551 Patent) at 1:56-61, Figs. 14. MIMO techniques employ

multiple antennas to partition a single channel into multiple spatial streams that may be used simultaneously. *Id.* at 1:61-63; Ex. E. (Geier Decl.) at 25-28, 70. Thus, for example, depending on the number of packets to be transmitted to a given recipient, a multichannel transmitting station may use multiple wireless channels, a single channel using MIMO techniques, or a combination of these types of methods. *E.g.*, Ex. B at Figs. 14, cl. 1.

The '551 Patent teaches that transmission using multiple channels can experience problems such as power leakage. For example, "in case of transferring a wireless packet, a transmit-side STA transmits the wireless packet and thereafter a receive-side STA transmits an acknowledgment packet (Ack) for the received wireless packet to the transmit-side STA," while "another wireless channel used for simultaneous transmission" is in use. Ex. B ('551 Patent) at 2:30-37 (emphases added). As a result, "throughput cannot be improved even if simultaneous transmission is performed using multiple wireless channels at the same time." *Id.* at 2:48-51 (emphasis added). Such issues may arise "where center frequencies of multiple wireless channels used at the same time are close to each other" (*id.* at 2:26-30), such as in the case of adjacent channels (*id*. at 3:24-32). Geier Decl. at 44, 51-53; see also Ex. D ('781 Patent) at 3:6-10 ("It is also anticipated that leakage into wireless channels may occur not only into adjacent channels but also into many other wireless channels such as the next adjacent wireless channels, thereby causing the virtual carrier sense not to be properly performed over a wider range.").

The '551 Patent addresses such issues affecting throughput by setting a "mandatory channel," which is one of several available channels for transmission to that user. *E.g.,* '551 Patent at 5:52-57. "When the mandatory channel is busy, ***each STA*** does not perform transmission ***even if there is other idle wireless channel***." *Id*. at 55-57 (emphasis added). In other words, setting of a "mandatory channel" can help avoid a situation where ACK packets are

not received on one channel while another channel is in use, thereby improving throughput. *E.g., id.* at 11:67-12:6.

B. Disputed Claim Term #3: "transmitting a plurality of wireless packets simultaneously" ('551 Pat. cl. 1, 2, 5 and 6 preamble)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
The claim term speaks for itself and should be construed as plain meaning; usage in preamble is not limiting	at least this quoted portion of the preamble is limiting and should be given its plain meaning

The parties generally agree that the term "transmitting a plurality of wireless packets simultaneously" should be given a plain meaning construction. The parties dispute whether this phrase, which appears ***only in the preamble*** of independent claims 1, 2, 5, and 6, is an additional limitation on the claims. Plaintiffs contend that it is not limiting.

The Federal Circuit "has recognized that as a general rule preamble language is not treated as limiting." *Arctic Cat Inc. v. GEP Power Prod., Inc.*, 919 F.3d 1320, 1327 (Fed. Cir. 2019). Notably, in this instance Defendants have omitted the word "***for***" that appears before the phrase "transmitting a plurality of packets simultaneously." The use of the word "for" plainly indicates an intended use or purpose, rather than a separate limitation. *See Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1292 (Fed. Cir. 2015)("preamble language that merely states the purpose or intended use of an invention is generally not treated as limiting")(internal brackets omitted).

Moreover, Defendants' blanket proposal makes little sense when considered in context. For instance, claims 5 and 6 are apparatus claims, not method claims. Thus, Defendant's proposal to treat the phrase "transmitting a plurality of packets simultaneously" would effectively add a method step to these apparatus claims, creating a potential validity issue where none exists. *See, e.g.*, *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed.

Cir. 2005)("reciting both an apparatus and a method of using that apparatus renders a claim indefinite"). With respect to the method claims, the claims already include steps describing transmission, and thus there is no reason to replace these steps, or add another one, using language appearing only in the preamble. Method claim 2, for example, does not even rely on the preamble for antecedent basis. *See Shoes by Firebug LLC v. Stride Rite Children's Grp., LLC*, 962 F.3d 1362, 1367-68 (Fed. Cir. 2020) (preamble not limiting where claims define a structurally complete invention).

C. Disputed Claim Term #4: "wireless channels" / "multiple wireless channels" ('551 Pat. cl. 1, 2, 4, 5, 6 and 8)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"frequency ranges provided to transmit packets" / "multiple frequency ranges provided to transmit packets"	distinct frequency regions used to transmit different wireless packets

The parties generally agree that the terms relate to transmitting packets, and that a channel relates to a "frequency range" (Plaintiffs) or a "frequency region" (Defendants). While Plaintiffs believe there is no substantive difference between the use of "regions" as opposed to "ranges," in the context of frequency it would be more accurate to use "ranges" because "it suggests a minimum and maximum value, which is more consistent with how a frequency band is allocated in order to provide a wireless channel." Ex. E (Geier Decl.) at ¶¶47, 49. However, Defendants have proposed two additional limitations: (1) that multiple wireless channels must be characterized as "distinct," and (2) that these channels must, by definition, be used to transmit "different" packets. As explained below, neither limitation is justified, and thus Defendants' proposal should be rejected.

First, the Court should reject the Defendants' proposal to characterize wireless channels as "distinct" because this contradicts the specification, which explicitly embraces overlapping

channels. As Plaintiffs' expert, Mr. Geier, points out, the dictionary definition of 'distinct' "suggests that channel boundaries are separate and non-overlapping." Ex. E (Geier Decl.) at ¶¶47-54 (quoting the Merriam Webster Dictionary (https://www.merriam-webster.com/dictionary/distinct) which defines 'distinct' as "distinguishable to the eye or mind as being discrete (see DISCRETE sense 1) or not the same : SEPARATE"). Ex. R. However, this is contradicted by the specification, which explicitly teaches that the invention addresses problems that may affect overlapping channels. In fact, the '551 Patent specifically teaches that "[i]t is an object of the present invention to avoid leakage power from affecting an ***adjacent channel*** so as to improve throughput by simultaneous transmission." Ex. B at 3:33-35 (emphasis added). As is known in the art, "adjacent channels" in the context of 802.11 generally refers to ***overlapping channels***. Ex. E (Geier Decl.) at ¶52; Ex. M (Mishra) ("[A] signal on any 802.11b channel overlaps with several adjacent channels, with the extent of overlap decreasing with increasing separation between the center frequencies. Attributing to this overlap, a transmission on one channel becomes interference to stations on an overlapping channel, also known as adjacent channel interference."). Thus, Defendants' proposal defeats an object of the '551 Patent's invention, and should be rejected.

Second, there is nothing in the specification to support Defendants' proposed requirement that wireless channels must, by definition, carry "different" packets. A wireless channel is merely the pathway upon which the information travels—the channel is not ***defined*** by what sort of data it is used to convey. As Mr. Geier further explains, "[t]he channel is like a road; although considerations about whether the road will primarily be used by cars or trucks may affect the construction of the road, whether the road carries only red cars or different colored cars is not

relevant," Ex. E at ¶57. Indeed, it was well-known that multiple channels could be used to carry *the same* data, such as to improve signal-to-noise. *Id.*, citing Ex. G (Proakis) at 777.

D. Disputed Claim Term #5: "mandatory channel" ('551 Pat. cl. 1, 2, 5 and 6)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
one of several frequency ranges provided between two STAs, whose busy/idle state determines whether there is transmission regardless of idle state of the other available channels	plain meaning

The parties dispute whether this term should be construed and, if so, what construction should be given. Plaintiffs contend that construction is needed and propose a construction that gives meaning to the term properly informed by the context of the claims and the specification of the '551 Patent. Defendants have refused to provide any construction for this term, but as Defendant MediaTek's co-pending IPR Petition indicates (and as confirmed by all three Defendants' invalidity contentions in this case), Defendants attempt to hide behind "plain meaning" as a means of reading the claims in a way that contradicts the specification.[2] Plaintiffs therefore respectfully request that the Court adopt their proposed construction so as to accurately convey claim scope to the trier of fact.

MediaTek's co-pending IPR Petition, as well as the Defendants' invalidity contentions citing the same references, make clear that they are treating the claimed "mandatory channel" as nothing more than "a channel," with nothing to distinguish it. Ex. P ('551 IPR Pet) at 33-34, Ex. Q (Inv. contentions for Shpak). Indeed, even if there is ***only one*** channel provided between a

[2] Notably, in MediaTek's co-pending IPR Petition it identifies the "mandatory channel" as a central term for assessing the novelty of the '551 Patent. Ex. P ('551 IPR Pet.) at 1 (the '551 Patent's "purported 'novelty' lies in the ***use of a 'mandatory channel'*** to transmit packets when multiple channels and/or MIMO is used.") (emphasis added). Defendants cannot credibly maintain that the court should not construe "mandatory channel" while identifying it as the central term for novelty analysis in the co-pending Inter Partes Review of the '551 Patent.

pair of devices, Defendants would call this a "mandatory channel" within the meaning of the '551 Patent. *See* Ex. P. at 2, 18, 27, 33-35, 46-47 (citing Shpak reference); Ex. Q at 551-A13-10 to 17. However, as discussed in the Overview (*supra*), this is plainly ***not*** what the '551 Patent teaches—the "mandatory channel" is used to improve throughput in ***multichannel*** systems, wherein other provided channels would not be "mandatory."

As an initial matter, Plaintiffs note that "mandatory channel" is not an established term of art, and thus recourse to the specification is appropriate. Ex. E (Geier Decl.) at ¶60; *see also Facebook, Inc. v. BlackBerry Ltd.*, No. 4:18-CV-05434-JSW, 2019 WL 6828359, at *9 (N.D. Cal. Dec. 13, 2019) ("a 'coined term' that lacks an ordinary and customary meaning in the field . . . cannot be construed broader than the disclosure in the specification"). In this case, the specification uniformly teaches that a "mandatory channel" is one of multiple channels provided between a pair of stations. Indeed, in ***every*** embodiment, a "mandatory channel" is identified as ***one of multiple*** available channels provided between transmitting and receiving stations (STAs). *See, e.g.*, Ex. B ('551 Patent) at 5:52-57 ("In this embodiment, wireless channels #1, #2, and #3 are provided, and the wireless channel #1 is set as a mandatory channel for every STA."); 7:8-12 ("In this example, for wireless packets addressed to the STA A, simultaneous transmission is performed using two wireless channels as the wireless channels #1 and #2 because the wireless channel #1 set as the mandatory channel is idle."). Moreover, the specification states that one way of conceptualizing the "mandatory channel" is as "a wireless channel having the highest priority ***among wireless channels*** that have a plurality of priorities." *Id*. at 3:57-60 (emphasis added). Further, as discussed above, the '551 Patent teaches that the simultaneous use of multiple channels, including the mandatory channel, improves ***throughput***, which is understood to refer to data receipt by a given user. Ex. E (Geier Decl.) at ¶¶45, 46. Nothing in the

specification suggests that a "mandatory channel" can be the only channel assigned to a given user (or receiving STA).

The specification further teaches that the "mandatory channel" is distinguishable from other channels accessible to a given user. For instance, as discussed above, the mandatory channel "can be regarded as a wireless channel having the highest priority." Ex. B ('551 Patent) at 3:57-60. In concrete terms, the specification explains this means that "[w]hen the mandatory channel is busy, each STA does not perform transmission even if there is other idle wireless channel." *Id.* at 3:56-57. Thus, the "mandatory channel" is identifiable as such because ***its*** state governs whether a transmission may take place, not the idle state of the other channels provided. Ex. E (Geier Decl.) at ¶¶61-64.

Defendants may attempt to argue that the claim language does not require the "mandatory channel" to be one of multiple provided channels, but that is not correct. To the contrary, the claim language itself indicates the presence of other channels. For example, the very use of the qualifier "mandatory" indicates the existence of a non-mandatory state, which Defendants' interpretation fails to acknowledge. *See* Ex. E (Geier Decl.) at ¶¶61-64. The requirement that the "mandatory channel" must "always" be used likewise indicates that other channels are provided—common sense dictates that if no other channels *could* be used (such as in a SISO system), there would be no need to specify that the "mandatory channel" must "always" be used. Further, the language limiting transmission to times "***only*** when the mandatory channel is idle" also relies on the availability of other channels—were it otherwise, this language, too, would be rendered a nullity because conventional single-channel CSMA systems have always waited for the channel to be idle before transmitting. *Id.* at ¶85; *also* '551 Patent at 1:30-37. It is not trivial, however, to limit transmission to times when only one of multiple channels is idle, even if

other idle channels are available. This is precisely what the '551 Patent teaches—"[w]hen the mandatory channel is busy, each STA does not perform transmission even if there is another idle wireless channel." *E.g.*, '551 Patent at 3:56-57.

IV. U.S. PATENT NO. 7,400,616 ("THE '616 PATENT")

A. Overview of the '616 Patent

The '616 Patent relates to a system for improving the efficiency of certain packets called acknowledgement, or ACK, packets. A receiver sends these packets after receiving a packet containing information in order to inform the sender that the packet was received. Ex. C ('616 Patent), 2:20-25. In this way, ACK packets are similar to return receipt cards from the Postal Service. Thus, if a transmitter does not receive an ACK, it will attempt to retransmit the packet under the assumption that it was not received. *Id.* at 2:10-14. This can create an issue in the context of simultaneous transmission, such as using MIMO. *Id.* at 2:32-39.

The '616 Patent teaches that MIMO techniques can improve performance because it can be used to transmit a plurality of data packets simultaneously on one wireless channel. '616 Patent at 1:42-46. In a form of MIMO called Spatial Division Multiplexing ("SDM"), for example, "different data packets are transmitted from a plurality of antennas on the same wireless channel at the same time." *Id*. at 1:50-53; *see also* Ex. O (Ho-1) at ¶10 ("With MIMO, the bit stream can be broken into two parts and the parts can then be transmitted simultaneously…The time savings largely comes from being able to divide the data payload 28 of the data frame 24 into two smaller fields 52 and 54."). However, as standardized MIMO operation did not exist at the time of the '616 Patent, ACK operation in the context of MIMO is not well-defined, and in particular "retransmission of data packets simultaneously transmitted using MIMO is not specifically defined." *Id.* at 2:14-16.

Thus, a problem may arise in the context of MIMO where, as the number of successful packet transmissions increases, so does the number of ACK responses. *Id*. at 2:36-41. This increase in the number of ACKs can, paradoxically, negatively impact performance because MIMO transmission is highly dependent on channel conditions. *See id.* at 2:1-6. Thus, "an effect of the change in the wireless channel on the channel condition becomes large," such that "a packet error rate or a bit error rate becomes larger with the increase of the MIMO number." *Id.* at 2:4-8.

The '616 Patent addresses the foregoing issues by specifying that successful receipt of a plurality of packets using MIMO can be followed by an ACK response transmitted without using MIMO. *E.g., id.* at cl. 1. Further, for example, a receiver can use sequence numbers associated with a plurality of packets in forming a single acknowledgement using multiple sequence numbers. *Id.* at 2-20-25. The receiver collects these data packets, and subsequently an ACK will be transmitted which has information corresponding to the received packets. *Id*. at 2:36-42. In one embodiment, the '616 Patent discloses including sequence numbers within the acknowledgement. *Id*. at 5:38-42. In another embodiment, a bitmap is used where each bit represents notification of the successful receipt or failure of a particular packet. 5:42-51.

B. Disputed Claim Term #6: "data packets" ('616 Pat. cl. 1 and 5)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
a unit of data that is transmitted over a wireless medium	plain meaning

The parties' dispute here centers on whether the term should be construed and, if so, what meaning the term should be given. Plaintiffs propose a construction that reflects the plain meaning of the term and will also be helpful to the jury. Defendants, on the other hand, refuse to offer an explicit construction, but once again their statements in other contexts—Defendant

MediaTek's co-pending IPR petition, as ratified by the other Defendants in their invalidity contentions—show that they intend to read this term in a way that contradicts the specification. Plaintiffs therefore respectfully request the Court adopt their construction so as to accurately convey claim scope to the trier of fact.

Contrary to its stated position in this litigation, Defendant MediaTek, in particular, has provided a construction in its co-pending IPR: Specifically, Mediatek argued that its primary reference, Ho-1, "use[s] the term 'frame' in the same way the '616 patent uses the term 'packet.'" Ex. S (IPR Pet re 616) at 5. The Defendants in this proceeding have ratified this view. Ex. T (Ho 1 Inv. Cont.). Ho-1 explicitly defines "frame" as a MAC protocol data unit, or "MPDU." Ex. O at ¶38. This is clearly ***not*** how the '616 Patent uses the term "packet." Indeed, even Defendants' own extrinsic evidence contradicts this reading.

For example, as discussed in the Overview, the '616 Patent describes SDM-MIMO as providing a means for transmitting a plurality of packets simultaneously. Ex. C ('616 Patent) at 1:42-53. As is known in the art, SDM-MIMO may be used to break apart a single frame (MPDU) into smaller constituent pieces. E.g., Ex. O (Ho-1) at ¶38; Ex. E (Geier Decl.) at ¶75. Further, at the priority date of the '616 Patent, there was no standardized nomenclature or label for these MIMO units, in contrast to standardized transmission units such as MPDU or PPDU in the case of 802.11-1999. Ex. E (Geier Decl.) at ¶75. Thus, the '616 specification makes plain that a "data packet" is not necessarily an MPDU. *Id.*

Rather, the '616 Patent uses the term "data packet" consistent with its ordinary meaning, which is that it is a unit of information that is transmitted—in this case on wireless medium. Geier Decl. at ¶77. For example, the *Microsoft Computer Dictionary* 327 (4th ed. 1999) states that "packet" is a "unit of information transmitted as a whole from one device to another on a

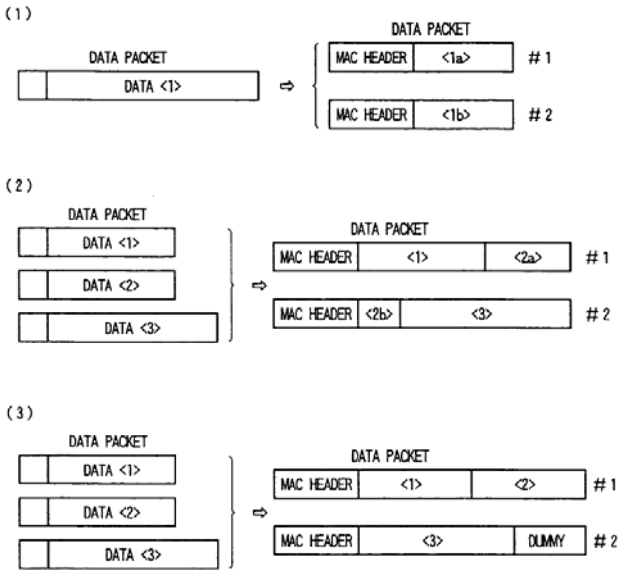
network." Ex. J. Indeed, the term "packet" is generally used to distinguish transmission in "packetized" form as opposed to a continuous byte stream. Ex. E (Geier Decl.) at ¶¶77-78; Ex. K (Modern Dict.) (defining "packets" as "Data that is transmitted through networks and broken up into small packets (localized in time) rather than being sent as a continuous byte stream."). The '616 specification confirms that it is using the term "packet" in this ordinary sense, as it explicitly describes the 802.11-1999 standard as one method for transmitting "packets" (Ex. C at 1:30-41), as well as describing non-standardized units transmitted using SDM-MIMO as "packets" (*id.* at 1:42-57).

The specification and claims further confirm that "data packets," in general, do not necessarily follow any standardized format. For example, a POSA would have known that, at the time of the '616 Patent, no standardized forms of MIMO existed, and hence, no standardized form of MIMO packets, existed. Ex. E (Geier Decl.) at ¶75. Further, the claims include explicit language requiring the presence of "predetermined sequence numbers" in "data packets." Ex. C. at cl. 1. The inclusion of this language clearly indicates that, but for this limitation, "predetermined sequence numbers" would not necessarily be present in the claimed "data packets." Such language would be rendered trivial if "packet" necessarily referred to a standardized MPDU, which by definition includes sequence numbers. Ex. E (Geier Decl.) at ¶76, citing Ex. U (802.11-1999 standard) at § 7.1.3.4.

Defendants' own proffered extrinsic evidence supports Plaintiffs' construction. Specifically, Defendants cite to the '551 Patent asserted here as evidence of what "data packet" means. Ex. V (Def's disclosure of extrinsic evid.). However, the '551 Patent clearly does not limit "data packet" to an MPDU. For example, the '551 Patent teaches that "data packets" being transmitted simultaneously may be reconstructed to have the same time length. Ex. B (551

Patent) at 2:61-3:2; 6:2-32; Fig. 3 (below). Reconstruction of data packets may involve breaking a larger data packet apart, appending pieces together, or a combination of both. Thus, for example, "[i]n the case where there are three data packets and two idle channels, a data packet 2 is divided into two portions and the two portions are connected to data packets 1 and 3, respectively, for example, as shown in FIG. 3(2). In this manner, two data packets having the same packet time length are generated." *Id.* at 6:16-21. Significantly, as Fig. 3 and the '551 specification indicate, the pre-reconstructed units 1, 2 and 3 are "data packets," as are the reconstructed units #1 and #2, even though only the reconstructed units have a MAC header. Clearly, the '551 Patent does not support Defendants' apparent assertion that "data packet" is limited to an MPDU.

FIG. 3



EX. C, Fig. 3

C. Disputed Claim Term #7: "transmitting a plurality of data packets simultaneously" ('616 Pat. cl. 1)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"data packet" construed as above; remainder of the claim term speaks for itself and should be construed as plain meaning; usage in preamble is not limiting.	at least this quoted portion of the preamble is limiting and should be given its plain meaning

This term generally presents issues similar to the "transmitting a plurality of wireless packets simultaneously" term (term #3) discussed above. As above, Defendants have omitted the word "***for***" that appears in the preamble before the phrase "transmitting a plurality of data packets simultaneously." The use of the word "for" indicates an intended use or purpose, rather than a separate limitation. *Arctic Cat*, 919 F.3d at 1327 (stating, "as a general rule preamble language is not treated as limiting").

Second, the steps in claim 1 do not include a "transmitting" step other than that for the receiver to transmit an ACK packet. Ex. C at cl. 1. By contrast, other claims, such as independent claim 3, does include a distinct step for "simultaneously transmitting a plurality of data packets." *Id*. at cl. 3. As such, Defendants' proposal would effectively add a new, unclaimed method step, needlessly adding ambiguity regarding the scope of the claim. The Court should find that the preamble is not limiting for claim 1.

V. U.S. PATENT NO. 7,545,781 ("THE '781 PATENT")

A. Overview of the '781 Patent

The '781 Patent relates to a system for utilizing both physical and virtual carrier sense in the context of multi-channel communications. See Ex. D at Abstract.

"Conventional wireless packet communication apparatuses are adapted to proactively determine only one wireless channel to be used and detect prior to the transmission of a wireless packet whether or not the wireless channel is idle (or performs carrier sense), then transmitting

one wireless packet only when the wireless channel is idle." Ex. D ('781 Patent) at 1:28-33. There are two forms of carrier sense: Physical carrier sense refers to the ability of a device to "listen" to a channel in determining whether a channel is currently being utilized based upon the received power detected. *See, e.g., id.* at 1:46-51. Virtual carrier sense involves a device sending information that indicates an amount of time that the channel should be treated as busy, which may exceed the duration of a packet being transmitted. *Id*. at 1:52-2:19. In conventional 802.11 systems, both physical and virtual carrier sense are used to describe the occupied state of a channel. *Id*. at 2:3-14; Ex. E (Geier Decl.) at ¶82. During a perceived occupied time, transmission by the "listening" device is inhibited, and is thus denoted as the "transmission inhibition time." *Id*. at 2:14-16.

However, multichannel systems may suffer from power leakage, such that communications on one channel can interfere with communications on another channel, including an adjacent channel, causing problems in receiving a packet. Ex. D. at 2:41-45. This could negatively impact the proper operation of virtual carrier sense. *See id*. at 3:6-10. The '781 Patent addresses such issues by associating channels together, such that transmission (or "busy" state) on one channel can cause an inhibition time to be set for another "paired" channel. *Id.* at Abstract. The duration of this inhibition time may be indicated by the duration used in the "virtual carrier sense." *Id*. at 3:20-26. Thus, the inhibition time may exceed the actual length of a packet being transmitted, and be made equal to the longest transmission time among a set of channels plus some additional predetermined time Ts, which can be used for spacing and/or acknowledgement packets. *Id*. at 3:30-35.

Channels may be associated together for purposes of setting inhibition time based on various criteria: For example, in some embodiments, inhibition time is set to a channel in which

leakage power is detected (*id.* at 4:24-30), while in others, it is merely assumed that the possibility of leakage exists (*id.* at 16:25-36).

B. Disputed Claim Term #8: "simultaneously transmitting . . . a plurality of wireless packets" ('781 Pat. cl. 1 and 16)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
The claim term speaks for itself and should be construed as plain meaning: usage in preamble is not limiting.	at least this quoted portion of the preamble is limiting and should be given its plain meaning

This term generally presents issues similar to the terms "transmitting a plurality of wireless packets simultaneously" (term #3) and "transmitting a plurality of data packets simultaneously" (term #7) discussed above. The parties dispute whether this phrase, which appears in the preamble of independent claims 1 and 16, is an additional limitation on the claims. Plaintiffs contend that it is not limiting for reasons similar to those presented above.

As for terms #3 and #7, Defendants have omitted the word "***for***" that appears before the phrase "transmitting a plurality of data packets simultaneously." The use of the word "for" plainly indicates an intended use or purpose, rather than a separate limitation. *Arctic Cat*, 919 F.3d at 1327 (stating, "as a general rule preamble language is not treated as limiting."). Moreover, in this case nothing in the bodies of claim 1 or claim 16 references any portion of ***this phrase*** for purposes of antecedent basis. Ex. D at cl. 1, 16. *See TomTom*, 790 F.3d at 1323 (finding that "a phrase in the preamble . . . provides a necessary structure for [a claim] does not necessarily convert the entire preamble into a limitation, particularly one that only states the intended use of the invention"). Consequently, the Court should determine that the phrase from the preamble identified by the Defendants is not limiting.

C. Disputed Claim Term #9: "multiple wireless channels" / "wireless channels" ('781 Pat. cl. 1, 9, 16 and 24)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
frequency ranges provided to transmit packets / multiple frequency ranges provided to transmit packets	distinct frequency regions used to transmit different wireless packets

This term generally presents issues similar to the ""wireless channels" / "multiple wireless channels" (term #4) discussed above for the '551 Patent. Defendants' proposal for this term as it appears in the '781 Patent is no more justified as it was for the '551 Patent.

First, the term "distinct" contradicts the '781 Patent's specification, which explicitly teaches that it addresses issues affecting *adjacent channels,* which a POSA understands to be overlapping channels. *E.g.*, Ex. D ('781 patent) at 2:41-45 ("When a received signal stays in the adjacent wireless channel suffering from the leakage, the received signal may not be successfully accepted depending on the difference between the incoming leakage power and the power of the received signal."), and 3:6-10 (leakage "may occur not only into adjacent channels but also into many other wireless channels such as the next adjacent wireless channels."); Ex. E (Geier Decl.) at ¶¶52-53, citing Ex. M[3] (Mishra).

Second, as for the '551 patent, there is no reason why wireless channels must, by definition, be limited to carrying any particular types of packets. *See* Ex. E (Geier Decl.) at ¶¶55-57. Indeed, the term "distinct" does not appear anywhere in the text of the '781 Patent. *Id.* By contrast, Plaintiffs' proposal is consistent with how a POSA would understand "multiple wireless channels." Ex. E (Geier Decl.) at [cites]. The Court should reject Defendants' proposal.

[3] Arunesh Mishra et al., *Exploiting Partially Overlapping Channels in Wireless Networks: Turning a Peril into an Advantage*, Proceedings of the 5th Conference on Internet Measurement 2005

D. Disputed Claim Term #10: "paired wireless channel other than…" ('781 Pat. cl. 1 and 16)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
The claim term speaks for itself and should be construed as plain meaning	channel that would be affected by leakage from the transmitting wireless channel

The parties dispute whether or not this phrase should be construed according to its plain meaning, as Plaintiffs contend, or whether the limitation "that would be affected by leakage from the transmitting wireless channel," should be added, as Defendants contend. As explained below, Defendants' proposal improperly reads a limitation from the written description into the claims, and, worse, it is a limitation that only applies to *some* of the '781 Patent's embodiments; it should therefore be rejected. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1319-20 (Fed. Cir. 2005) ("reading a limitation from the written description into the claims" is "one of the cardinal sins of patent law").

The language that Defendants propose to add only appears twice in the entire '781 specification, and then only in reference to the First and Twenty-Fifth embodiments. *Id.* at 15:59-65, 35:48-53. This language does not appear in the context of any other embodiment, even though setting of inhibition time to a paired channel is clearly involved in all the embodiments. *See, e.g.*, 16:46-50, 18:53-64. Thus, Defendants' proposal clearly does not represent the '781 Patent as a whole, and would tend to exclude certain embodiments or aspects of the inventions.

For example, some "aspects of the invention," such as the first aspect, indicate that a paired channel is one "which is affected by leakage from a transmitting wireless channel." *Id.* at 3:26-29; *see also id.* at 8:32-35; 46:54-59. However, other "aspects of the invention," such as the second aspect, state that the paired wireless channel is simply one "other than a wireless channel which requires the longest transmission time Tmax among wireless channels used for

simultaneous transmission." *Id*. at 3:44-50; 8:56-61; 9:10-19. The specification also teaches that in some embodiments, it may simply be "assumed" that a channel to which inhibition time may be set is one where "leakage can occur therebetween," with no indication that this assumption must be verified in any way. *See, e.g. id*. at 16:29-36. This is distinguished from other embodiments where there is "detect[ion of] received power to select a wireless channel ***actually affected by leakage***, ***instead of*** the method according to the second embodiment which is directed to ***all the wireless channels*** other than the wireless channel having the longest transmission time." *Id*. at 18:65-19:3. (emphases added). Thus, on the whole, the specification teaches that a "paired channel other than" a transmitting channel is not necessarily one that "would" experience leakage.

Given this context, including the variety of circumstances in which inhibition time may be applied, it is clear that the '781 Patent uses the word "paired" in its ordinary sense, which is that a "paired channel other than" a transmitting channel is one that is related, or associated with the transmitting channel, such that inhibition time is applied to it, regardless of the presence of actual leakage. *E.g*., Ex. R (Merriam Webster's online dictionary) (defining "paired" as "to become associated with another"). Indeed, the claim language already conveys this relationship. *Compare, e.g.,* Ex. D ('781 Patent) at cl. 1 ("paired wireless channel other than…"), *with* cl. 2 ("predetermining, by said transmit-side STA, combinations of wireless channels among the multiple wireless channels, the combinations of wireless channels having an effect on each other due to a leakage of transmitted power.").

E. Disputed Claim Term #11: "predetermined time Ts" ('781 Pat. cl. 1 and 16)

Plaintiffs' Proposed Construction	Defendants' Proposed Construction
amount of time that is defined before the duration of a data transmission is known	a transmission inhibition time that is defined by a received packet during transmission of a wireless packet; alternatively, indefinite

As they did for "paired wireless channel other than…" (term #10, *supra*), Defendants are once again proposing to define a term using a phrase cherry-picked from the descriptions of only two of the '781 Patent's numerous embodiments. Neither the specification nor the claims require limiting "predetermined time Ts" in this way. By contrast, Plaintiffs' proposal is consistent with the specification and claim language, and accurately conveys to a trier of fact what the "predetermined time Ts" is. This term is not indefinite.

The claim language supports Plaintiffs' proposal. First, the claim indicates that Ts is a duration of time that is "predetermined," and that it is distinguishable from "longest transmission time Tmax." *E.g.*, Ex. D ('781 Patent) at cl. 1. This language conveys that Ts is an amount of time that is known before the duration of a particular data transmissions, unlike "longest transmission time Tmax," which implies some assessment of the duration of a data transmission.

The specification also supports Plaintiffs' proposal. First, the '781 Patent includes multiple figures illustrating Ts and the sum of Tmax plus Ts. *See, e.g.*, Ex. D at Figs. 3-14, 16-25, 30-37, 46-47. A person of ordinary skill in the art viewing these figures in conjunction with the description of Figures 3-14, 16-25, 30-37, and 46-47 in the specification of the '781 Patent, would understand that Ts represents a defined amount of time. Furthermore, the specification indicates that the duration of Ts does not depend on the duration of any specific transmission. For example, in one embodiment the process first detects whether there is an existing inhibition time (Tsi) associated with each of multiple channels, wherein such inhibition times vary depending on the length of the data transmission. *See id.* at 17:8-21. Then, the process compares each Tsi with Tmax + Ts, and will reset inhibition to equal Tmax + Ts if that value is greater than Tsi. *Id.* at 17:21-26. Clearly, the value of Ts does not vary with the durations of particular packets, but is rather a static, pre-defined value against which variable durations like

Tsi may be compared. Thus, the value of Ts was defined prior to the point in time at which the duration of the transmission is known. *See id.* In view of the clear descriptions of Ts in both the claim language and specification, a POSA would not view this term as indefinite. Ex. E (Geier Decl.) at ¶¶98-100.

Defendants' proposal, on the other hand, is drawn from parentheticals appearing only in relation to Figures 2 and 40. However, these figures and the corresponding descriptions do not describe or define Ts generally. Rather, they at most indicate that, in the circumstances illustrated in these specific embodiments, the value of Ts may be "time that is defined by a received packet during transmission of a wireless packet." '781 Patent at 16:11-18. As such, Defendants' proposal should be rejected.

F. Disputed Claim Term #12: (a) "setting, by said transmit-side STA, time (Tmax+Ts) as transmission inhibition time to a paired wireless channel . . ., the transmission inhibition time used in the virtual carrier sense" ('781 Pat. cl. 1) / (b) "a virtual carrier sense unit of said transmit-side STA setting time (Tmax+Ts) as transmission inhibition time to a paired wireless channel" ('781 Pat. cl. 16)

Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
12(a)	The claim term speaks for itself and should be construed as plain meaning	setting the virtual carrier sense transmission inhibition time for the paired wireless channel in the transmit-side STA to (Tmax+Ts)
12(b)	The claim term speaks for itself and should be construed as plain meaning	a virtual carrier sense unit of said transmit side STA setting the virtual carrier sense transmission inhibition time for the paired wireless channel in the transmit-side STA to (Tmax+Ts)

The parties dispute whether these terms should be construed as having their plain meaning, as currently written in the claim, or whether the terms should be rewritten as Defendants propose. Defendants' proposed construction, which arbitrarily rearranges otherwise clear language, is a bald attempt to rewrite the claim itself. As the Federal Circuit cautions,

"Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee." *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999). Defendants' attempt to rewrite the claim should be rejected.

Defendants' revision of claim 1 only adds confusion. As one example, the claim language requires "setting, ***by*** said transmit-side STA, time (Tmax+Ts)" as transmission inhibition time to a paired wireless channel, but Defendants arbitrarily seek to replace the word "by" with "in," which changes the meaning of the claim without providing any additional clarity. A POSA will be left with confusion as to whether a setting by the transmit-side STA that is not limited internally to the STA itself (i.e., "***in*** the transmit-side STA" per Defendants' rewrite) would meet the claim language. As another example, "transmission inhibition time to ***a*** paired wireless channel" is replaced with "transmission inhibition time for ***the*** paired wireless channel." *Id*. at cl. 16. Defendants' proposed construction rewrites the claim language by adding a claim term ***without antecedent basis***, creating additional ambiguity where none previously existed.

Most significantly, the claim states that it is the "transmission inhibition time" that is "set…to a paired wireless channel." *Id*. at cl. 1. Defendants propose to change this to suggest that "virtual carrier sense" is "set" for a paired wireless channel. This proposed rewrite changes the plain meaning of the claim language, where there is no basis to do so. The specification uses "inhibition time" and "virtual carrier sense" as distinct terms. *See, e.g., id.* at 3:20-26 (stating that a determination that a channel is idle is made by both a physical carrier sense and "a virtual carrier sense for determining the wireless channel to be busy during set transmission inhibition time"). There is no support in the specification of a "virtual carrier sense inhibition time." Defendants' proposal needlessly conflates the two, which creates ambiguity. Defendants' unsupported rewrite of the claim language should therefore be rejected.

VI. CONCLUSION

For the reasons stated herein, Plaintiff respectfully asks the Court to adopt the constructions it has proposed for the claim terms at issue and reject Defendants' proposed constructions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on November 24, 2020, I electronically served the foregoing document *via* electronic mail to all counsel of record.

/s/ Steven R. Daniels
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