

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ERICSSON INC.
NOKIA OF AMERICA CORPORATION
Petitioner,

v.

XR COMMUNICATIONS LLC
Patent Owner

IPR2024-00613
Patent 10,715,235

PATENT OWNER'S PRELIMINARY RESPONSE

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Patent Owner's Exhibit List

Exhibit	Description
2001	Docket Control Order, <i>XR Communications LLC d/b/a Vivato Technologies v. AT&T Inc. et al</i> , No. 2:23-cv-00202-JRG-RSP, Dkt. 40 (E.D. Tex. August 25, 2023) (“DCO”)

The Board should deny institution of *inter partes* review (“IPR”) of U.S. Patent No. 10,715,235 (“’235 patent”), for at least two independent reasons.

First, the Petition will not succeed on the merits. The Petition asserts that U.S. Pat. No. 7,248,841 (“Agee”) alone or combined with U.S. Pat. No. 3,255,450 (“Butler”) renders obvious claims 1-5, 8-12, and 15-19. But the Petition fails to show that Agee alone or combined with Butler discloses or renders obvious claim elements [1.3]-[1.6]. These elements require: [1.3] receiving, from a remote station, a first signal transmission via the first antenna element and a second signal transmission via the second antenna element simultaneously; [1.4] determining first signal information for the first signal transmission; [1.5] determining second signal information for the second signal transmission that is different than the first signal information; and [1.6] determining a set of weighting values based on the first signal information and the second signal information. However, the Petition fails to present a coherent theory of the “first signal” and “second signal” from [1.3] being used to determine the “first signal information” and “second signal information” in [1.4] and [1.5] further being used to “determine a set of weighting values” in [1.6]. To the extent the Petition even articulates any theory, it does not satisfy these claim requirements. For example, a critical component of the Petition’s invalidity theory is Agee’s “pilot data signal” which the Petition’s theory for [1.6] requires to be the “signal information” used to determine the “weighting values.” This meant that the

Petition was required to map Agee's "pilot data signal" as "signal information" for either limitation [1.4] or [1.5]. However, the Petition does not map Agee's "pilot data signal" as "signal information" for either [1.4] or [1.5]. This is fatal to the Petition's theory. The Petition's theories for the other challenged claims each do nothing more than incorporate by reference to the Petition's theories for claim 1. Pet. at 76 (claim [8.1]-[8.4] incorporating by reference to claim 1 for these claim elements), 80 (claim 15 incorporating by reference to claim 1 for these claim elements). Thus, institution should be denied.

Second, as discussed further below, the *Fintiv* factors weigh strongly against institution. The district court trial is set to occur **seven months** before the FWD deadline. This is because Petitioners delayed in filing the Petition, waiting until nearly eight months after the district court case began. Further, substantial work on the '235 patent has already been done by the parties and district court, and even more work will be done by the institution deadline. By then, the parties will have completed claim construction and fact discovery and opening expert reports would be served. Further, Petitioners are relying on the same prior art and invalidity grounds at issue in the district court. To date, they have not provided a *Sotera* stipulation that would ameliorate the risk of wasting resources or inconsistent outcomes under *Fintiv* factor 4. The Petition is also weak on the merits. Thus, institution should be denied.

I. THE '235 PATENT

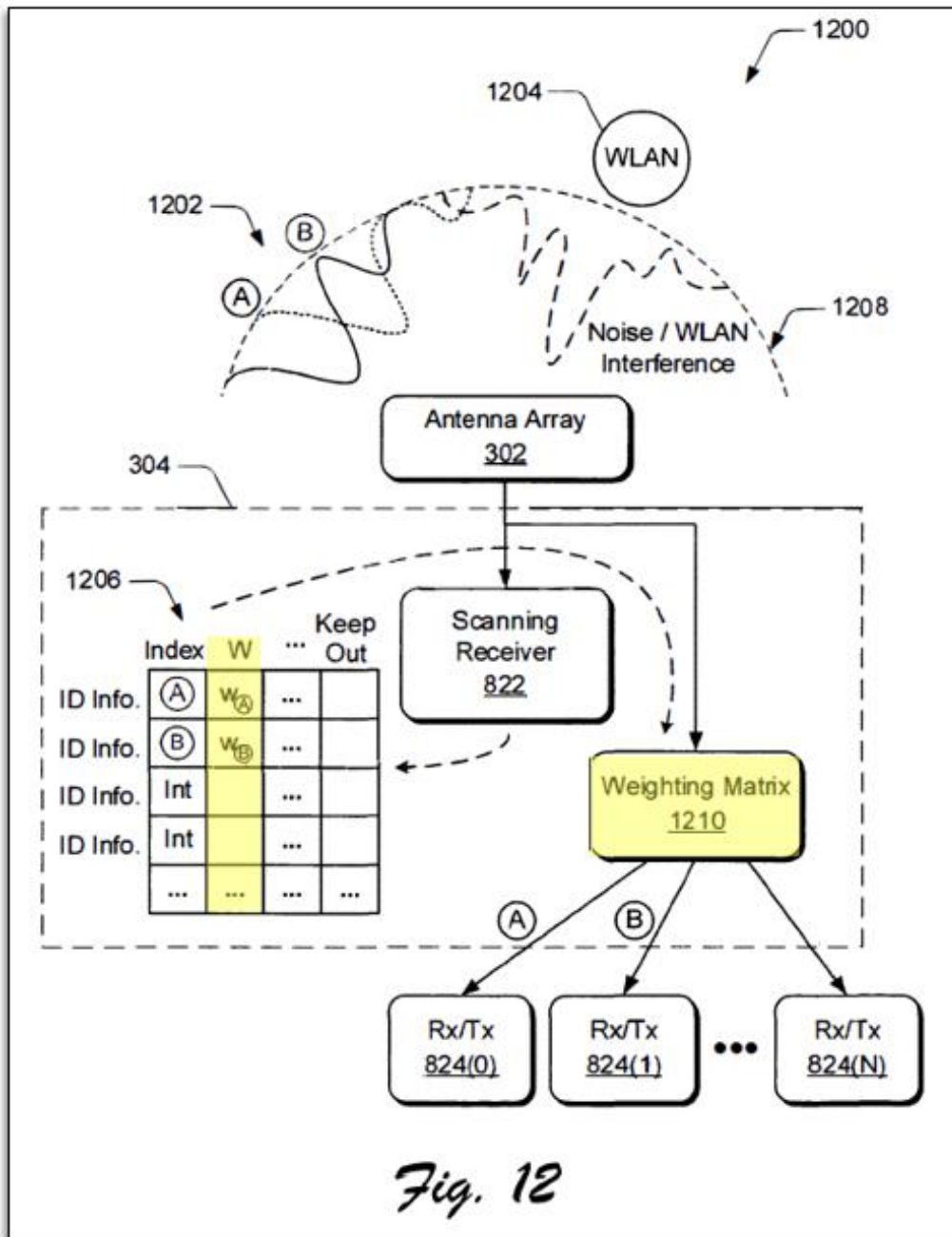
A. Overview

The '235 Patent (Ex. 1001) is entitled “Directed wireless communication.” The '235 Patent discloses a wireless communications apparatus that comprises an “antenna array 302” with a plurality of “antenna elements” to emanate an array of multiple directed communication beams 214(1), 214(2),...214(N). EX-1001, FIGS. 2, 3. The '235 Patent teaches that the apparatus receives signal transmissions simultaneously via directed communication beams. EX-1001, 3:38-52 (“An increase in communication range is achieved by beamforming directed communication beams which simultaneously transmit directed signals and receive communication signals from different directions via receive and transmit beamforming networks.”). In one embodiment, “antenna array 302 can include sixteen antenna elements...” from which “sixteen different communication beams 602(0), 602(1),...,602(15) are formed,” each of which may have beam patterns that “differ in width, shape, number, angular coverage, azimuth, and so forth.” EX-1001, 9:12-34; see EX-1001, 6:61-7:5 (“directed communication beams 214 of antenna array 302 can be directionally controllable”). In one embodiment, only thirteen of the beams are used for transmission and reception. EX-1001, 9:34-60.

The '235 Patent apparatus receives signal transmissions via the directed communication beams from other devices or “nodes within the wireless routing

network.” EX-1001, 24:25-34. Further, the '235 Patent apparatus determines signal information regarding each of the simultaneously received signals. EX-1001, 15:44-16:49, 24:25-25:30. In the Figure 12 embodiment, the “signal control and coordination logic 304 includes the scanning receiver 822 that is configured to update routing information 1206 with regard to the received signals.” EX-1001, 24:25-67. The disclosures regarding “scanning receiver 822” at columns 15-16 elaborates that the “scanning receiver 822” determines “routing and signal information which can include transmit power level information, transmit data rate information, antenna pointing direction information, weighting information, constraints information, null/zero location information, peak location information...frequency information, timing information, user and node authentication information, keep out area information, etc.” EX-1001, 15:44-16:49. Figure 12 describes how a set of weighting values is determined based on differing signal information for each received signal from each node. For example, as shown in Figure 12 below, “communication and/or data transfer signals are received from sources 1202 (e.g., sources A and B).” EX-1001, 24:25-34. These signals are provided to a “signal control and coordination logic 304” which includes a “scanning receiver 822 that is configured to update routing information 1206 with regard to the received signals.” EX-1001, 24:35-25:30. More specifically, the routing information 1206 includes a routing table, and the “routing table includes stored weighting values

(w) each associated with a particular signal source 1202 (e.g., sources A and B)...[a] description of the received signal(s) can be stored in the routing table in the form of the pattern of weighting of the signal(s). In this example, a polynomial expansion in z , $w(z)=w_0+w_1z+w_2z^2+w_3z^3+w_4z^4+ \dots +w_iz^i$ can be utilized to establish the values of the weights (w_i) to be applied to a weight vector.” *Id.* Figure 12 is depicted below.



B. Challenged Claims

The Petition challenges claims 1-5, 8-12, and 15-19 of the '235 Patent. Pet. at 29. Independent claim 1 recites:

Identifier	Claim Language
[1.0]	A receiver for use in a wireless communications system, the receiver comprising: an antenna, wherein the antenna comprises a first antenna element and a second antenna element;
[1.1]	a transceiver operatively coupled to the antenna and configured to transmit and receive electromagnetic signals using the antenna;;
[1.2]	a processor operatively coupled to the transceiver, the processor configured to:
[1.3]	Receive a first signal transmission from a remote station via the first antenna element and a second signal transmission from the remote station via the second antenna element simultaneously;
[1.4]	determine first signal information for the first signal transmission;
[1.5]	determine second signal information for the second signal transmission, wherein the second signal information is different than the first signal information;
[1.6]	determine a set of weighting values based on the first signal information and the second signal information;
[1.7]	wherein the set of weighting values is configured to be used by the transceiver to construct one or more beam-formed transmission signals;
[1.8]	cause the transceiver to transmit a third signal to the remote station via the antenna, the third signal comprising content based on the set of weighting values.

C. Prosecution History

The '235 Patent issued from U.S. Pat. App. No. 15/495,539 filed April 24, 2017 claiming priority through continuation applications to U.S. Provisional Pat. App. No.60/423,660 filed on November 2, 2002. In previous IPRs, Patent Owner has contended that the '235 patent is entitled to an earlier priority date, but for purposes of this patent owner preliminary response only, Patent Owner does not raise arguments regarding priority date or attempt to pre-date the asserted prior art as doing so is not necessary to show that institution should be denied. Patent Owner reserves the right to challenge the priority issue if the Petition is instituted.

II. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes that for the '235 patent, a “POSITA in November 2002 would have been familiar with wireless communications networks, including the design of beamforming using multiple antennas. A POSITA would have at least a Bachelor’s degree in Electrical Engineering or equivalent, and at least two years of work experience. A more advanced degree can substitute for some work experience.” Pet. 6-7. For purposes of this preliminary response, Patent Owner does not challenge Petitioner’s proposed definition. Patent Owner reserves the right to challenge the definition or propose an alternative definition if the Petition is instituted.

III. CLAIM CONSTRUCTION

The Petition proposes that each term be given its plain and ordinary meaning and does not propose any formal claim constructions. Pet. at 6. Patent Owner agrees that the terms of the challenged claims carry their plain and ordinary meaning. And although Patent Owner reserves the right to address claim construction issues if institution is granted, Patent Owner also agrees that formal claim constructions are unnecessary to decide whether to institute this IPR. Patent Owner *disagrees* that the asserted prior art “meets each claim limitation under any reasonable construction” as the Petition contends Pet. at 6. To the contrary, the asserted prior art fails to meet the limitations of claims 1, 8 under the plain meaning of the claim.

IV. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF UNPATENTABILITY FOR ANY CHALLENGED CLAIM

The Petition fails to show that Agee alone or combined with Butler discloses or renders obvious claim elements [1.3]-[1.6] as arranged in the claim.

These elements require, *inter alia*: [1.3] receiving, from a remote station, a first signal transmission via the first antenna element and a second signal transmission via the second antenna element simultaneously; [1.4] determining first signal information for the first signal transmission; [1.5] determining second signal information for the second signal transmission that is different than the first signal

information; and [1.6] determining a set of weighting values based on the first signal information and the second signal information.

Patent Owner notes that these claim elements from claim 1 are also elements of the other challenged independent claims from Ground 1 of the Petition. Further, the Petition's theories for the other challenged claims do nothing more than incorporate by reference to the Petition's theories for claim 1. Pet. at 76 (claim [8.1]-[8.4] incorporating by reference to claim 1 for these claim elements), 80 (claim 15 incorporating by reference to claim 1 for these claim elements). Thus, the Board need only evaluate the flaws in the Petition's arguments for limitations [1.3]-[1.6] in order to deny institution on all challenged claims.

As shown below, the Petition fails to present a coherent theory of the "first signal" and "second signal" from [1.3] being used to determine "first signal information" that is different than "second signal information" in [1.4] and [1.5] further being used to "determine a set of weighting values" in [1.6]. To the extent the Petition even articulates any theory, it does not satisfy these claim requirements. For limitation [1.6], the Petition's theory requires Agee's "pilot signal" or "pilot data tones" to serve as the claimed "signal information" used to calculate Agee's "weights." Pet. at 64-69. But the Petition never alleges that the "pilot signal" or "pilot data tones" are the claimed "signal information" for purposes of limitations [1.4] or [1.5]. Pet. 61-64 (no mapping of "signal information" to "pilot signal" or "pilot data

tones”). Rather, the Petition contends that these elements are the “signal transmissions” that are “simultaneously received” in the Petition’s theory for limitation [1.3], where the Petition’s theory relies on Agee’s ““**pilot signals**” [which] are **received** on Agee’s Butler matrix antennas (and their radio OFDM transceivers and the processor) **simultaneously**” as the simultaneously received “signals” of limitation [1.3].¹ Pet. 51 (discussing receiving the “pilot signal” as a “received signal” on the antennas and describing receiving the “pilot tones on one or more antennas”).

And, as shown below, the Petition’s remaining discussion of limitations [1.3]-[1.5] does not cure these deficiencies, because the Petition never successfully articulates any consistent theory where “first signal information” and “second signal information” in [1.4] and [1.5] are used to “determine a set of weighting values” in [1.6]. For example, despite the Petition’s extensive discussion of the “Little Joe” system and its use of “signal strengths,” the Petition does not identify any use of signal strengths to determine a weighting value in Agee.

A. The Petition’s theory for [1.6] that Agee’s “pilot data signal” or “pilot data tones” are the “signal information” used to calculate Agee’s “weights” fails because the Petition does not map Agee’s

¹ All emphasis is added unless otherwise noted.

“pilot data signal” or “pilot data tones” as “first signal information” or “second signal information” in [1.4] or [1.5].

The Petition’s theory for [1.6] asserts and requires that “signal information” in [1.6] corresponds to a **“pilot data signal”** (the ‘combiner output data’) that [Agee] **“receives from the Butler matrix.”** Pet. 64-69. The Petition identifies a disclosure in Agee where “combiner weights are formed using an FFT-based least-squares algorithms [FFT-LS]” based on “combiner output data” and **“transmitted pilot data.”** Pet. at 64, citing Ex. 1004, 64:43-50, Figs. 35-37. The Petition argues that Fig. 37 shows the “‘FFT-LS’ algorithm (using the Butler matrix outputs) **“processing the pilot signal”** which is shown as the x_0 term in Fig. 37.” Pet. 66; Pet. 67 (citing “Fig. 30 (showing ‘x’ data arriving from RF feeds).”). The Petition argues the “description of Figure 30 teaches (consistent with Figs. 35-37 above) that the **“received pilot data tones (‘x’)”** is received by the FFT-LS algorithm to **“calculate the weights.”** Pet. 68. Thus, the Petition’s theory for [1.6] requires **“pilot data signal”** or **“received pilot data tones (‘x’)”** [that] is received by the FFT-LS algorithm to calculate the weights” to satisfy “signal information.”

Because the Petition’s theory uses Agee’s **“pilot data signal”** or **“received pilot data tones (‘x’)”** as “signal information” used to calculate the weights of [1.6], the Petition was required to articulate a theory of invalidity where Agee’s **“pilot data signal”** satisfies the “first signal information” or “second signal information”

elements in [1.4] and [1.5]. However, the Petition failed to do so. This deficiency applies to all challenged claims and is fatal to the Petition's theories.

First, the Petition never maps the pilot data signal as determined “**signal information**” for purposes of [1.4] or [1.5]. Pet. 61-64. Despite relying on the “pilot data signal” as “signal information” used to calculate the “weights” in the Petition's theory of [1.6], the Petition's theory for [1.4] and [1.5] (Pet. 61-64) does not address any “pilot data signal” that Agee “receives from the Butler matrix” (Pet. 64), any “transmitted pilot data” (Pet. at 64), any “pilot signal which is shown as the x_0 term in Fig. 37” (Pet. 66), nor any “received pilot data tones (‘x’)” which are received by the “FFT-LS algorithm” (Pet. 68). These things are not described anywhere in the Petition's theories for [1.4] and [1.5]. Pet. 61-64.

Instead, the Petition's theories for [1.4] and [1.5] attempt to map the “first signal information” and “second signal information” elements to ““signal strength” measured on each antenna” and “signal strength information.” Pet. 61. The Petition does not allege that “signal strength information” is the same thing as “pilot data signal” or “pilot data tones.” Pet. 61-69. Of course, they are not the same thing, nor are they even related. *Id.* A signal's strength is generally represented in decibels (dB) or decibel-milliwatts (dBm). “Pilot data signal” is an actual signal, **not** a signal strength. And the Petition supports this, because it always characterizes “pilot signal” as a “**signal**” including in its discussion of limitations [1.3] and [1.6], and

never characterizes the pilot signal as a “**signal strength**,” whether for purposes of [1.4] or otherwise. *See, e.g.*, Pet. 51 (The “pilot signals” are received on Agee’s Butler matrix antennas (and their radio OFDM transceivers and the processor) simultaneously as explained in Section V.E.”); Pet. 61-64, Pet. 66 (“pilot signal which is shown as the x_0 term in Fig. 37”). Likewise, the Petition’s citations to Agee characterize the “pilot signal” as an “x” term (which is used by persons of ordinary skill in the art to describe a signal), not as a signal strength in dB or dBm, nor as anything related to signal strength such as received signal strength indicator (RSSI) or received signal power. *Id.*

Accordingly, despite being required to do so, the Petition never maps the “pilot data signal” or “received pilot data tones” as the “first signal information” or “second signal information” of limitations [1.4] or [1.5]. The *only* time the word “pilot” is used anywhere in the Petition’s mapping of limitations [1.4] and [1.5] is in a single sentence on page 63 that does not allege that “signal information” maps to “pilot signal data.” Rather, in this sentence, the Petition argues that Agee discloses “signal information” in the form of “timing information.” Pet. 63 (“Third, different signals measured on Agee’s antennas provide... ‘timing information’ – which are each forms of ‘signal information.’ Ex-1001, 15:44-56...Agee’s measured signals provide the pilot signal’s ‘observed timing offset’—which is used to provide ‘timing information’ for Agee’s system to properly detect and use the pilot signal to calculate

weights to receive (and transmit) data.”). Here, it is clear that the Petition is not mapping the “pilot data signal” or “received pilot data tones” as the claimed “signal information” of [1.4] or [1.5]. Pet. 63. The Petition is explicit in this sentence that it is mapping the “signal information” to “timing information” corresponding to the pilot signal’s “observed timing offset.” Pet. 63. But the Petition never addresses the “timing information” again in [1.6]. Pet. 64-69 (no discussion of “timing information” or “observed timing offset.”). Instead of articulating a “timing information”-based theory for [1.6], the Petition maps “signal information” in [1.6] to “pilot data signal” or “received pilot data tones (‘x’)”—despite failing to map or discuss these elements in [1.4] or [1.5]. Pet. 61-64. This fails.

Second, in any event, the Petition is clear that it is not relying on the “pilot signal” or the “pilot data tones” as the “signal information” of limitations [1.4] and [1.5], because the Petition is using these elements as the “simultaneously received” signals in the Petition’s theory for limitation [1.3], where the Petition’s theory relies on Agee’s “**pilot signals**” [which] are **received** on Agee’s Butler matrix antennas (and their radio OFDM transceivers and the processor) **simultaneously**” as simultaneously received “signals” of limitation [1.3]. Pet. 51 (discussing receiving the “pilot signal” as a “received signal” on the antennas and describing receiving the “pilot tones on one or more antennas”). Thus, Agee’s “received pilot signal” or “received pilot data tones” cannot be the claimed “signal ***information***” in [1.4] and

[1.5], because the Petition mapped the “received pilot signal” or “received pilot data tones” as the received “**signals**” for [1.3], and a person of ordinary skill in the art would understand that the Petition is relying on “received pilot **signal**” as a received signal, not as “signal **information**.” The Petition always characterizes “pilot signal” as a received “**signal**” in its mapping of limitation [1.3]. *See, e.g.*, Pet. 51 (**The “pilot signals” are received on Agee’s Butler matrix antennas (and their radio OFDM transceivers and the processor) simultaneously** as explained in Section V.E.”). *See* Pet. 51-52 (discussing receiving the “pilot signal” as a “received signal” on the antennas and describing receiving the “pilot tones on one or more antennas”).

Similarly, in the Petition’s discussion of limitation [1.6], the Petition consistently characterizes the “pilot signal” as a received “signal,” not signal “information.” *See* Pet. 66 (“pilot signal which is shown as the x_0 term in Fig. 37”), Pet. 67 (the “pilot signal” is transmitted on “32 different frequencies (tones) that are all transmitted / received simultaneously”). The Petition’s citations to Agee also unequivocally treat the “pilot signal” as “signal.” Pet. 64-69.

Third, the Petition does not explain in the discussion of [1.6] whether the “pilot data signal” is the claimed “first signal information” or the claimed “second signal information.” Pet. 64-69. The Petition also does not articulate how “pilot data signal” is “second signal information” which is “different than” “first signal information” in the discussion of limitations [1.4], [1.5], or [1.6]. Pet. 61-69. Given

the centrality of the “pilot data signal” to the Petition’s theory of [1.6], these deficiencies are fatal to the Petition. The Petition’s only theory for [1.6] requires the “pilot data signal” / “pilot data tones” as at least one of the “signal information” elements in [1.6]. Pet. 64-69. The Petition articulated no theory for [1.6] in which the “pilot data signal” or “pilot data tones” does not need to constitute the “signal information.” *Id.*

Thus, as shown above, the Petition’s theory requires Agee’s “**pilot data signal**” or “**received pilot data tones (‘x’)**” to be “signal information” used to calculate the weights of [1.6]. Pet. 64-69. This means that the Petition was required to articulate a theory of invalidity where Agee’s “pilot data signal” or “received pilot data tones” satisfy the “first signal information” or “second signal information” elements in [1.4] and [1.5]. However, the Petition failed to do so. Pet. 61-64. Thus, the Petition cannot show that limitations [1.4]-[1.6] are met.

B. The Petition’s conclusory theory for [1.6] that Agee’s “pilot data signal” is “combiner output data” fails to show that the “pilot data signal” is “signal information” of [1.4] and [1.5] that is used to determine the weighting values in [1.6].

In an effort to draw some throughline between limitations [1.4], [1.5], and [1.6], Petitioners may point to the conclusory allegation at the beginning of [1.6] that the “pilot data signal” is a “combiner output data” that Agee “receives from the

Butler matrix.” Pet. 64-65 (“Agee uses a pilot data signal (the ‘combiner output data’) that it receives from the Butler matrix”). This theory is not developed in the Petition, and it is not supported by Agee. The Petition’s cited portion of Agee does not say that the “pilot data signal” is a “combiner output data” that is “received from the Butler matrix”—rather, it **contrasts** the “transmitted pilot data” **from** the “combiner output data.” Pet. 65, citing Ex. 1004 (Agee) 64:43-50 (“...combiner weights are formed using an FFT-based least-squares algorithms that adapt [weights] to values that minimize the mean-square error (MSE) between the combiner output data and a known segment of transmitted pilot data.”). Further, the Petition does not show or even argue that “pilot data signal” is “combiner output data” in the context of the discussion about “combiner output data” in limitations [1.4] and [1.5]. Pet. 64. Further, in the context of [1.3], the Petition is clear that the “pilot data signal” is “received simultaneously” from the remote station, not “combiner output data.” Pet. 51.

In any event, any contention that Agee’s “combiner output data” is the claimed “signal information” used to determine the “weighting values” necessarily fails. Agee does not say much about “combiner output data,” but what it does say indicates that the “combiner output” is output using the “combiner weights W.” Ex. 1004, Fig. 30. The Petition fails to show that the *combiner outputs* which *result from* applying the *combiner weights* to the pilot signal is the claimed “signal information,”

which in [1.6] must be the *input* to the determination of the set of weighting values, not the *output* from applying the weighting values. For instance, Figure 30 in Agee illustrates the “Multilink Adaptation Algorithm” used to output the “combiner outputs” 516 and 518, which are clearly depicted in Figure 30 as “combiner output $y(I;Q)=X(i)w(Q)$,” where “y” is an “output” from combining multiple inputs “x” (represented as “X”) and applying the weights (“w”) to those inputs X to generate the “combiner output y.” Ex. 1004, 36:30-34, Fig. 30. This is showing weights being used to generate combiner outputs, not combiner outputs being used to generate weights.

The Petition is consistent with the understanding that Agee’s *combiner weights* are calculated from the *pilot signal* (not the *combiner output*), and that the “combiner output” is the output from applying weights to a pilot signal and not the input to calculating the weights. The Petition says that Agee “uses ‘pilot tone data’ to calculate weights.” Pet. 68 (“Based on the pilot tones on each antenna, Agee calculates the “combiner weights W....”). The Petition argues the “description of Figure 30 teaches (consistent with Figs. 35-37 above) that the **received pilot data tones (‘x’)** is received by the FFT-LS algorithm to **calculate the weights.**” Pet. 68. Indeed, Agee says that in Figure 30, the “combiner outputs” are output by applying the weights. Ex. 1004, 36:30-34, Fig. 30. The Petition also argues that the “Combiner weights W” are computed from the “pilot signal” to output the combiner output data.

Pet. 65 (“Figure 35 shows that if the received data is a “pilot symbol” then block 594 computes ‘Combiner weights W.’”), Pet. 66 (“Fig. 37 shows the calculation in box 594 for the ‘combiner weights W’ using the ‘FFT-LS’ algorithm (using the Butler matrix outputs) processing the pilot signal which is shown as the “x0” term in Fig. 37.”).

The Petition also fails to show that Agee’s “combiner output data” is either “first signal information” or “second signal information different than the first signal information.” The Petition’s discussion of [1.6] does not address how “combiner output data” satisfies these aspects of [1.4] or [1.5]. Pet. 64-69. And in the discussion of limitations [1.4] and [1.5], the Petition fails to show that Agee’s “combiner output data” is either “first signal information” or “second signal information different than the first signal information.” Pet. 61-64. Addressing [1.4] and [1.5], the Petition uses the term “combiner output data” but it is unclear whether the Petition is mapping to Agee’s “combiner output data” (which, as shown above, is the y term in Figure 30, and which is not an input to calculating weights) or to a Butler matrix output that is not disclosed in Agee as “combiner output data.” There is no disclosure in Agee of “Butler matrix output” or description of it as “combiner output data.” Having failed to specify what “combiner output” is actually the subject of the Petitioner’s theory, and given the ambiguity and conclusory nature of these arguments in the Petition, the Petition cannot prevail on a “combiner output” theory.

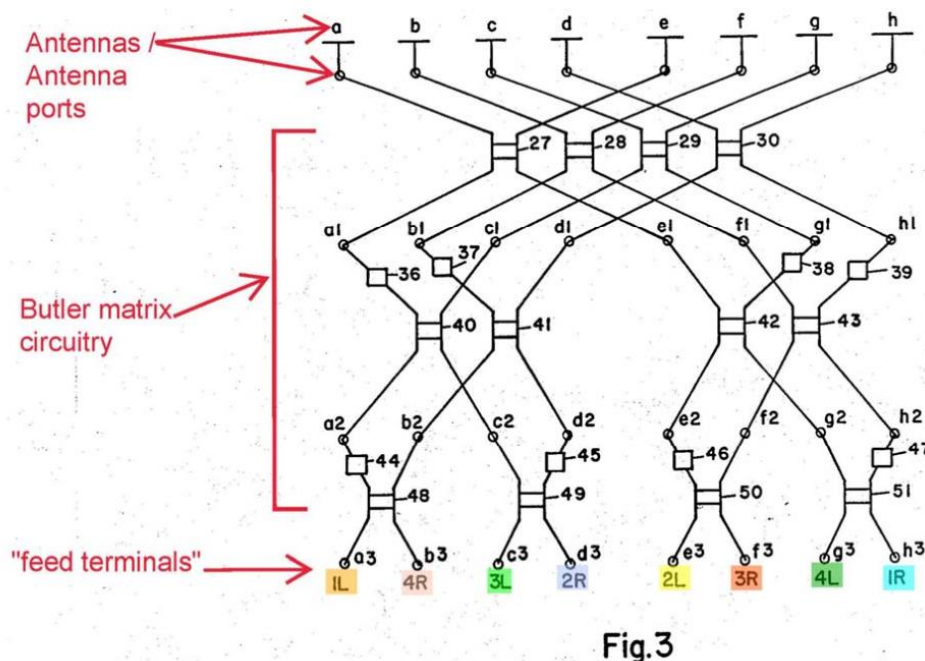
In any event, the Petition's theories on "Butler combiner output" in [1.4] and [1.5] fail for several additional reasons. The Petition first argues that "each individual Butler combiner output by itself is a determination of a first signal information (from a first antenna's signal) and second signal information (from a second antenna's signal) as claimed." Pet. at 64. This flatly contradicts the claim language. Limitations [1.4] and [1.5] require both a "first signal information" and "second signal information [that] is different than the first signal information." One individual "Butler combiner output by itself" cannot satisfy both the "first signal information" and "second signal information [that] is different than the first signal information." The Petition does not (and cannot) articulate how one individual output can be "different than" itself. Pet. 64.

Next, the Petition alternatively contends that "Agee also teaches the Butler outputs collectively ('combiner output data') constitute a determination of different signal informations. For example, the first and second signal informations are Butler output #1 and Butler output #2." Pet. at 64. The Petition cites nothing in Agee in support of this theory. *Id.* The Petition only cites the expert declaration at ¶534. Pet. at 64, citing Ex. 1003, ¶534. But on this point, the Petitioners' expert declarant merely parrots the conclusory allegations in the Petition and cites nothing in Agee. *Id.* Because the expert declaration merely parrots the conclusory allegations of the Petition and cites no competent supporting evidence for the assertions it offers, it

should be accorded little or no weight. *See* 37 CFR § 42.65 (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9 at 15 (Aug 24, 2022) (precedential) (denying institution and giving “little weight” to “cited declaration testimony [that] is conclusory and unsupported” and “adds little to the conclusory assertion for which it is offered to support”).

In any event, the Petition fails to show that “Butler output #1” or “Butler output #2” are “signal information” of [1.4] or [1.5] or that such outputs are “signal information” used to determine “weighting values” in [1.6]. In describing the Agee and Butler prior art, the Petition alleges that a Butler matrix output is the “‘combined’ signals from multiple antennas being received and aggregated.” Pet. 8. But in view of the Petition’s clear assertion that a Butler matrix output is a combined “signal,” the Petition fails to show or explain for [1.4] or [1.5] how the Butler matrix output, which is a “combined signal” (Pet. 8), is “signal **information**.” Pet. 64. The Petition’s conclusory allegation that each output is a “determination of different signal informations resulting from multiple signals” is not supported by any evidence and is contradicted by the Petition’s clear assertion that each Butler output is a combined “signal” which is combined from multiple signals—not signal *information* as claimed.

This can be confirmed from the Petition's own discussion of Butler, which clearly states that the output ports of a Butler matrix, in the context of reception, "output the 'combined' *signals* from multiple antennas being received and aggregated to form each reception beam." Pet. at 8. This is further confirmed by reference to the figure from the well-known Butler reference, showing the analog components that make up the matrix, here with the Petition's own highlighting:



Pet. at 8 (quoting Ex. 1005, Fig. 3) (annotations in Petition). The combiners and phase shifters that form the Butler matrix do exactly that: combining and phase-shifting the various signals to produce output signals (in the context of reception) at the feed terminals.

A key concept in the Little Joe system was its simultaneous use of all of the output ports of the Butler matrix simultaneously. As the Petition acknowledges, Little Joe connected an individual WLAN card to each Butler output port, and made separate measurements of the signal on each individual port:

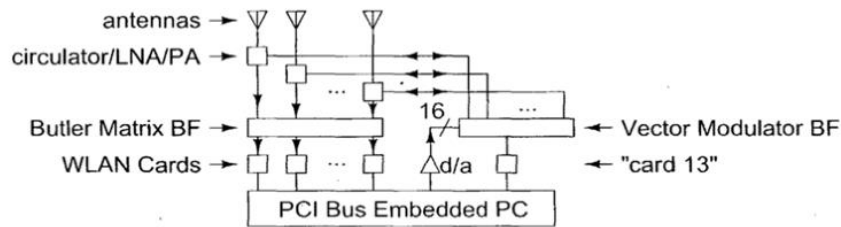


Figure 1: *Little Joe* block diagram.

Ex. 1009 at 0135; *see* Pet. at 23-24.

The Petition does not and cannot identify a single explicit or implicit disclosure in Agee of using *all* of the individual output ports of the Butler matrix, or indeed even of using a plurality of output ports. The closest is a marked-up illustration purportedly showing a plurality of inputs to Agee's Figure 30 "from [sic] Butler matrix." *See* Pet. at 59. But the annotation itself as well as the Petition's own characterization confirm that these are a plurality of *tones*, i.e. different signals at different frequencies in the Petition's theory, not from a plurality of ports of a Butler matrix. *See id.* at 58-59 ("Each input line from the left (coming from the antenna) is for a specific 'tone'...").

Furthermore, the Petition's proposition that Agee uses "combiner output" to mean the output of a Butler matrix lacks any support. Pet. at 46. The Petition cites its expert declaration, which just reiterates the Petition's argument in conclusory form. Ex. 1003 ¶ 448. The Petition seems to assume that "combiner" is some sort of term for a Butler matrix but provides no support for the proposition beyond a quotation from Butler that does not even mention "combiner." Pet. at 8-9.

In any event, the Petition fails to show that "Butler output #1" or "Butler output #2" are "signal information" of [1.4] or [1.5] or that such outputs are "signal information" used to determine "weighting values" in [1.6]. Such a theory is not supported by the conclusory allegations in the Petition for [1.4] and [1.5], and in any event, it is directly inconsistent with the Petition's theories of Agee and Butler, including for other limitations such as [1.2], [1.3], and [1.6]. In describing the Agee and Butler prior art, the Petition alleges that a Butler matrix output is the "**combined' signals** from multiple antennas being received and aggregated." Pet. 8. In view of the Petition's clear assertion that a Butler matrix output is a combined "signal," the Petition fails to show or explain for [1.4] or [1.5] how the Butler matrix output, which is a "combined signal" (Pet. 8), is "signal **information**." Pet. 64. The Petition's conclusory allegation that each output is a "determination of different signal **informations** resulting from multiple signals" is not supported by any evidence and is contradicted by the Petition's clear assertion that each Butler output

is a combined “signal” which is combined from multiple signals—not signal *information* as claimed. Pet. 8.

A further problem with the Petition’s effort to map “Butler outputs” as “signal information” determined by the claimed “processor” is that the Petition’s theory requires that the Butler matrix outputs are *inputs* to the claimed “processor” of [1.2]. Pet. 42 (“The DSP [processor] receives and processes the Butler matrix outputs from the antennas.”). But if the Butler matrix outputs are inputs to the DSP “processor” (as alleged for [1.2]), then the Butler matrix outputs cannot also be “signal information” that is “determined” by the “processor” as required under [1.4] and [1.5].

Finally, yet another problem with this mapping of “Butler output #1” and “Butler output #2” is that there is no analysis or theory in [1.6] showing that Agee discloses or suggests that Butler matrix outputs are “signal information” rather than “signal.” Pet. 64-69.

Thus, as shown above, none of the discussion of “combiner output” or “Butler outputs” in the Petition addresses the problems with the Petition’s reliance on the “pilot data signal” for [1.6].

C. The Petition’s theory of “signal strength” as “signal information” of [1.4] and [1.5] is irrelevant, because there is no contention that

Agee determines weighting values in limitation [1.6] based on signal strength.

The Petition's analysis of the "signal information" limitations, [1.4] and [1.5], gives pride of place to "signal strength information," manifesting its failed attempt to compare Agee with the "Little Joe." Pet. at 61-62. For example, the Petition alleges that:

"Agee discloses these elements by using the 'signal strength' measured on each antenna. PO argued that these elements were disclosed by Littlejoe's statement that "[t]he beamforming application uses the signal strength information derived from packet receptions by the 'searcher' receivers" using the Butler matrix. EX-1002, 000131, Section V.F.1. Agee does the same "determine" steps when the Multilink Weight Adaptation Algorithm uses the signal strength information derived from the receptions by the antennas and their associated OFDM receivers in the Butler matrix discussed in 1.3 and 1.7. EX-1003, ¶516."

Pet. at 61.

The Petition continues by alleging that "Agee's Butler matrix measures different signal informations (signal strengths) received on each antenna even for the same signal wave due to the phase differences resulting from the antennas' spatial separation." Pet. at 62.

This theory is, however, fundamentally flawed, for several reasons. First, Agee does not teach anything about “signal strength” or about a Butler matrix deriving or determining “signal strength,” which is not something that a Butler matrix is even capable of doing. Second, the Petition cannot show a “first signal” and “second signal” from [1.3] being used to determine some “second signal strength information” which is different than “first signal strength information,” as required in [1.4] and [1.5].

Third and critically, the Petition does not and cannot show any determination of beamforming weights in [1.6] based on *any* determined signal strengths in Agee, let alone based on a *first* signal strength which is *different* than the *second* signal strength. Pet. at 61-62, 64-69. Other than an unsupported, conclusory statement in the last sentence of the section, Pet. at 69, there is no reference to “strength” anywhere in the [1.6] analysis. Pet. at 64-69. And the actual disclosures cited from Agee teach determinations based on the actual OFDM tones and symbols, not based on “signal strength.” See, e.g., Pet. at 68 (“EX-1004, 65:24-46 (‘K is the number of tones used in a single FFT-base LS algorithm’ used to calculate ‘combiner weights.’)).

D. The Petition's remaining "signal information" theories fail and are irrelevant as they play no role in the Petition's theory for [1.6]

The Petition also presents a brief litany of one- or two-sentence allusions to possible mappings of "signal informations" in Agee. Pet. at 62-64. None of these is actually a theory, because none appears in connection with any other claim limitation, such as limitation [1.6].

First, the Petition identifies as possible examples of "signal information" the following: "antenna pointing direction information," "null/zero location information," "peak location information," "frequency information," and "timing information," Pet. at 62-63. As reflected by the Petition's citation, all of these are examples of signal information from the '235 Patent itself, not from Agee or any other prior art reference. The patent specification obviously cannot be used to render itself obvious.

Second, the Petition states that "Agee's 32 different OFDM tones are all separate transmissions at different frequencies and thus provide 'frequency information.'" Pet. at 63. But the Petition does not explain how Agee **determines** such frequency information, which is insufficient to show [1.4] or [1.5]. *Id.* The Petition does not identify any element in Agee that "determines" frequency information. *Id.* To support this sentence, the Petition only cites to the expert declaration at Ex. 1003 ¶528, which merely parrots the Petition. *Id.* Such conclusory

assertions should be entitled to little, if any, weight. *See supra* at IV.B. And in any event, there is no explanation in the Petition how “frequency information” is used to determine weighting values in limitation [1.6]. Pet. 64-69. The only reference to frequency at all in limitation [1.6] is in support of the argument, introduced in limitation [1.3], that each individual tone is a separate “transmission signal,” and that Agee performs its weight determination algorithm on a per-tone basis. Pet. at 67-68; *see id.* at 44 (contending that limitation [1.3] is met through “Agee’s use of OFDM which transmits (and receives) multiple different OFDM tones simultaneously”). The Petition’s theory is that the weighting value is determined the same way for each individual tone, but there is no contention that this involves frequency information.

In any event, the Petition does not allege or explain how such “frequency information” is “used” to compute weights in limitation [1.6]. Pet. 63-69. The Petition says that Agee discloses that the “combining weights” are “applied over as broad a range of tones (frequency channels k)” but cites nothing in Agee which indicates that weights are determined based on the specific frequency k . While a weight may be determined for each frequency, the numerical value of that frequency has no impact on the determination of the weight in Agee. Agee’s alleged disclosure that weights are computed for the entire OFDM symbol comprising 32 tones does not show that the value of the frequency has any impact on the determined weights.

The Petition does not clearly articulate any theory regarding frequency values and identifies no support in Agee that frequencies themselves are used in any way to calculate weights. Pet. 63-69.

Neither is there any suggestion, much less showing, that Agee discloses any determination of per-tone weighting values based on the overall number of tones, which is fixed at 32, in the Petition's own theory. And if "32" is the signal information in the Petition's theory, the Petition does not and cannot plausibly show that Agee discloses a *determination* of this value as claimed, nor how there could be a determination of "different" second signal information in [1.5] where, as here, every signal in the Petition's invalidity theory of Agee with Butler is an OFDM signal comprising the same number of tones (32 tones).

Third, the Petition attempts to map "signal information" as "timing information" by pointing to a "observed timing offset." Pet. at 63. There is no explanation or support for this theory. The Petition apparently references its discussion at 52-54, which does not mention any "timing information" as described in the '235 Patent, and instead discusses the detection of pilot signals. And "timing information" appears nowhere else in the Petition, such as in [1.6].

Fourth, the Petition identifies "pseudodelays" as "node authentication information." Pet. at 63. There is no explanation or support for this apparent non sequitur, except for references that pseudodelays are "unique to each transmit note,"

e.g. Pet. at 52. “Node authentication information” appears nowhere else in the Petition, and “pseudodelays” are not even mentioned in connection with limitations 1.6 or 1.7.

Fifth, the Petition alleges that there are “peaks” in “observed pseudodelays” which are “peak location information.” Pet. at 63. The Petition contains no discussion of the supposed detection of “peaks” in Agee to support this theory, or any explanation of what information in Agee is contended to meet the limitation. Rather, the Petition merely quotes the phrases “peak location information” and “null/zero location information,” neither of which appears in Agee, and neither of which appears anywhere else in the Petition.

Sixth, the Petition identifies “azimuth and elevation” and “link quality statistics.” Pet. at 63: The Petition again provides no explanation why these words relate in any way to the '235 Patent claims. “Azimuth” and “elevation” appear nowhere else in the Petition; “link quality statistics” appears in unexplained quotations, but not for limitations 1.6 or 1.7.

Thus, the Petition has presented no invalidity theory where “first signal information” and “second signal information” in [1.4] or [1.5] used to determine the weighting values in [1.6]. The Petition thus cannot succeed on the merits.

E. The Petition's Deficiencies for Claim 1 Apply to All Grounds and All Challenged Claims

As discussed above, the Petition fails to demonstrate a reasonable likelihood to succeed with respect to at least claim elements [1.3]-[1.6]. The same deficiencies apply to all challenged claims. Patent Owner notes that these claim elements from claim 1 are also elements of the other challenged independent claims from Ground 1 of the Petition. Further, the Petition's theories for the other challenged claims do nothing more than incorporate by reference to the Petition's theories for claim 1. Pet. at 76 (claim [8.1]-[8.4] incorporating by reference to claim 1 for these claim elements), 80 (claim 15 incorporating by reference to claim 1 for these claim elements). Thus, the Board need only evaluate the flaws in the Petition's arguments for limitations [1.3]-[1.6] in order to deny institution on all challenged claims. The Petition's theories for the dependent claims likewise rely only on its theories for independent claim 1 to allege that the elements of claim 1 are met and contain no additional theories for claim 1. Accordingly, the Petition fails to show that any dependent claim is unpatentable (under any ground) for the same reasons that it fails to show that any independent claim is unpatentable.

V. INSTITUTION SHOULD BE DENIED UNDER THE FINTIV FACTORS

35 U.S.C. § 314(a) gives the Board discretion to deny institution because of efficiency considerations stemming from parallel proceedings on the same patent. *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential, designated May 7, 2019) (“*NHK Spring*”). The PTAB recently promulgated six factors for determining whether discretionary denial due to efficiency considerations relating to parallel proceedings is appropriate (the “*Fintiv* factors”):

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Apple Inc., v. Fintiv, Inc., IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential, designated May 5, 2020) (“*Fintiv Order*”) at 6; *Apple Inc., v. Fintiv, Inc.*, IPR2020-00019, Paper 15 (PTAB May 13, 2020) (order denying institution)

(informative, designated July 13, 2020) (*"Fintiv ID"*) at 7–8. Here, all six *Fintiv* factors weigh against institution.

A. EDTex Parallel Proceedings

The Petition identifies the following three related litigations involving the '235 patent (Pet. at 90-91) that are pending in the Eastern District of Texas:

- XR Communications LLC v. *AT&T Services Inc.; AT&T Mobility LLC; and AT&T Corp.*; E.D. Tex., No. 2:23-cv-00202-JRG-RSP (*"AT&T case"*).
- *XR Communications LLC v. Verizon Communications, Inc. et al.*, E.D. Tex., Case No. 2:23-cv-00203-JRG-RSP (*"Verizon case"*);
- *XR Communications LLC v. T-Mobile USA, Inc.*, E.D. Tex., Case No. 2:23-cv-00204-JRG-RSP (*"T-Mobile case"*);

All three cases were filed on May 8, 2023. *See AT&T case*, Dkt. 1 (Complaint); *Verizon case*, Dkt. 1 (Complaint); *T-Mobile case*, Dkt. 1 (Complaint). *AT&T* was served with the complaint on May 12, 2023. *AT&T case*, Dkt. Nos. 5-6 (Proofs of Service). *Verizon* was served with the complaint on May 10, 2023. *Verizon case*, Dkt Nos. 5-6 (Proofs of Service). *T-Mobile* was served with the complaint on May 9, 2023. *T-Mobile case*, Dkt. 5 (Application for Extension of Time, Noting Date of Service of Summons).

On June 13, 2023, all three cases were consolidated for pre-trial purposes, with the *AT&T case* as the "lead" case and the *Verizon* and *T-Mobile* cases as the

“member” cases. See *AT&T* case, Dkt. 19 (Consolidation Order). Accordingly, the following discussion and citations to the schedule of the *AT&T* case should be understood to apply to all three consolidated cases.

On August 25, 2023, the Eastern District of Texas entered a consolidated Docket Control Order (DCO) for the *AT&T* case. *AT&T* case, Dkt. 40 (attached as Ex. 2001). The DCO provides the following dates (*id.* at 1–4):

- May 1 to June 28, 2024: Claim construction disclosures and completion of claim construction discovery;
- July 15, 2024: Deadline to substantially complete document production;
- July 15, 2024: Start of claim construction briefing and deadline for opening claim construction brief and technical tutorials;
- August 21, 2024: Completion of claim construction briefing;
- September 11, 2024: Claim construction hearing;
- October 4, 2024: Deadline to complete fact discovery;
- October 11, 2024: Opening expert reports;
- November 8, 2024: Rebuttal expert reports;
- November 18, 2024: Deadline to complete expert discovery;

- November 25, 2024 to January 21, 2025: Dispositive motions, *Daubert* motions, pretrial disclosures, and submission of joint pretrial order, joint proposed jury instructions, etc.;
- January 27, 2025: Pretrial conference; and
- March 3, 2025: Jury selection and trial

Meanwhile, this Petition was filed on March 6, 2024. This was nearly eight months after Petitioners² were served with a complaint in each of the *AT&T*, *Verizon*, and *T-Mobile* cases. Patent Owner's preliminary response is due on July 16, 2024. The Board's institution decision in this IPR is expected by October 16, 2024. The Board's final written decision is expected a year later, by October 16, 2025.

B. The *Fintiv* Factors weigh strongly against institution.

As discussed further below, the *Fintiv* factors weigh strongly against institution. The facts and circumstances here present a strong case for discretionary denial, including under the Director's June 2022 memorandum on interim procedure for discretionary denial. Here, the district court trial is set to occur ***seven months*** before the FWD deadline. This is because Petitioners delayed in filing the Petition, waiting nearly eight after being served with a complaint. Further, substantial work

² As used herein, "Petitioners" includes the defendants in the related cases: AT&T Services Inc., AT&T Mobility LLC, AT&T Corporation, T-Mobile USA, Inc., and Cellco Partnership d/b/a Verizon Wireless AT&T Services, Inc. Notably, the Petition identifies these defendants as real-parties-in-interest. See Pet. at 90.

on the '235 patent has already been done by the parties and district court, and even more work will be done by the institution deadline. By then, the parties will have completed claim construction and fact discovery and opening expert reports would be served. Further, Petitioners are relying on the same prior art and invalidity grounds at issue in the district court. To date, Petitioners have not provided a *Sotera* stipulation that would ameliorate the risk of wasting resources or inconsistent outcomes under *Fintiv* factor 4.

C. Factor 1 weighs against institution, as there is no stay in the district court now and a stay is unlikely to be granted.

Factor 1 concerns whether the district court granted a stay or evidence exists that one may be granted if a proceeding is instituted. *Fintiv Order* at 6; *Fintiv ID* at 12. This factor weighs against institution.

Petitioners only very recently moved for a stay in the district court cases on July 9, 2024. See *AT&T* case, Dkt. 78 (Motion to Stay). But there is little or no indication that the motion will be granted. Indeed, the motion to stay was based on the following three non-instituted or denied petitions for IPR:

- IPR2024-00314 on the '369 patent filed on January 5, 2024. The Board denied institution of this IPR on July 15, 2024.
- IPR2024-00613 (this IPR) on the '235 patent filed on March 6, 2024. The institution decision is not expected until October 2024.

- IPR2024-00868 on the '511 patent filed on May 8, 2024. The institution decision is not expected until approximately December 2024.

The Eastern District of Texas rarely grants stays based on non-instituted IPRs. Here, at least the asserted '369 and '939 patents will not be subject to any IPRs. As to the '235 and '511 patents, their institution decisions will not arrive until October and December 2024. At that point, the EDTex cases will be in a late stage, after the completion of fact and expert discovery (by October and November 2024). And it will be only a few months before the scheduled jury trial (on March 3, 2025). In these circumstances, it is extremely unlikely that the Eastern District of Texas would grant a stay pending IPR (especially since those IPRs would at most apply to two of four asserted patents).

Indeed, the district court long ago issued a DCO, and the parties have been complying with those orders, including exchanging infringement contentions, invalidity contentions, terms for construction, and meeting and conferring as part of the *Markman* process. At the time of the filing of this POPR, Patent Owner has filed its opening claim construction brief in EDTex.

Because there is no evidence the EDTex case will be stayed (and at most speculative arguments it might be), Factor 1 weighs against institution.

D. Factor 2 weighs against institution, as trial in the district court is scheduled to be completed seven months before the FWD.

Factor 2 relates to proximity of the court's trial date to the Board's projected statutory deadline for a final written decision. *Fintiv Order* at 9; *Fintiv ID* at 12. The statutory deadline for the final written decision (FWD) for this IPR Petition would be October 16, 2025. Meanwhile, trial in the district court case is set to begin on March 3, 2025. This is more than **seven** months before the FWD would be due in this IPR proceeding (should it be instituted)

Under Factor 2, this weighs strongly against institution. *See Fintiv Order* at 9 (“If the court's trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.”). As *NHK Spring* explained, one of the primary objectives of the AIA was “to provide an effective and efficient **alternative**” to parallel litigation. *NHK Spring* at 19–20 (quoting *General Plastic* at 16–17) (emphasis added).

The Petition's argument regarding Factor 2 is unsupported and speculative. Even assuming (for the sake of argument) that trial was postponed by a couple of months, it would still occur many months before the FWD decision in this IPR. Under the objective facts and circumstances of this case, it is extremely unlikely that trial would be postponed by eight months or more, which is the only way the district

court trial would occur later. Not to mention that the case is unlikely to be stayed, as discussed above, which ensures duplicative work up until trial.

Here, this IPR cannot be an alternative to a trial in the district court set to occur before the FWD deadline. This alone is reason for the Board to exercise its discretion to deny institution. *Fintiv ID* at 13; *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00158, Paper 16 at 9 (May 20, 2020).

E. Factor 3 weighs strongly against institution, as construction and fact discovery will be completed, and opening expert reports would be served, before the date the institution decision is due.

Factor 3 relates to investment in the parallel proceeding by the court and the parties. *Fintiv Order* at 9; *Fintiv ID* at 14. Here, the parties and the district court have already (and will continue to) invest substantial effort and resources.

Importantly, this factor is judged from the date of the institution decision, which is expected to be by October 16, 2024. *See Fintiv Order* at 9 (considering “the amount and type of work already completed in the parallel litigation by the court and the parties *at the time of the institution decision*”) (emphasis added).

Here the parties’ have already invested substantial work by the time of this POPR (including serving infringement and invalidity contentions on the ’235 patent and beginning claim construction briefing). And that investment will only escalate

in the next few months before the institution decision, with the following deadlines occurring during that time:

- July 15, 2024: Deadline to substantially complete document production;
- July 15, 2024: Start of claim construction briefing and deadline for opening claim construction brief and technical tutorials;
- August 21, 2024: Completion of claim construction briefing;
- September 11, 2024: Claim construction hearing;
- October 4, 2024: Deadline to complete fact discovery;
- October 11, 2024: Opening expert reports;

Indeed, by the time of the institution decision, opening expert reports (on infringement, validity, and damages) would have already been served. This level of investment is greater than in many cases in which Factor 3 was found to favor discretionary denial. In *Fintiv*, for example, the Board noted for Factor 3 that “this factor weighs somewhat in favor of discretionary denial in this case.” *Fintiv ID* at 14. Here, Factor 3 weighs more heavily against institution because more work is likely to be expended by the time of the institution decision given the schedule of the district court case.

F. Petitioners' *Sand Revolution* stipulation for Factor 4 is insufficient.

Factor 4 relates to overlap between issues raised in the petition and in the parallel proceeding. *Fintiv Order* at 12; *Fintiv ID* at 13. Here, the same claims and claim construction standard are at issue in both proceedings, and there is substantial overlap in invalidity theories and prior art. Petitioners concede that there is currently complete overlap between the invalidity grounds for the challenged claims of the '235 patent and Petitioners' invalidity theories for those claims in district court. Despite this, Petitioners only make a limited *Sand Revolution* stipulation that they “will not pursue invalidity against the Challenged Claims in the district court using the specific combination of prior art references set forth in the grounds herein for establishing obviousness.” Pet. at 89.

This is insufficient because Petitioners have declined to make a *Sotera* stipulation against using the same prior art or invalidity grounds that it could have raised. And substantial risk of overlapping issues and inconsistent outcomes remain. Accordingly, Factor 4 is neutral or weighs slightly against discretionary denial.

G. Factor 5 weighs against institution, as Petitioners are Defendants in the parallel district court cases.

Factor 5 concerns whether the Petitioners and the Defendants in the parallel proceeding are the same parties. *Fintiv Order* at 13; *Fintiv ID* at 15. This factor weighs against institution because real-parties-in-interest AT&T, Verizon, and T-

Mobile are defendants in the respective district court cases. *See AT&T* case; *Verizon* case; *T-Mobile* case.

H. Factor 6 weighs in against institution.

Factor 6 relates to other circumstances that impact the Board's exercise of discretion. *Fintiv Order* at 14; *Fintiv ID* at 15. Here, Factor 6 supports discretionary denial. Having a FWD issue many months after the district court trial is procedurally unfair to Patent Owner. For example, if the claims are confirmed in FWD, Petitioners would be bound by IPR estoppel and not be able to assert any invalidity grounds it raised or could have raised. But having a district court trial before the IPR FWD would eliminate that benefit.

Further, Petitioners' arguments on the merits suffer from myriad fatal weaknesses, as discussed above. The Petition fails to present *any* coherent theory of invalidity that addresses the elements in limitations [1.3]-[1.6] in a consistent manner. *See supra* § IV. Thus, the Petition is not "particularly strong" and fails to establish a reasonable likelihood of success.

VI. CONCLUSION

For the foregoing reasons, institution should be denied.

Date: July 16, 2024

Respectfully submitted,

/ Reza Mirzaie /
Reza Mirzaie, Reg. No. 69,138

IPR2024-00613 ('235 PATENT)
PATENT OWNER PRELIMINARY RESPONSE

Philip X. Wang, Reg. No. 74,621
RUSS, AUGUST & KABAT
12424 Wilshire Blvd., 12th Fl.
Los Angeles, CA 90025
Tel.: 310-826-7474
pwang@raklaw.com
rmirzaie@raklaw.com
rak_vivato@raklaw.com

Counsel for Patent Owner

CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), I certify that there are 9,438 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

Date: July 16, 2024

/ Reza Mirzaie /
Philip X. Wang, Reg. No. 69,138
RUSS, AUGUST & KABAT

Counsel for Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(1), I certify that the above document was served on July 16, 2024 by filing this document through the Patent Trial and Appeal Case Tracking System as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

Patrick D. McPherson, Reg. No. 46,255
Kevin Anderson, Reg. No. 43,471
901 New York Ave., N.W., Suite 700 East
Washington, D.C. 20001
P: (202) 776-7800
F: (202) 776-7801
PDMcPherson@duanemorris.com
KPAnderson@duanemorris.com

Date: July 16, 2024

/ Reza Mirzaie /
Reza Mirzaie, Reg. No. 69,138
RUSS, AUGUST & KABAT

Counsel for Patent Owner