

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN HONDA MOTOR CO., INC.,
Petitioner,

v.

NEO WIRELESS LLC,
Patent Owner.

Case IPR2023-00791
Patent 10,075,941

PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST	
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2003	In re Neo Wireless, LLC Patent Litigation, 2:22-MD-03034-TGB, Joint Claim Construction Statement [Joint-CC-Statement]
2004	In re Neo Wireless, LLC Patent Litigation, 2:22-MD-03034-TGB, Exhibit A - Agreed Litigation Terms [Agreed-Lit.-Terms]
2005	In re Neo Wireless, LLC Patent Litigation, 2:22-MD-03034-TGB, Exhibit B - Disputed Litigation Terms [Disputed-Lit.-Terms]
2006	In re Neo Wireless, LLC Patent Litigation, 2:22-MD-03034-TGB, Notice of Stipulation Regarding Claim Construction [Stip-Re-CC]
2007	<i>Burst</i> , <u>Newton's Telecom Dictionary</u> , (16th ed. 2000) [Newton-Dictionary]
2008	<i>Burst</i> , <u>McGraw-Hill Dictionary of Scientific and Technical Terms</u> , (6th ed. 2002) [McGraw-Hill-Dictionary]
2009-2013	Reserved
2014	Apr. 19, 2019 Letter from Sen. Tillis & Sen. Coons to USPTO Director [Tillis-Coons Ltr.]

This Petition is a copycat petition seeking joinder to a case in which institution has already been granted. Patent Owner notes for the panel's convenience that the non-institution arguments in this Preliminary Response essentially repeat the non-institution arguments that were raised in the already-instituted target case. The present Response is nonetheless being filed to protect Patent Owner's rights.

I. INTRODUCTION

This is the fourth petition that has been filed for inter partes review of claims 1–14 of the '941 patent. Like the petitioner of the first petition, in this petition Petitioner has not met its burden to show a reasonable likelihood of prevailing at trial on the merits as to any of the claims (1–14) based on any ground in the Petition. Focusing on the elements of claim 1, Patent Owner explains in Sections III and IV why Petitioner has not met its burden of prevailing on any challenged claim under any of the three petitioned Grounds (1–3). Both these sections are supported by the expert testimony of William Alberth (Ex. 2001), whose testimony was relied upon in the decision not to institute the prior petition. Finally, Section V explains why the fact that this fourth Petition, which follows a rejected obviousness challenge in the first petition, and improperly relies upon the denial of the first petition as a hindsight roadmap for its own grounds, further supports a

finding that Petitioner has not met its burden to show a reasonable likelihood of showing obviousness.

For the reasons summarized above and detailed below, the institution of a trial based on the Petition should be denied under 35 U.S.C. § 314 and Office and Federal Circuit precedent.

II. CLAIM CONSTRUCTION

The Consolidated Trial Practice Guide notes that in construing the claims “the Board may take into consideration statements made by a patent owner or petitioner about claim scope,” and that claim construction developments in district court may be taken into account in this proceeding when made of record by the parties. Consolidated Trial Practice Guide, 46-48. While Petitioner proposes no construction beyond plain meaning in this proceeding (Pet., 15) the story is quite different in related multi-district litigation, *In re NEO Wireless, LLC Patent Litigation*. There the parties have proposed numerous formal constructions of claim terms of the patent-at-issue in this case, though Petitioner is attempting to dissociate itself from the claim construction positions which it participated in developing.

As noted in the Petition and the parties’ mandatory notices, prior to the filing of the Petition, Patent Owner initiated district court proceedings enforcing the patent-at-issue against several alleged infringers, including Petitioner. *See* Pet., 3-

4. Petitioner is among nine defendants who submitted terms for construction pursuant to the Court's scheduling order. *See* Ex. 2003 [Joint-CC-Statement] 1, 5-6. Petitioner collaborated with its co-defendants and participated in the meet and confer negotiations with respect to these terms. When the parties submitted the constructions to the Court, Petitioner included footnotes suggesting that it "do[es] not take a position on the constructions." *See* Ex. 2004 [Agreed-Lit.-Terms] 1, n. 1 ("Volkswagen Grp. of Am., Inc. and Volkswagen Grp. of Am. Chattanooga Operations, LLC, do not take a position on the proposed constructions for any of the Agreed Claim Terms."), 2005 [Disputed-Lit-Terms] 1, n. 1 ("Volkswagen Grp. of Am., Inc. and Volkswagen Grp. of Am. Chattanooga Operations, LLC, do not take a position on the proposed constructions for any of the Disputed Claim Terms.").

Patent Owner disputed Petitioner's last-minute attempt to disavow its fellow Defendants' proposed claim constructions that it helped develop. *Id.*, 1 n.2. After meeting and conferring, Petitioner stipulated in the District Court that it waives its rights to challenge those constructions, in that Court or in this proceeding, including on appeal. Ex. 2006 [Stip-Re-CC] 1-2. In effect, Petitioner has acquiesced to the claim constructions put forth and agreed to by its co-defendants. Moreover, Petitioner's gameplaying cannot change the fact that its fellow accused infringers, which include FCA US LLC, Mercedes-Benz USA LLC, Tesla Inc.,

Ford Motor Co., Nissan North America Inc., Toyota North America Inc., General Motors Co., and American Honda Motor Co., assert in open court that these are the correct constructions of these terms of the patent's claims-at-issue.

With respect to the '941 patent, the parties agreed that the preamble of independent claims 8 and 13 are limiting and should be given their plain and ordinary meaning. Ex. 2004 [Agreed-Lit.-Terms], 3-4. The parties identified the following claim construction disputes with respect to the '941 patent:

Claim Language	Proposed Construction of Plaintiff (Patent Owner)	Proposed Construction of Defendants
"the antenna transmission scheme comprising a transmission diversity scheme or a multiple-input multiple-output (MIMO) scheme"	"the antenna transmission scheme is capable of comprising either a MIMO scheme or a transmission diversity scheme other than MIMO. To avoid any doubt, this requires supporting both MIMO and non-MIMO transmission diversity systems."	"the mobile-station specific transmission parameters alternatively indicate an antenna transmission scheme that comprises a MIMO scheme or an antenna transmission scheme comprising a transmission diversity scheme other than MIMO, wherein the antenna transmission scheme is capable of comprising either a MIMO scheme or a transmission diversity scheme other than MIMO. To avoid any doubt, this requires supporting both MIMO and non-MIMO transmission diversity systems."

Claim Language	Proposed Construction of Plaintiff (Patent Owner)	Proposed Construction of Defendants
“the mobile station-specific transmission parameters indicate...a corresponding subchannel configuration...the corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers in the frequency domain”	“the mobile station-specific transmission parameters indicate...a corresponding subchannel configuration . . the corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers in the frequency domain, wherein the subchannel configuration is capable of comprising either localized or distributed subcarriers. To avoid any doubt, this requires supporting both localized and distributed subchannel configurations.”	“the mobile station-specific transmission parameter alternatively indicates either distributed subcarriers or localized subcarriers in the frequency domain as subchannel configurations”

Ex. 2005 [Disputed-Lit-Terms] 4-5.

III. PETITIONER FAILS TO SHOW A REASONABLE LIKELIHOOD THAT GROUND 1 WILL SUCCEED (802.16A & HEATH).

Ground 1 cannot support institution for at least the reasons described below.

A. Petitioner Fails To Show That 802.16a Has A “Control Message” That Contains “Transmission Parameters *Allocated To The Mobile Station...By The Base Station*” (All Claims).

The ’941 patent’s challenged claims recite a “control message” with “transmission parameters allocated to the mobile station.” *See* Ex. 1001 [’941 Patent] cls. 1, 6; *see also* cls. 8, 13 (both claiming “the control message contains

transmission parameters specific to the mobile station for a subsequent transmission by the serving base station”).¹ The Petition fails to show a reasonable likelihood that these limitations are disclosed or rendered obvious in at least Ground 1.

Ground 1 is based on a proposed combination of the 802.16a² and Heath references. Pet., 7. For purposes of alleging obviousness as to this limitation in Ground 1, Petitioner does not argue that these limitations are rendered obvious by 802.16a or Heath, alone or in combination, if they are not disclosed in 802.16a. Rather, Petitioner argues only that 802.16a “discloses” a “control message” with these claimed transmission parameters. See Pet., 40 (“802.16a *discloses* transmitting a control message to a mobile station over a control channel.”), 45

¹ The Petition’s arguments that “transmission parameters *specific to* the mobile station” are disclosed in independent claims 8 and 13 only reference its arguments for “transmission parameters *allocated to* the mobile station” as recited in independent claims 1 and 6. Pet., 62-66 (emphasis added). Thus, the Petition treats these limitations identically in claims 1, 6, 8, and 13. Solely for purposes of this paper, Patent Owner does the same.

² Here, as in the Petition, “802.16a” refers to the standard defined in documents 802.16a-2001 [Ex. 1005] and 802.16a-2003 [Ex. 1006]. See Pet., 16.

(“802.16a *discloses* that the FCH (‘control message’) contains transmission parameters allocated to the SS (‘mobile station’)”); *see also id.*, 62-66 (relying on the analysis of elements [1B], [1C], and [1E] for the corresponding of elements claims, 8, and 13).³ 802.16a, however, is not shown to be even reasonably likely to disclose this limitation, at least because the alleged “transmission parameters” are not “allocated to the mobile station” as claimed.

The 802.16a reference discloses a frame control header (“FCH”) that contains a DL-MAP message. Ex. 1006 [802.16a-2003] 184 (“The FCH is transmitted at the beginning of each frame. It is a data structure that contains the DL-MAP message”). The Petition offers just one mapping of 802.16a as to this limitation: that 802.16a’s FCH is allegedly the claimed “control message,” and the DL-MAP within the FCH includes the claimed “transmission parameters allocated to the mobile station.” Pet., 40-41 (“In particular, the downlink from the BS ‘includes the transmission of a FCH, which is transmitted in the most robust burst profile of the system followed by transmission using burst profiles as defined in the FCH.’”); *id.*, 46 (“DL-Map’s parameters are then used by the BS for a subsequent transmission”).

³All emphasis added unless otherwise noted.

Contrary to Petitioner’s theory, however, there is no reasonable likelihood shown that 802.16a’s DL-MAP has transmission parameters allocated to individual alleged “mobile stations.” Instead, the DL-MAP assigns 802.16a’s alleged “antenna transmission schemes” and “subchannel configurations”—the alleged claimed “transmission parameters”—to “bursts.” Thus, the alleged “transmission parameters” in the DL-MAP are, at most, allocated to bursts, not to any particular alleged “mobile station.” 802.16a simply never allocates parameters to the individual alleged “mobile stations.” Moreover, the alleged “control message” (the FCH) does not even allocate the bursts to the alleged “mobile stations.” Instead, *each* alleged “mobile station” reads *all* the bursts. For this reason, FCH is not a “control message [that] contains transmission parameters allocated [or specific to] the mobile station,” as shown in more detail below in Sections III.A.1–III.B.2.

1. 802.16a’s “Transmission Parameters” Are At Most Allocated To Download Bursts, Not “To The Mobile Station” As Claimed.

As noted above, the Petition reads the “FCH” of 802.16a as the alleged “control message” recited in the claims. This section will assume for the sake of argument that that contention is correct.

The claims recite that the claimed “control message” includes “transmission parameters allocated to the mobile station...by the base station.” The Petition identifies five items within the DL-MAP as the alleged “transmission parameters”

within that control message as claimed. Pet., 45 (“Specifically, DL-MAP specifies a burst profile (DIUC value), OFDM Symbol offset, subchannel offset, number of OFDM symbols, and number of subchannels for a specific DL burst.”). These five items are shown in the figure below:

Table 116bp—OFDMA DL-MAP_Information_Element format

Syntax	Size	Notes
DL-MAP_Information_Element() {		
DIUC	4 bits	
if (UIUC == 15) {		
Extended DIUC dependent IE	variable	AAS_DL_IE()
} else {		
OFDM Symbol offset	10 bits	
Subchannel offset	6 bits	
No. OFDM Symbols	10 bits	
No. Subchannels	6 bits	
}		
}		

Ex. 1006 [802.16a-2003] 188. None of these alleged parameters is shown to even possibly be “allocated” or directly linked to any particular alleged “mobile station.” Rather, all of them instead define the characteristics of a “burst.”

“DIUC” is expressly described by 802.16a as a “Downlink interval usage code used *for the burst*.” *Id.* Similarly, “OFDM Symbol Offset” is defined as “The offset of the OFDM symbol in which *the burst starts*.” *Id.* “Subchannel offset” is defined as “The lowest OFDM subchannel used for *carrying the burst*.”

Id. “No. OFDM symbols” is “The number of OFDM symbols that are used (fully or partially) to carry the DL PHY **Burst**.” *Id.* “No. of subchannels” is defined as “The number of OFDM subchannels with subsequent indexes used to **carry the burst**.” *Id.*

The Petitioner never asserts that the downlink burst itself is the “mobile station” but rather identifies 802.16a’s “SSs” as the alleged “mobile stations.” Pet., 38. This is not surprising, because 802.16a’s bursts are not even arguably “mobile stations.” “A burst, as used in the telecommunications field, describes a unit of transmitted data.” Ex. 2001 [Alberth Decl.] ¶45; *citing* Ex. 2007 [Newton-Dictionary] 126 (“Burst: In data communication, a sequence of signals, noise, or interlace counted as a unit in accordance with some specific criterion or measure”); Ex. 2008 [McGraw-Hill-Dictionary] 301 (“A group of bits of characters that are transmitted together as a unit”). Consistent with this ordinary meaning, 802.16a expressly defines a “burst profile” as a “[s]et of parameters that describe the uplink or downlink transmission properties **associated with an interval usage code**.” Ex. 1005 [802.16a-2001] 5.

There is nothing in the FCH, and certainly nothing cited by Petitioner, that links the parameters in the DL-MAP (the alleged “transmission parameters

allocated to the mobile station”) to any particular mobile station. As William Alberth⁴ explains:

Dr. Wilson has not cited to any evidence in the DL-MAP, or anywhere else in the FCH, 802.16a generally, or anywhere else that links 802.16a’s bursts to particular SSs, which she asserts to be the “mobile stations” of the claims. Each element within the DL-MAP is tied to a particular burst rather than a SS. Ex. 1006 [802.16a-2003] 188. As such, I am unaware of any basis on which one could possibly conclude that, from the point of view of an ordinary artisan at the time of the invention and in light of the ’941 patent’s disclosure, the FCH described in 802.16a could be a “control message [that] contains transmission parameters *allocated to the mobile station*” as recited in the claims. See Ex. 1001 [’941 Patent] cls. 1, 6.

⁴ William Alberth is a proven and credible expert in this field. Ex. 2002 (*curriculum vitae* of Mr. Alberth). In the IPR based on the prior petition challenging these claims, the decision denying review repeatedly found persuasive and credited Mr. Alberth’s testimony in rejecting the merits of that petition’s grounds. See *Dell Computer, Inc. v. Neo Wireless LLC*, IPR2021-01468, Paper 12 (Mar. 14, 2022), at, e.g., 31 (“we find persuasive the declaration testimony of Mr. Alberth”), 32-33 (“we credit the expert declaration testimony of Mr. Alberth”). 45 (“Here, we find persuasive the declaration testimony of Patent Owner’s expert, Mr. Alberth”). The Board should again do the same here.

Ex. 2001 [Alberth Decl.] ¶46. Rather, the DL-MAP instead specifies the transmission parameters for a set of preset downlink bursts irrespective of which SSs end up using those bursts. *See id.*, ¶ 47.

2. The “Transmission Parameters” of 802.16a’s Bursts Need Not Be “Allocated To The Mobile Station” By A “Control Message” Because 802.16a’s SSs Read *All* The Bursts.

802.16a has a very different method of allocating transmission parameters than the claimed invention – one that does not involve the FCH or any other “control message.” As described above, rather than allocating the transmission parameters to individual SSs, 802.16a uses those transmission parameters to configure a set of “bursts.” How, then, does 802.16a allocate bursts to the SSs, i.e., how do individual SSs know which bursts they should read and which they should ignore? The answer illustrates how different 802.16a is from the claimed invention. 802.16a does not even allocate bursts to SSs. Instead, 802.16a teaches that *each* SS, will attempt to read *all* the download bursts.

As 802.16a explains:

Each SS shall attempt to receive all portions of the downlink except for those bursts whose burst profile is either not implemented by the SS or is less robust than the SS’s current operational downlink burst profile.

Ex. 1005 [2001-802.16a] 217. To be sure, an individual SS in 802.16a’s system may still need to know which bursts are directed at it and which are directed at its

neighbors. But unlike the claimed invention, 802.16a addresses this issue without the involvement of a separate “control message” as claimed. Instead, 802.16a includes, in the MAC header of each data burst, an address indicating for which SS the burst is intended. As 802.16a explains,

Each SS receives and decodes the control information of the downlink and *looks for MAC headers indicating data for that SS* in the remainder of the downlink subframe.

Id., 220; *see also id.*, 24 (“stations check the address in the received messages and retain only those addressed to them”). Thus, while 802.16a’s alleged “control message” specifies the alleged “transmission parameters” for bursts, that control message does not even remotely relate those “transmission parameters” to the alleged “mobile stations.”

This is plainly different from the ’941 patent, which sends a “control message” having “transmission parameters allocated to an individual mobile station.” As Mr. Alberth summarizes these differences between 802.16a and the claimed invention:

802.16a has a quite different method of allocating transmission parameters than the one claimed in the ’941 patent. The claims require “the control message contains transmission parameters allocated to the mobile station.” Ex. 1001 [’941 Patent] cls. 1, 6. In contrast, 802.16a uses the DL-MAP within the FCH to allocate

transmission parameters to a set of preset downlink bursts rather directly to the supposed “mobile stations”. *See* Ex. 1006 [802.16a-2003] 188. Each SS (which Dr. Wilson asserts constitutes the claimed “mobile station”) using 802.16a must read all downlink bursts it is able to read. *See* Ex. 1005 [2001-802.16a] 217. 802.16a states that, “[e]ach SS receives and decodes the control information of the downlink and looks for MAC headers indicating data for that SS in the remainder of the downlink subframe.” *See id.*, 220. Since this teaches that the SS should look at multiple MAC headers in the “remainder of the downlink subframe,” a POSITA would recognize that an individual SS looks within each burst to see whether the burst has its address. *See id.*, 24, 220. The SS then discards the data in the burst if the MAC header is addressed to a different SS. *See id.*, 24. Thus, in 802.16a the transmission parameters (such as the antenna transmission scheme or subchannel configuration) are, in my opinion, allocated by downlink burst and thus not “allocated to the mobile station” as required by the claims. *See* Ex. 1001 [’941 Patent] cls. 1, 6. Moreover, to the extent that the data in the bursts are assigned to individual SSs, this assignment is done without the involvement of FCH, the supposed “control message.”

Ex. 2001 [Alberth Decl.] ¶ 47.

The Petition fails to overcome, or even substantially address, these differences between the claimed invention and 802.16a. Thus, the Petition fails to show a reasonable likelihood that 802.16a discloses “the control message contains

transmission parameters allocated to the mobile station” as required by the claims.

This is, by itself, sufficient reason to find that Ground 1 cannot be a basis for institution.

B. Petitioner Fails To Show That 802.16a Teaches Or Renders Obvious “*Mobile Station-Specific* Transmission Parameters” (All Claims).

The claims further recite that the “transmission parameters” in the control message that are “allocated to the mobile station” or “specific to the mobile station” must be “mobile station-specific.” Ex. 1001 [’941 Patent] cl. 1, 6, 8, 13. The Petition again relies on DL-MAP for the “mobile station-specific transmission parameters.” Pet., 49 (for element 1[D] stating that “DL-MAP indicates the antenna transmission scheme”); *id.*, 51 (relying on DL-MAP for element [1E]’s “mobile station-specific transmission parameter” that indicates “corresponding subchannel configuration.”). The Petition fails to show, however, that the parameters in DL-MAP are “mobile station-specific” as claimed.

1. The “Mobile Station-Specific Transmission Parameters” Tailored To The Individual Mobile Station’s Operating Conditions Are Distinguished From The Prior Art’s Base Station-Specific Transmission Parameters.

The ’941 patent is entitled “Methods And Apparatus For Multi-Carrier Communication Systems With *Adaptive* Transmission And Feedback” (capitalization changed). The specification of the ’941 patent describes various

schemes for adapting transmission parameters, including antenna techniques and subchannel configuration, to take into account, for example, channel conditions. According to certain embodiments, “[t]he *adaptation process adjusts* the allocated modulation schemes, coding rates, pilot patterns, power levels, spatial processing schemes, *subchannel configurations*, etc. *in accordance with the transmission channel state and condition*, for improving system performance and/or capacity.”

Ex. 1001 [’941 Patent] 3:66-4:4. “Other factors that can be used in the *adaptation process* include modulation constellation arrangements, *transmitter antenna techniques*, and *subchannel configuration in a multi-carrier system*.” *Id.* 6:50-53. “Given the fact that different configurations of subchannel compositions are suitable for different scenarios or user profiles, *subchannel configuration is included in the transmission adaptation process*.” *Id.*, 7:10-13. “In one embodiment the transmitter or receiver uses any of several known predictive algorithms to *predict current or future channel conditions* based on previous channel measurements.... The output of the predictive algorithm is then used by the *adaption process to select the best possible scheme for the current transmission*.” *Id.*, 7:50-58.

The ’941 patent contrasts this adaptation in the invention with prior systems in which, for example, parameters such as the subchannel configuration were fixed and could not be adapted to individual mobile stations. *See id.*, 2:4-7 (“The

subchannel configuration is normally defined and fixed in an operation, and it is usually not considered an adjustable function of the system to be adapted to the user profile and/or operational environment.”).

These adaptation features of the invention are reflected in the claim language, including the recited “mobile station-specific transmission parameters.” Since the patent teaches that transmission parameters need to be adjusted based on operating conditions of the individual mobile stations, such as the state and condition of the transmission channel, a POSITA would understand the claimed “mobile station-specific transmission parameters” to relate to operating conditions specific to each individual mobile station (such as the station’s channel capabilities, data rate demand, or other operating conditions). As Mr. Alberth explains:

The ’941 patent contains many extended discussions of how “[t]he *adaptation process adjusts* the allocated modulation schemes, coding rates, pilot patterns, power levels, spatial processing schemes, subchannel configurations, etc. *in accordance with the transmission channel state and condition*, for improving system performance and/or capacity.” Ex. 1001 [’941 Patent] 3:66-4:4; *see also id.*, 6:50-53; 7:10-13; 7:50-58. Differing channel conditions is the primary exemplary reason disclosed in the patent for adapting transmission parameters to be specific to each mobile station. *Id.*, 2:33-41. It teaches that this provides many advantages, including “better

throughput.” *Id.*, 4:62-64. A POSITA would understand that other advantages include better efficiency when there are a small number of users in the system with widely different capabilities or a wide distribution of potential channel conditions. Adapting to individual operating conditions is especially advantageous when there is a wide distribution of mobile station capabilities or other conditions that do not occur in a consistent or predictable way. Thus, a POSITA reading the claims would understand that adaptation to mobile station-specific operating conditions is a primary reason for the recited “mobile station-specific transmission parameters.” *Id.*, cls. 1, 6, 8, 13.

Ex. 2001 [Alberth Decl.] ¶ 48. Thus, proving that 802.16a discloses “mobile station-specific transmission parameters” in its alleged “control message” involves demonstrating that 802.16a’s alleged transmission parameters are specific to a particular mobile station; for example, based on its associated operating conditions.

However, 802.16a’s teachings have not been shown to even permit, let alone disclose, transmission parameters in a control message that are adapted to specific mobile stations’ operating conditions, as explained below.

2. 802.16a Does Not Teach “Transmission Parameters” Within Its DL-MAP that Are “Mobile Station-Specific” As Claimed.

The structure of 802.16a has no disclosure that its alleged “transmission parameters” are “mobile station-specific” as claimed. First, as already noted above, 802.16a’s alleged “transmission parameters” are not even “allocated to” or “specific to” particular SSs (the alleged “mobile stations”), but rather to bursts.

See supra Section II.A. 802.16a never discloses how the alleged “transmission parameters” for each burst are determined, and the only option it discloses for a SS that needs different transmission parameters is to switch bursts. Even assuming, *arguendo*, that 802.16a were to attempt to tailor the transmission parameters of each burst to the conditions of individual SSs, its burst-based structure lacks the flexibility that would facilitate doing so. For example, it is unable to allocate multiple antenna schemes within any particular frame. Each of these points is explained in further detail below.

As explained above, the DL-MAP element in 802.16a’s FCH defines the alleged “transmission parameters” for multiple preset bursts. *See* Section III.A *supra*. Petitioner has provided no evidence as to how the alleged “transmission parameters” for individual bursts are determined. The 802.16a reference does not directly address this issue, but merely states that if the transmission parameters for a SS’s burst is not appropriate then the SS requests a different burst:

To reduce the volume of uplink traffic, ***the SS monitors the carrier to noise and interference ratio*** $[C/(N+I)]$ and compares the average value against the allowed range of operation. This region is bounded by threshold levels. If the received $C/(N+I)$ goes outside of the allowed operating region, ***the SS requests a change to a new burst profile*** using one of three methods.... ***The SS applies an algorithm to determine its optimal burst profile*** in accordance with the threshold

parameters established in the DCD message in accordance with Figure 59.

Ex. 1005 [200-802.16a] 115. 802.16a nowhere teaches that the alleged “transmission parameters” for a particular burst can even *be* changed. And it certainly does not teach that those parameters *should be* changed to account for the conditions of any particular SS. In contrast with the claimed invention, in which “transmission parameters” are customized to be “mobile station-specific” as recited in the claims, 802.16a teaches a fixed set of bursts – each with its own alleged “transmission parameters.” From these bursts the alleged “mobile stations” choose the ones that roughly satisfy its desired “noise and interference ratio.” *See id.*

As Mr. Alberth explains:

In 802.16a the “transmission parameters” identified by Dr. Wilson (such as the start and end of a burst, the selection of STC or AAS-enabled traffic, and the selection of distributed-carrier or adjacent-carrier) are allocated by downlink burst. Ex. 1005 [2001-802.16a] 115. Dr. Wilson has not identified any evidence that they can be adapted to “mobile station-specific operating conditions.” Instead, the 802.16a reference predefines bursts with certain properties and then allows the SSs to switch between bursts if the particular bursts they are assigned do not provide the appropriate channel characteristics (as embodied in the carrier to noise and interference ratio). *Id.* Thus, a POSITA would understand that the

802.16a reference does not describe “mobile station-specific transmission parameters” as that term is used in the ’941 patent.

To offer an approximate analogy for purposes of clarifying the relevant comparison I am making between the “mobile-specific transmission parameters” described in the claims and the relied-upon disclosures of 802.16a, the “mobile-specific transmission parameters might be thought of as analogous to a private chef who can tailor a diner’s meals according to her taste preferences and allergies. By contrast, the relied-upon teachings of 802.16a provides a set of boxed lunches from which a diner can select, but offers no way of altering the lunch boxes. In this way 802.16a is like the less flexible prior art systems that the ’941 patent distinguishes in its specification. Furthermore, 802.16a only provides for 12 types of bursts. Ex. 1006 [2006-802.16a] 124. Thus, all of the SSs served by the base station must choose between this limited selection of bursts. Turning back to the boxed lunch analogy, there are a maximum of 12 types of lunch boxes so if none of them are gluten-free, then a diner with celiac disease would not be able to eat.

Ex. 2001 [Alberth Decl.] ¶¶ 49-50. In short, 802.16a’s system for configuring transmission parameters differs significantly from the one disclosed in the ’941 patent. Petitioner has not provided any evidence that the operating conditions of the SS are even taken into account when determining the transmission parameters of the bursts. Rather, in this respect 802.16a’s system is like the inflexible prior systems the ’941 invention set out to improve. *Id.* ¶ 50.

Moreover, even if a POSITA reading 802.16a did want to adjust the parameters of the bursts to take into account a SS's operating conditions, the 802.16a reference's lack of flexibility would complicate doing so. As explained below, the cited teachings of 802.16a do not disclose allowing multiple antenna transmission schemes or multiple subchannel configurations in a single group of bursts.

The claims also recite "transmission parameters" that include "an antenna transmission scheme and a corresponding subchannel configuration, the antenna scheme comprising a transmission diversity scheme or a multiple-input multiple-output (MIMO) scheme and the corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers in the frequency domain." Ex. 1001 ['941 patent] cls. 1, 6, 8, 13. Ground 1 relies on 802.16a as to these limitations, alleging that 802.16a's STC meets the claimed "transmission diversity scheme," and that 802.16a's AAS meets the claimed "MIMO scheme." Pet., 47-48 ("802.16a's BS and SS can communicate using different antenna schemes, including transmit diversity (STC) and MIMO (AAS)."). The Petition further alleges that 802.16a's distributed-carrier permutation meets the claimed "distributed subcarriers" subchannel configuration, and that 802.16a's adjacent-carrier permutation meets the claimed "localized subcarriers." *Id.*, 55-56.

Even if, *arguendo*, these schemes and permutations qualify as the claimed “transmission parameters,” 802.16a is incapable of making them “mobile station-specific” because of its system’s inability to assign different antenna schemes and subchannel configurations in a single group of bursts. As Mr. Alberth confirms, enabling either the STC or AAS option in 802.16a requires *all* subsequent bursts in that group to use that option. Ex. 2001 [Alberth Decl.] ¶ 52 (citing Ex. 1006 [2003-802.16a] 189 (“Within a frame, the *switch from non-AAS to AAS-enabled* traffic is marked by using the extended DIUC = 15 with the AAS_DL_IE() to *indicate that the subsequent allocations*, until the start of the first UL-MAP allocation using TDD, and until the end of the frame using FDD, *shall be for AAS traffic.*”); *id.* (“In the DL-MAP an STC enabled BS (see 8.5.8) may transmit DIUC=15 with the *STC_IE() to indicate that the subsequent allocations shall be STC encoded.*”)).

Moreover, the selection of the alleged “distributed subcarriers or “localized subcarriers” in 802.16a can only be made if AAS (the alleged MIMO option) is enabled. Ex. 1006 [2003-802.16a] 200 (“A *BS using the AAS option* may change from the ‘*distributed carrier permutation*’ described in 8.5.6.1 and 8.5.6.2 to the ‘*adjacent carrier permutation*’”). Mr. Alberth explains: “Dr. Wilson has not identified, and I have not found, any disclosure in 802.16a that selection between the distributed carrier permutation or adjacent carrier permutation is possible if

STC (the contended ‘transmission diversity scheme’) is enabled.” Ex. 2001

[Alberth Decl.] ¶ 53.

Finally, “[i]f AAS (the contended MIMO option) is enabled and the adjacent carrier permutation is selected in 802.16a, then all the rest of the bursts in that group must also use that option.” *Id.*, ¶ 54 (citing Ex. 1006 [2003-802.16a] 200 (“After this change, the **BS shall only transmit/receive** AAS-enabled traffic **using the adjacent carrier permutation** until the end of the frame.”)).

The fact that the alleged antenna “transmission scheme” and “subchannel configuration” must be selected for multiple bursts teaches away from the “mobile station-specific transmission parameters” recited by the claims:

As already discussed, 802.16a defines the supposed “transmission parameters” for bursts rather than for individual SSs. *See* Ex. 1006 [2003-802.16a] 188. It would be difficult, if not impossible, under 802.16a’s teachings to configure these “transmission parameters” for bursts for the purpose of accounting for operating conditions of a specific SS. This is because of the fact that, as I have already discussed above, when 802.16a selects a particular transmission parameter for one burst in a group of bursts, all subsequent bursts in that group must also use that transmission parameter. For example, if in a group of 12 bursts starting with the default setting of using a single antenna, burst #3 needed to use AAS (the contended “multiple-input-multiple-output (MIMO) scheme”), then bursts #4-12 would also need to use AAS. Ex. 1006 [2003-

802.16a] 189. It would be impossible for any of these subsequent bursts in the group to use STC (the contended “diversity scheme”) even if STC were appropriate for the SSs assigned to these subsequent bursts. Indeed, it appears to be impossible for a group of bursts to use both AAS and STC. *See id.*

In its subchannel configuration, 802.16a is even less flexible than that. The “adjacent-carrier permutation” is only available if AAS is selected. *Id.*, 189, 200. Thus, as far as 802.16a discloses, it would be impossible, for example, for a mobile carrier to use both 802.16a’s alleged “transmission diversity scheme” (contended to be 802.16a’s STC option) and alleged “localized subcarriers” (contended to be 802.16a’s adjacent-carrier permutation). Additionally, once one subchannel configuration is selected for a burst in a group, all subsequent bursts in the group must also use that configuration. *Id.*, 189. This lack of flexibility would make it very difficult, if not impossible, to select transmission parameters for the bursts based on the operating conditions of the SSs assigned to those bursts. This would further lead a POSITA to understand that the transmission parameters for 802.16a’s bursts would not be “mobile station-specific.”

Ex. 2001 [Alberth Decl.] ¶¶ 55-56.

The Petition fails to account for the consequences of 802.16a’s structure, which set its transmission parameters for bursts rather than for specific SSs.

Petitioner fails to explain how transmission parameters allocated only to bursts can

possibly be “mobile station-specific,” and the inflexibility of 802.16a’s burst-based transmission parameters foreclose meeting the recited characteristics of the claimed “mobile station-specific transmission parameters.”

For these reasons as well, Ground 1 of the Petition cannot be a basis for institution.

C. Petitioner Fails To Show That 802.16a and Heath Have “Transmission Parameters [That] Indicate An Antenna Transmission Scheme *And* A Corresponding Subchannel Configuration.” (All Claims).

As discussed above, the claims require that “the mobile station-specific transmission parameters indicate an antenna transmission scheme and a corresponding subchannel configuration...the corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers.” Ex. 1001 [’941 patent] cls. 1, 6, 8, 13. In the prior IPR proceeding involving this patent, it was found that not even a reasonable likelihood of unpatentability of these claims was shown. *Dell Computer, Inc. v. Neo Wireless LLC*, IPR2021-01468, Paper 12 (Mar. 14, 2022) (the “-1468 DDI”). Denial of trial was based in part on the assigned Board panel’s determination in that case that this limitation means that, “*at a minimum*, that the mobile station-specific transmission parameters are capable of indicating, as alternatives, *both* distributed subcarriers *and* localized subcarriers in the frequency domain as subchannel configurations.”

Id., 19. Petitioner does not dispute that this prior construction of the claims is correct, and 802.16a cannot be shown to meet this limitation under that undisputed construction, as demonstrated below.

As noted above, in Ground 1 the Petition alleges that 802.16a's STC meets the claimed "transmission diversity scheme" and that 802.16a's AAS meets the claimed "MIMO scheme." Pet., 47-48. As also previously discussed above, the Petition asserts that AAS_DL_IE() is the transmission parameter that indicates the alleged "subchannel configuration." Pet., 58 ("Table 116br illustrates AAS_DL_IE() indicating the subchannel configuration"). However, AAS_DL_IE() is not transmitted when STC, the alleged "transmission diversity scheme," is selected. Thus, when the STC option is selected—in other words, if the alleged "antenna transmission scheme" is the alleged "transmission diversity scheme"—802.16a is *incapable* of indicating, as alternatives, both distributed subcarriers and localized subcarriers. Thus, 802.16a does not meet the claim limitation as interpreted by the Board.

1. As The Board Has Correctly Found, The Claims Require "At A **Minimum** That The Mobile Station-Specific Transmission Parameters Are Capable Of Indicating, As Alternatives, **Both** Distributed Subcarriers **And** Localized Subcarriers."

The independent claims require that "the mobile station-specific transmission parameters indicate an antenna transmission scheme *and* a

corresponding subchannel configuration. Ex. 1001 [’941 Patent] cls. 1, 6, 8, 13.

The Board, after analyzing the claim language, found that this limitation is not met unless the control message has some “affirmative indication” that “would indicate” a “corresponding subchannel configuration.” -1468 DDI, 15 (“we understand the argued limitation to require that the mobile station-specific transmission parameters contained in the control message would indicate ‘a corresponding subchannel configuration,’”), 16 (“we find the argued limitation does require some affirmative indication, i.e., a mobile station-specific transmission parameter, that would at least ‘indicate...a corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers in the frequency domain’”). Thus, the Board concluded, “the correct construction requires, *at a minimum*, that the mobile station-specific transmission parameters are capable of indicating, as alternatives, *both distributed subcarriers and localized subcarriers* in the frequency domain as subchannel configurations.” *Id.*, 19. This claim construction is undisputed by Petitioner in the present case. Pet., 15.

This construction also is supported by both the ’941 patent’s specification and the prosecution history. For example, the ’941 patent states that during the “transmission adaption process” each user is “informed of its subchannel configuration.” Ex. 1001 [’941 patent] 7:10-16; *see also id.*, 7:17-18. Also, during prosecution the Wilson reference was distinguished because “Wilson is silent as to

the transmission of subchannel information as defined by the applicant.” Ex. 1002 [Pros.-History] 100. Moreover, as the Board held in the prior IPR proceeding, this claim construction is consistent with a claim construction agreed to by Patent Owner in prior litigation, which stated that, “the claim requires the [mobile station-specific transmission] parameters be capable of indicating (alternatively) **both** a distributed **and** localized subcarrier configuration.” -1468 DDI, 18-19. Because Patent Owner agreed to this construction in the prior IPR proceeding, it is a binding disclaimer that applies to the scope of these claims in this “later proceeding.” *See CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1383 (Fed. Cir. 2022) (“To be clear, a disclaimer in an IPR proceeding is binding in later proceedings, whether before the PTO or in court.”).

Finally, this construction is also consistent with the positions of both Patent Owner and the joint defendants, including Petitioner, in the concurrent District Court litigation. While there remains a dispute in that litigation as to the exact wording of the claim construction, both sides agree that the “mobile station-specific transmission parameters” must support **both** localized and distributed subchannel configurations. Patent Owner maintains its consistent position that, “the subchannel configuration is capable of comprising **either** localized **or** distributed subcarriers” and that “[t]o avoid any doubt, this requires supporting **both** localized **and** distributed subchannel configurations.” Ex. 2005 [Disputed-

Lit-Terms] 4-5. The defendant group proposed that the claim requires “the mobile station-specific transmission parameter *alternatively* indicates either distributed subcarriers or localized subcarriers in the frequency domain as subchannel configurations.” *Id.* While, at the last moment, Petitioner has attempted to distance itself from this claim construction, the joint position of all the eight other defendants is nonetheless probative. Indeed, Petitioner has agreed not to challenge this construction. *See supra* Section II; Ex. 2006 [Stip-Re-CC]. Thus, it is indisputable that these claims require that the mobile station-specific parameters must be capable of indicating, at least, *both* a distributed *and* localized subcarrier configuration.

2. The Claimed “Mobile Station-Specific” Parameters Must Also At A Minimum Be Capable Of Indicating Both A Transmission Diversity Scheme And A MIMO Scheme.

Immediately after the above claim language is a limitation pertaining to a “transmission diversity scheme” that parallels the above language for the “antenna transmission scheme.” It recites that the “transmission parameters” must “compris[e] a transmission diversity scheme or a multiple-input multiple-output (MIMO) scheme.” Ex. 1001 [’941 Patent] cls. 1, 6, 8, 13. Thus, it is clear that the correct construction of the claims requires, *at a minimum*, that the mobile station-specific transmission parameters are capable of indicating *both* a transmission

diversity scheme *and* a multiple-input multiple-output (MIMO) scheme as antenna transmission schemes.

This aspect of the claims is also well supported by the specification and prosecution history. The specification states that, “Other factors that can be used in the adaption process include...transmitter antenna techniques.” Ex. 1001 [’941 patent] 6:50-52. Moreover, the specification discusses using different antenna transmission schemes in different circumstances. *Id.*, 6:60-65 (“Some multiple antenna techniques, such as transmission diversity, are used to improve the transmission robustness against fading channel effects, whereas other multiple antenna techniques such as multiple-input multiple-output (MIMO) schemes are used to improve transmission throughput in favorable channel conditions.”). Also, just as for the “subchannel configuration” limitation discussed in the prior IPR, the Applicant in prosecution distinguished from prior art that only disclosed one of the two claimed antenna transmission schemes. Ex. 1002 [Pros.-History] 100 (“In other words, applicant's system allows for its use in systems that rely on transmission diversity schemes other than MIMO. By being exclusively directed to a MIMO system, Wilson has no need to transmit an antenna transmission scheme, and therefore fails to either disclose or suggest the use of the antenna transmission scheme as claimed by applicant.”).

As with the previous claim term, this understanding that “the mobile station-specific transmission parameters” must cover both a transmission diversity scheme and a MIMO scheme is consistent with the current litigation positions of both Patent Owner and Petitioner. Patent Owner and defendants in that litigation both agree that “[t]o avoid any doubt, this requires supporting **both** MIMO **and** non-MIMO transmission diversity systems.” Ex. 2005 [Disputed-Lit-Terms] 4. Again, Petitioner’s attempt to back away from the defendants’ joint position, in a blatant attempt to have its cake and eat it too, does nothing to diminish the agreement by multiple defendants that the claim language requires supporting both MIMO and non-MIMO transmission diversity schemes. It is therefore also clear that the mobile station-specific parameters must **at a minimum** be capable of indicating **both** a transmission diversity scheme **and** a MIMO scheme.

Ground 1 cannot satisfy this construction, as explained below.

3. When Indicating The “Transmission Diversity” Antenna Scheme, 802.16a’s DL-MAP Does Not Indicate A “Corresponding Subchannel Configuration.”

As discussed above, Petitioner asserts that when 802.16a’s AAS_DL_IE() is sent within the DL-MAP, it can indicate “a corresponding subchannel configuration.” Pet., 58-59. However, this parameter is **only** transmitted **when AAS**, 802.16a’s alleged “multiple-input multiple-output (MIMO scheme),” **is selected**. That’s because AAS_DL_IE() is used in 802.16a to indicate that all the

bursts after the AAS_DCL_IE() extended DIUC is sent should start using AAS.

Ex. 1006 [2003-802.16a] 189 (“Within a frame, the switch from non-AAS to AAS-enabled traffic is marked by using the extended DIUC = 15 with the AAS_DL_IE() to indicate that the *subsequent allocations*, until the start of the first UL-MAP allocation using TDD, and until the end of the frame using FDD, *shall be for AAS traffic*.”); *see also* Pet., 49 (“DL-MAP indicates the antenna transmission scheme (STC or AAS) using the STC_IE() and AAS_DL_IE() information elements.”). Thus, 802.16a teaches that when AAS is selected for subsequent bursts using AAS_DL_IE(), the AAS antenna transmission scheme, rather than the STC antenna transmission scheme, *shall* be used. *Id.*

As Mr. Alberth explains:

802.16a does not allow for STC, the alleged “antenna transmission scheme,” that is contended to be a “transmission diversity scheme” as claimed, to be selected when AAS_DL_IE() is enabled. *See* Ex. 1006 [2003-802.16a] 189, 200. Moreover, 802.16a does not enable selection of its distributed carrier permutation or adjacent carrier permutation (which are the only elements contended to satisfy the “corresponding subchannel configuration characterized by distributed subcarriers or localized subcarriers in the frequency domain” limitation) when AAS_DL_IE() is enabled. Thus, 802.16a’s “transmission parameters” are shown to be capable of indicating “a corresponding subchannel configuration” only, at most, when the

AAS, the alleged “multiple-input multiple-output (MIMO) scheme,” is selected. Thus, a POSITA would understand that when AAS_DL_IE() is enabled, 802.16a does not have an “antenna transmission scheme *comprising* a transmission diversity scheme,” even under the terms of the Petition’s own theory of Ground 1.

Ex. 2001 [Alberth Decl.] ¶ 57. STC, 802.16a’s alleged “antenna transmission diversity scheme,” cannot be selected when AAS_DL_IE() provides an indication of “a corresponding subchannel configuration.” Thus, whenever STC is selected, 802.16a fails to teach an “antenna transmission scheme *comprising* a transmission diversity scheme,” as required by the claim language construed above.

Conversely, when the STC, the alleged antenna “transmission diversity scheme,” is *not* selected, and AAS, the alleged MIMO scheme, is *instead* selected, there is an option for indicating “a corresponding subchannel configuration” under Petitioner’s alleged read.

As shown in the tables below, there is no element with STC_IE() that allows for choosing a subcarrier configuration:

Table 116bs—OFDMA DL STC Information Element

Syntax	Size	Notes
STC_IE() {		
extended DIUC	4 bits	AAS = 0x01
OFDMA symbol offset	10 bits	
}		

Ex. 1006 [2003-802.16a] 189. This is in contrast to the “Permutation” field in AAS_DL_IE() that allegedly allows selection of the “antenna transmission scheme.”

Table 116br—OFDMA DL AAS information element

Syntax	Size	Notes
AAS_DL_IE() {		
extended DIUC	4 bits	AAS = 0x02
Permutation	2 bits	0 = distributed-carrier permutation 1 = adjacent-carrier permutation
OFDMA symbol offset	10 bits	
}		

Id.

Indeed, 802.16a teaches clearly that no such option for selecting the distributed-carrier permutation or adjacent-carrier permutation exists for non-AAS traffic, including STC. According to 802.16a’s express teachings, “[t]he BS shall *always* return to the *distributed carrier permutation* for broadcast (*non-AAS*) traffic.” *Id.*, 200. Thus, 802.16a expressly teaches that STC, which is not AAS, must always use distributed carriers. *See* Ex. 2001 [Alberth Decl.] ¶ 53.

In sum, Petitioner has failed to show that, when the alleged “transmission diversity scheme” (STC) is selected, DL-MAP is capable of choosing between the “distributed-carrier permutation” and the “adjacent-carrier permutation.” Thus, it fails to show “that the mobile station-specific transmission parameters are capable

of *indicating, as alternatives*, both distributed subcarriers and localized subcarriers” as required by the Board’s claim construction.

For this additional reason, Ground 1 of the Petition cannot be found to support institution under 35 U.S.C. § 314(a).

IV. PETITIONER FAILS TO SHOW A REASONABLE LIKELIHOOD THAT GROUNDS 2-3 WILL SUCCEED (WALTON040 & LI017)

Like Ground 1, Grounds 2 and 3 cannot support institution of review for multiple reasons.

A. The Petition Fails To Show That Li017 Teaches Or Renders Obvious “*Mobile Station-Specific* Transmission Parameters” That “Indicate...The Corresponding Subchannel Configuration” (All Claims).

Much as in Ground 1, the Petition fails to show that the references in Grounds 2-3, namely, Walton040 and Li017, have “mobile station-specific transmission parameters” that “indicate...the corresponding subchannel configuration.”

Grounds 2 and 3 rely on Walton040 and Li017 for the independent claims. Petitioner admits that Walton040 does not teach this limitation, and asserts only that it is taught by Li017. Pet., 91 (“Walton040’s BS ... does not explicitly disclose that the control information includes an indication of a corresponding subchannel configuration for these ‘subcarriers.’ However, Li017 teaches this limitation.”) (citations omitted). As discussed above in Section III.B.1, the claimed “mobile

station-specific transmission parameters” must be customized to each particular mobile station’s operating conditions. This provides benefits such as increased throughput and better efficiency in, for example, difficult channel conditions. *See* Ex. 2001 [Alberth Decl.] ¶ 48. However, much like 802.16a’s bursts, Li017’s clusters of subchannels are base station-specific, not “mobile station-specific” as required by the claims. The clusters are preconfigured without regard to the operating conditions of the alleged “mobile stations.” Just as 802.16a assigns its alleged mobile stations to bursts, Li017 assigns its alleged mobile stations to its preexisting clusters. Thus, Li017 does not have “mobile station-specific transmission parameters” as claimed, as further explained below.

1. Li017 Configures Base Station-Specific Diversity And Coherence Clusters Without Regards To The Mobile Carriers.

Li017 organizes its “subchannel configuration” by grouping its subcarriers into clusters. Ex. 1009 [Li017] ¶ 40 (“A cluster, such as cluster 102, is defined as a logical unit that contains at least one physical subcarrier, as shown in FIG. 1A.”). These clusters are either “coherence clusters, containing multiple subcarriers close to each other” or “diversity clusters, containing multiple subcarriers with at least some of the subcarriers spread far apart over the spectrum.” *Id.* ¶ 111. When setting up these clusters, Li017’s base station takes into account the subchannel configurations of other surrounding base stations and the ratio of mobile to fixed

subscribers, but never adjusts the clusters in a mobile station-specific manner based on the operating conditions of the specific subscribers (the alleged “mobile stations” in Li017). *See* Ex. 2001 [Alberth Decl.] ¶59.

Li017 gives examples of how diversity clusters and coherence clusters are distributed in a given spectrum, as shown below:

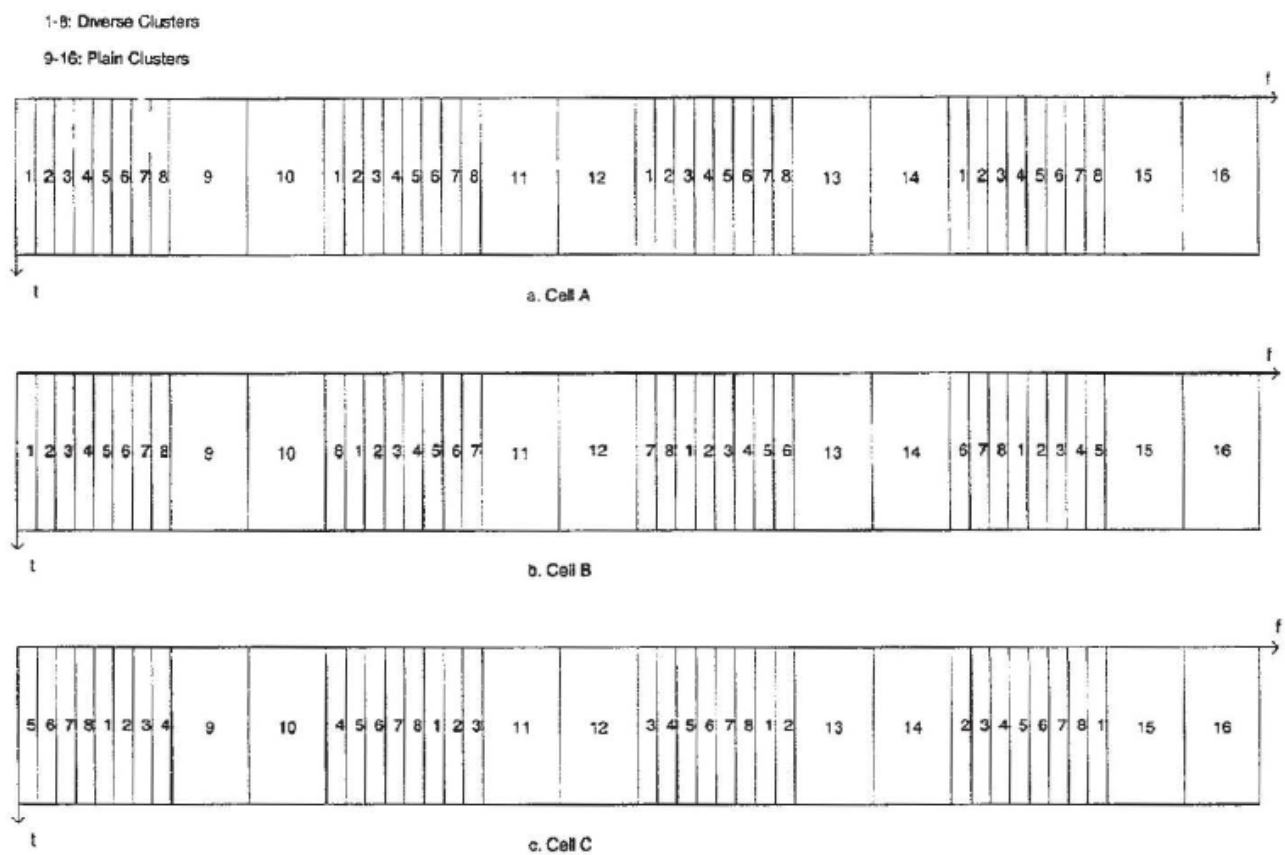


Figure 9

Ex. 1009 [Li017] Fig. 9 (showing diversity clusters 1-8 and coherence clusters 9-10 for adjacent cells A, B, and C).

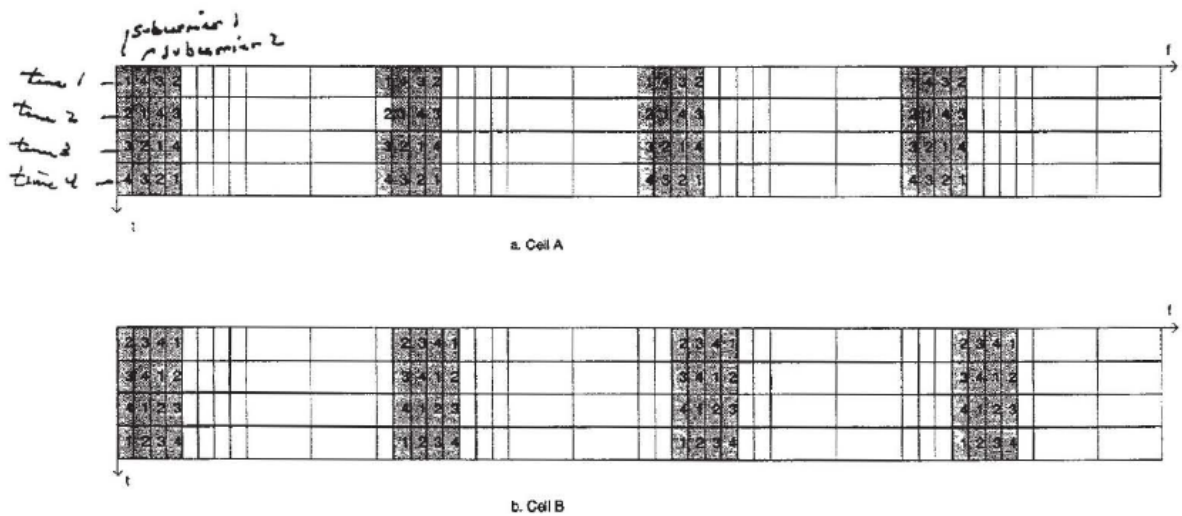
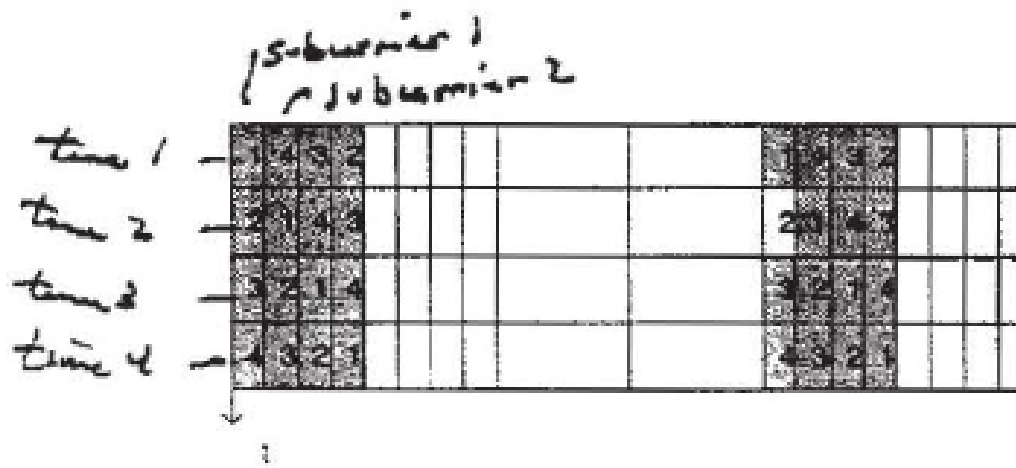


Figure 10



Id., Fig. 10 (original and zoomed in to show labels for the clusters).

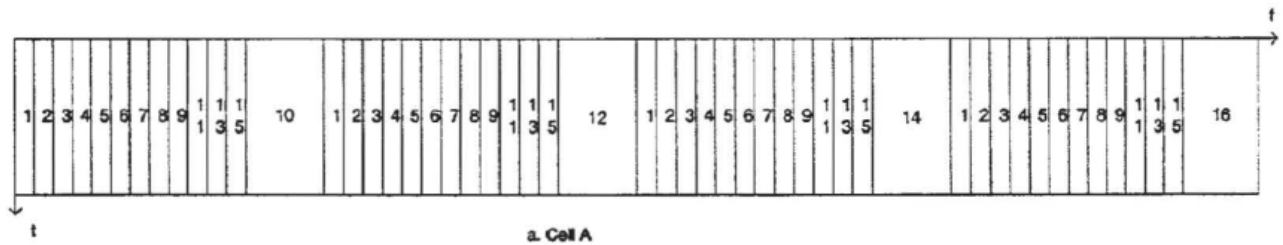


Figure 12

Id., Fig. 12 (showing diversity clusters 1-9 and 11-15 as well as coherence clusters 10, 12, 14, and 16).

None of these disclosures in Li017 so much as hint that the choice between coherence clusters and diversity clusters is based on the operating conditions of individual subscribers. As Mr. Alberth points out, “[i]f the subchannels were grouped based on the operating conditions of the individual subscribers, one would not expect them to be regularly distributed across the available spectrum.” Ex. 2001 [Alberth Decl.] ¶ 60. Rather, it is evident that the subchannels for the distributed clusters are equally spaced throughout the available frequency spectrum, and coherence clusters are also spaced evenly in the frequency spectrum. *Id.* (“It appears in the figures of Li017, and the description accompanying the figures, that subchannels assigned to diversity clusters are uniformly distributed across the available spectrum, as are the groups of subchannels assigned to coherence clusters.”). Thus, in view of the distribution of the clusters shown in Li017, the subchannel configuration in Li017 is not shown to be “mobile station-specific” as required by the claims.

Nor is there any discussion in Li017 of tailoring the clusters so they are specific to any subscribers. Li017 states in pertinent part:

FIG. 1A illustrates multiple subcarriers, such as subcarrier 101, and cluster 102. A cluster, such as cluster 102, is defined as a logical unit that contains at least one physical subcarrier, as shown in FIG. 1A. A cluster can contain consecutive or disjoint subcarriers. The mapping between a cluster and its subcarriers can be fixed or reconfigurable. In

the latter case, the base station informs the subscribers when the clusters are redefined.

Ex. 1009 [Li017] ¶ 40. Nothing here teaches consideration of the operating conditions of individual subscribers. And, significantly, the Petition fails to point to any disclosure in Li017 that it alleges discloses tailoring Li017's clusters to particular subscribers. Pet., 91-95

It is not as if Li017 is in any way silent on how subchannels are configured into its clusters. In fact, Li017 has detailed disclosure of such configuration. Li017 describes and teaches numerous factors affecting how the subchannels should be configured into clusters, but none of these factors include tailoring clusters to particular subscribers.

First, the distribution of Li017's subchannels is significantly influenced by the channel coherence bandwidth:

The closeness of the multiple subcarriers in coherence clusters is preferably within the channel coherence bandwidth, i.e. the bandwidth within which the channel response remains roughly the same, which is typically within 100 kHz for many cellular systems. On the other hand, the spread of subcarriers in diversity clusters is preferably larger than the channel coherence bandwidth, typically within 100 kHz for many cellular systems.

Ex. 1009 [Li017] ¶ 111. This channel coherence bandwidth taught in Li017 is a physical phenomenon that is not “mobile-station specific” as claimed. *See* Ex. 2001 [Alberth Decl.] ¶ 61 (“The channel coherence bandwidth referred to in Li017 is a function of the physical environment of the base station and the aggregate conditions of the subscribers, rather than the operating conditions of any individual mobile station.”)

Li017 further teaches that the configuration of coherence and diversity clusters in a given cell may be dependent on the clusters in neighboring cells:

The interference from a particular cluster in one cell are distributed to many clusters in other cells, e.g., the interference from Cluster 1 in Cell A are distributed to Cluster 1, 8, 7, 6 in Cell B. This significantly reduces the interference power to any particular cluster in Cell B. Likewise, the interference to any particular cluster in one cell comes from many different clusters in other cells.

Ex. 1009 [Li017] ¶ 113. This teaching in Li017 that the subchannel configuration of one cell can affect the performance of other cells not only does not teach this limitation, but actually teaches away from the use of “mobile station-specific transmission parameters” as claimed. That is because the POSITA would understand that any change to a base station’s clusters in Li017 would have the potential to deleteriously increase interference in Li017’s adjacent cells. *See* Ex. 2001 [Alberth Decl.] ¶ 62.

As Mr. Alberth explains, in Li017, “[g]iven that each individual base station must take into account potential interference from surrounding base stations, it would generally need to take into account more variables in adjusting the clusters according to the operating conditions of the individual subscribers. As such it would be more difficult, or impossible, to successfully implement ‘mobile station-specific transmission parameters’ according to Li017’s teachings.” *Id.*

The only suggestion that Li017 takes into account any information about the subscribers in this respect is its reference to the *aggregate* ratio of fixed to mobile receivers, which is used to change the ratio of diversity to coherence clusters. However, Li017’s use of this ratio does not teach “mobile-station-specific transmission parameters” as claimed. Here, Li017 teaches:

The ratio/allocation of the numbers of coherence and diversity clusters in a cell depends on the ratio of the population of mobile and fixed - subscribers. When the population changes as the system evolves, the allocation of coherence and diversity clusters can be reconfigured to accommodate the new system needs.

Ex. 1009 [Li017] ¶ 126. There is no teaching, however, that the operating conditions of *particular* subscribers should have any effect in configuring the clusters. *See* Ex. 2001 [Alberth Decl.] ¶63.

As Mr. Alberth explains:

Li017 provides detailed instructions for subcarrier clustering. For example, it describes how to determine the closeness of multiple subcarriers in coherence clusters and the spread of subcarriers in diversity clusters. Ex. 1009 [Li017] ¶ 111. Li017 also instructs that the configuration of adjacent cells should be taken into account when the subchannels are assigned to clusters. *Id.*, ¶ 113. Also, the aggregate number of fixed versus mobile subscribers may be taken into account. *Id.*, ¶ 126. These are all base station-specific transmission parameters, in that they are determined based on the conditions of the base station, its assigned frequency band, its neighboring cells, and its overall population of subscribers. I find nothing in Li017 suggesting that operating conditions of individual subscribers should be used to determine the subchannel configuration. Thus, I find nothing in Li017 that suggests the “mobile station-specific transmission parameters” claimed in the ’941 patent.

Ex. 2001 [Alberth Decl.] ¶ 64. Thus, like 802.16a’s bursts (*see* Ground 1 *supra*), Li017’s clusters are, if specific to any “station,” **base** station-specific—configured without consideration of operating conditions of individual alleged “mobile stations.”

2. Li017 Selects Or Allocates Mobile Stations To Preexisting Clusters Or Switches Them To Different Clusters, But Never Adapts The Subchannel Configuration To Be “Mobile Station-Specific.”

Once Li017’s base station configures its distributed and coherence clusters, it seeks to allocate or select a cluster for each mobile station. First, Li017 gives

“An Exemplary Subcarrier/Cluster Allocation Procedure.” Ex. 1009 [Li017] ¶ 41. Briefly, the subscriber monitors the signal-to-interference/noise ratio (SINR) for pilot signals sent by the base station and reports the results back to the base station. *Id.*, ¶¶ 44-45. Using this information, the base station selects one or more clusters for each subscriber. *Id.*, ¶¶ 46-47. Li017 then describes “Intelligent **Switching** between Coherence and Diversity Clusters.” *Id.* ¶ 110. This is because, according to Li017, “the channel gain of a coherence cluster can vary significantly and cluster **selection** can greatly improve the performance.” *Id.* ¶114. (Li017 uses variations of the word “select” six times to describe how clusters are assigned to the alleged “mobile stations”. *See id.*, ¶¶ 118-121.) Additionally, “[t]he selection can be updated and intelligently switched during retraining.” *Id.*, ¶ 125.

As described above, selecting among preexisting subchannel configurations for each subscriber does not meet the claimed “mobile station-specific transmission parameter.” *See* Section III.B *supra*. Whether the preexisting subchannel configurations are called “bursts” as in 802.16a or “clusters” as in Li017, these subchannel configurations are not “mobile-station specific” since they do not reflect conditions specific to individual subscribers. Per Mr. Alberth:

The '941 teaches and Its claims require “mobile station-specific transmission parameters.” Ex. 1001 ['941 Patent] cls. 1, 6, 8, 13. Li017 uses a different approach than the “mobile station-specific

parameters [that] indicate *** a corresponding subchannel configuration.” *Id.* Instead of tailoring the subchannel configuration to the individual characteristics of one or more subscribers, Li017 attempts to assign each subscriber to the pre-existing cluster that provides it with the best performance. *See* Ex. 1009 [Li017] ¶ 46. In my opinion, there are benefits and drawbacks to each of these approaches, and the Petition shows no reason for the ordinary artisan at the time the claimed invention was made to modify Li017’s approach of assigning specific subscribers to pre-existing clusters for best performance, to be like the ’941 patent’s different approach of creating a tailored subchannel configuration for one or more specific mobile stations based on their specific operating characteristics at the time. While a mobile station-specific subchannel configuration may yield better performance, it likely requires more overhead in the control signals. Li017’s fixed subchannel configuration may not be as efficient in some ways, but it requires less computation and overhead in other ways, and likely overall, than the approach described in the ’941 patent. The point, however, is that Li017’s approach is not the same as the approach using “mobile station-specific transmission parameters” claimed and disclosed in the ’941 patent.

In other words, while Li017 may select that a particular subscriber should be using a particular cluster, that does not make that cluster’s parameters “mobile station-specific,” and it does not mean that the selection of that cluster renders its parameters “mobile station-specific transmission parameters.” It simply means that the cluster, with its specific parameters, is now to be used by that subscriber.

This may be thought of as analogous to an assignment of cluster-specific transmission parameters to the mobile station. It is not an assignment of mobile station-specific parameters to the mobile station.

Ex. 2001 [Alberth Decl.] ¶¶ 65-66.

Thus, the Petition fails to show a reasonable likelihood that Li017 discloses “mobile station-specific transmission parameters” as required by the claims. This is, by itself, sufficient reason to find that Grounds 2-3 cannot be a basis for institution.

B. The Petition Ignores Walton040’s Subchannel Configuration And Gives No Motivation For Replacing It With Li017’s Method Of Assigning Subchannels.

Grounds 2 and 3 fail to support institution for yet another reason. No reasonable likelihood is shown that the POSITA at the time of the invention would have been motivated to replace Walton040’s existing subchannel configuration method with Li017’s subchannel assignment method as Grounds 2 and 3 require. The Petition bases its alleged reasons to combine on the mistaken premise that Walton040 does not describe how to assign its subchannels. This argument, however, simply misapprehends Walton040’s teachings. Contrary to the Petition’s incorrect assertions, Walton040 has a detailed and comprehensive method for configuring subchannels. The POSITA would have no demonstrated reason to modify Walton040’s comprehensive teachings, and the Petition, laboring under its

misapprehension that these teachings do not exist, fails to even attempt to show, let alone successfully show, such a reason.

Grounds 2 and 3 rely on a proposed combination of Walton040's antenna transmission scheme teachings, Pet., 95-98, with Li017's subchannel configuration teachings, Pet., 91-95, 98. The Petition's proposed motivation to combine these teachings is premised on the assertion that "Walton040 *does not explicitly describe how to assign or group subcarriers* for use in the MIMO system utilizing OFDM." Pet., 77; *see also id.*, 91 (stating that Walton040 does not "explicitly disclose" the corresponding subchannel configuration for the subcarriers). This statement is repeated verbatim by Petitioner's declarant. Ex. 1003 [Wilson Decl.] ¶ 352.

This statement in the Petition and in its accompanying declaration is, however, demonstrably mistaken. Walton040 teaches a detailed scheme for how to assign and group its subcarriers for use in its MIMO system utilizing OFDM.

Walton040 contains over 150 paragraphs on "Scheduling," divided into four sections including 25 paragraphs on "Channel Assignments." Ex. 1008 [Walton040] ¶¶ 384-539 (¶¶ 435-460 discussing "Channel Assignments"). Directly contrary to the Petition's assertions, these teachings in Walton040 explicitly describe how to assign or group subcarriers for use in the MIMO system using OFDM. *But see, e.g.*, Pet., 77 (asserting that "Walton040 *does not explicitly*

describe how to assign or group subcarriers for use in the MIMO system utilizing OFDM”), 91 (similar).

There is, in fact, no reason shown to conclude that there is any rational basis for making this substitution. Walton040’s 150-paragraph section on “Scheduling” commences with an introductory statement that, “Various scheduling schemes may be designed and used to maximize system throughput by *scheduling and assigning terminals to the allocated channels* such that simultaneous data transmissions on these channels are supported.” *Id.*, ¶ 385. There can be no serious dispute whether the channels to be allocated are subcarriers. Walton states that “[f]or a MIMO system utilizing OFDM, each spatial subchannel of each frequency subchannel may be referred to as a transmission channel.” *Id.*, ¶ 48. And the Petition asserts, as a premise of Grounds 2-3, that “[w]hile Walton040 refers to ‘frequency subchannels,’ a POSITA would have understood that these correspond to the claimed ‘subcarriers.’” Pet., 77 n.3.

Walton040 goes on to discuss in detail various factors it takes into account when assigning channels, including “(1) one or more channel metrics, (2) the priorities assigned to active terminals, (3) criteria related to fairness, and other factors.” Ex. 1008 [Walton040] *e.g.*, ¶ 391. Walton040’s discussion of each of these factors includes various carefully specified, complex equations for calculating channel metric. *Id.*, ¶¶ 392-424. These factors are then applied in the

25 paragraphs in the “Channel Assignment” section that describe sundry alternative embodiments for assigning channels to the active terminals. *Id.*, ¶¶ 435-460.

Finally, Walton040 proceeds to extensive, specific teachings of how download channel assignments can be made when the system makes use of the MIMO antenna transmission scheme. *Id.*, ¶¶ 461-507. This disclosure, needless to say, contradicts the Petition’s assertion that “Walton040 does not explicitly describe how to assign or group subcarriers for use in the MIMO system utilizing OFDM.” *See* Pet., 77, 91. It would be impossible for the POSITA reading *all* of Walton040 to miss this detailed, explicit, and extensive disclosure of how to assign or group subcarriers for use in Walton040’s MIMO system utilizing OFDM.

The Petitioner’s assertions that this detailed disclosure does not exist appear to be based simply on an incomplete reading of Walton040. But, as a consequence of this mistake, Petitioner offers no explanation why the POSITA would have any reason to remove, root and stem, Walton040’s detailed subcarrier configuration method and replace it with the one described in Li017. As a result, no motivation is shown to combine the Petition’s two primary references as Grounds 2-3 require.

As a reminder, Grounds 2 and 3 rely on combining Li017 with Walton040. It is undisputed that Walton040 never categorizes or describes its subcarriers (which, as noted, Walton040 generally calls “channels”) as either “distributed” or

“localized,” and indeed, Walton040’s extended discussion of subchannel configuration contains no hint that Walton040’s subchannel configuration may be “characterized by distributed subcarriers or localized subcarriers” as claimed. The Petition does not rely on Walton040 for these limitations, but relies instead on Li017 for the alleged “corresponding subchannel configuration.” The Petition’s *sole* alleged reason that the POSITA would have found it obvious to modify Walton040 to add Li017’s alleged “distributed” or “localized” subchannel configuration method, however, is that Walton040 “does not explicitly describe how to assign or group subcarriers.” Pet., 77. That premise, as shown above, misapprehends Walton040.

Even if, *arguendo*, one were to ignore this fundamental misstep, there is no apparent basis, based on the teachings of Walton040 and Li017, for combining their teachings in the manner claimed. There is no evidence suggesting that Li017’s grouping of subcarriers into clusters is superior to, or even compatible with, Walton040’s existing system for how to assign or group subcarriers. Indeed, there is every reason to believe that the POSITA would find Walton040’s method of subchannel configuration superior to Li017’s cluster method for Walton040’s particular system and application.

As Mr. Alberth explains:

Walton040 [Ex. 1008] discusses scheduling and channel assignment at length, including dedicated sections of the patent specification starting at paragraph 384 to 539; indeed, Walton040 includes almost 11 pages of text dedicated to scheduling methods. Walton040's scheduling and channel assignment methods are different from those of Li017. Li017 defines a method of scheduling where the available subcarriers are grouped into clusters. *See* Ex. 1009 [Li07] Fig. 13, ¶ 89. A subscriber may make measurements on some or all of the subcarriers and report the information back to the base station. *See Id.*, ¶ 26. The method of Li017 may reduce the amount of overhead required to report channel state information (CSI) and to schedule since reporting and scheduling is done for clusters of subchannels. However, this also means the system will not be able to maximize performance across any channel variation in the subcarriers within a cluster.

Ex. 2001 [Alberth Decl.] ¶ 67.

To show that it would be obvious to replace one system's components with another's, one must show that there would be a reason for the POSITA to do so at the time the invention was made. *See, e.g., In re Schweickert*, 676 Fed. Appx. 988, 995 (Fed. Cir. 2017) (remanding Board's finding of unpatentability because "the Board did not explain" how "Birrell would have 'benefitted from the advantages of...Cunniff's semaphore mechanism,'" especially since "[t]he gating function of Cuniff's semaphore ... is unnecessary to Birrell's system, and it would do little

more than add unwanted cost and complexity to the system”); *see also R.J.*

Reynolds Vapor Co. v. Fontem Holdings I B.V., IPR2016-01692, Paper 45, 26 (PTAB Mar. 2, 2018) (finding no motivation to combine because the first prior art “already disclose[d] a reliable means” for its purpose, so the Board “d[id] not find that one of ordinary skill in the art would have been motivated to use the technique of [the second prior art] to improve [the first prior art]”); *Apple Inc. v. Cellular Comm’ns Equip., LLC*, IPR2015-00576, Paper 7, 11-12 (Jun. 12, 2015) (denying institution because Petitioner failed to “provide a specific explanation why Hall did not already accomplish” proposed improvements that “the scheme in Reed ensures”). The use of the claims as the roadmap for making the combination (in other words, hindsight) is an improper basis for an obviousness ground.

Here, the Petition’s only motivation for its combination of Walton040 and Li017 is the faulty premise that Walton040 does not describe its own “corresponding subchannel configuration.” However, it does—and there is no reason shown to change it, least of all by removing it root and branch and using Li017’s entirely different categorical method instead. The only reason to do so is to follow the roadmap provided by the claims to reach the ’941 patent’s invention.

With Petitioner’s error exposed, Grounds 2-3, which rely on this combination, fail to show a reasonable likelihood that the POSITA would have

been motivated to make the proposed combination of Walton040 and Li017. For this additional reason, Grounds 2 and 3 cannot be found to support institution.

V. THE FAILURE OF THE PRIOR OBVIOUSNESS CHALLENGE WEIGHS AGAINST GRANTING THIS FOLLOW-ON CHALLENGE.

This is not the first IPR that challenges these claims. The failure of the earlier challenge weighs against finding obviousness in this case. This is true regardless whether the rejection of the prior challenge is considered as the first of improper serial petitions (Sections V.A-B, *infra*), or as an objective indicator of nonobviousness (Section V.C, *infra*).

In exercising its discretion under 35 U.S.C. § 314(a), the Board generally analyzes factors like those set forth in *General Plastic Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 16–17 (Sep. 6, 2017) (precedential as to § II.B.4.i). The factors recited in *General Plastic* are “non-exhaustive,” *id.*, 16, and “are not intended to represent all situations where it may be appropriate to deny a petition.” CTPG, 58. Furthermore, no single factor can dispositively require institution. “[N]ot all the factors need to weigh against institution for [the Board] to exercise [its] discretion under § 314(a).” *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-02150, Paper 11, 7 (Mar. 12, 2018). In the instant matter, as explained in the following sections, numerous of the *General Plastic* factors, including those relating to fairness concerns of using a prior non-institution

as a roadmap, as well as the finite resources of the Board and obviousness law itself, counsel against institution.

A. This Petition Used The Denial Of The Prior IPR As A Roadmap.

As already discussed above, in IPR2021-01468, Dell filed a petition for *inter partes* review of claims 1–14 of the '941 patent based on obviousness. A Board panel denied review on the merits, finding not even a threshold likelihood of obviousness for any claim. -1468 DDI.

Six months later, Petitioner filed its petition, also alleging obviousness, based on different references “with similar inventors to” the references in the Dell case. Pet., 7 n.1. Petitioner discusses why the previous obviousness challenge was denied, and argues that its references and arguments are “different” from those in that case in ways that distinguish it from the basis for denial of the Dell petition. *Id.*, 7 n.1, 13-14 (noting that decision rejecting 01468 obviousness grounds “stated that ‘the record describes no problem in [Walton269] that one of ordinary skill in the art would have resolved with the techniques used in Li748 to address intercell interference” and the [-1468] Petition did not ‘establish a reason to combine their teachings’”), 114 (arguing *e.g.*, that “Walton040 [(the Walton reference raised in this case)], is substantively different from Walton269 at least because it is directed to a multi-cell system susceptible to the specific problem of intercell interference that Li017 provides techniques to resolve” and that the remaining grounds in the

first case failed to show the claimed “subchannel configuration”); *see also id.*, 15 (specifically addressing “subchannel configuration” limitations relied upon to reject grounds in the first challenge), 51-55, 59, 74, 91, 95, 98. Thus, Petitioner, based on “review and consideration of the record in IPR2021-01468” (*id.*, 115), replaced the Walton and Li references in that case with “different” references, including a “different” Walton and a “different” Li, in a frank attempt to address the flaws the panel pointed out and relied upon to reject the 01468.

The Office has long disfavored such “road-mapping.” *See, e.g., Synaptics, Inc. v. Amkor Tech, Inc.*, IPR2017-00085, Paper 12, 10 (Apr. 18, 2017) (“We disfavor allowing follow-on petitions that attempt to fix deficiencies in a previous petition that were explained in a previous decision on institution.”). And this is disfavored for good reason. “As *General Plastic* noted with regard to ‘road-mapping’:

Multiple, staggered petitions challenging the same patent and same claims raise the potential for abuse. The absence of any restrictions on follow-on petitions would allow petitioners the opportunity to strategically stage their prior art and arguments in multiple petitions, using our decisions as a roadmap, until a ground is found that results in the grant of review.

Code200, UAB v. Bright Data Ltd., IPR2022-00861, Paper 18, 5 (Aug. 23, 2022) (precedential) (quoting *Gen. Plastic* (precedential), 17). This precedent further

holds that “the filing of sequential attacks against the same claims, with the opportunity to morph positions along the way, imposes inequities on Patent Owner,” particularly when they are “based on the analysis articulated in [the] Decisions Denying Institution of” earlier challenges. *Gen. Plastic* (precedential), 11 (internal quotation and alteration marks omitted); *see also id.*, 17 (explaining the “benefit from receiving and having the opportunity to study Patent Owner’s Preliminary Response, as well as our institution decisions on the first-filed petitions, prior to [the] filing of follow-on petitions,” can create “undue inequities and prejudices to Patent Owner”). Such “road-mapping concerns” are particularly significant when the prior denial was on the merits rather than discretionary and when the “later petition” is “refined based on lessons learned” from the previous denial to be different from the art “in the previously-filed petition.” *Code200* (precedential), 5.

While these decisions have concentrated upon the discretion to deny serial petitions by a single petitioner, these concerns also apply when the petitioners are not the same. The Board’s precedent further holds that “[i]n general, having multiple petitions challenging the same patent, especially when not filed at or around the same time as in this case, is inefficient and tends to waste resources,” and that “application of the *General Plastic* factors is not limited solely to instances when multiple petitioners are filed by the same petitioner.” *Valve Corp.*

v. Electronic Scripting Products, Inc., IPR2019-00062, Paper 11, 2, 15 (Apr. 2, 2019) (precedential). It has also been held that a “significant relationship” between different petitioners challenging the same patent under this precedent may be created when the fourth petitioner picks and chooses from an earlier petitioner’s work product—much like the road-mapping from the 01468 IPR on which the obviousness arguments in this case are based. *Ericsson Inc. v. Uniloc 2017, LLC*, IPR2019-01550, Paper 8, 12 (Mar. 17, 2020).⁵ *Valve* and its progeny like *Ericsson*

⁵ It is also noteworthy that prominent members of the legislative branch of government, including the current chairman of the Senate Intellectual Property Subcommittee, have publicly expressed their concerns to the Office that “‘serial and repetitive attacks,’ even by different petitioners, weigh against institution. *See, e.g.*, Ex. 2014 [Tillis–Coons Ltr.], 1-2 (stating that “follow-on petitions attacking the same claims and asserting new or modified arguments—either by the same petitioner or different petitioners...impose an undue burden on patent owners and harm innovation,” expressing the view that *General Plastic* is too forgiving a standard for discretionary denial, and asking Director whether he will “adopt a presumption that, when the PTAB has already issued a decision on institution with respect to a particular patent, further petitions, whether by the original petitioner or

are, like *General Plastic*, directed specifically to discretionary denial, but these concerns go beyond that narrow context, and extend to the merits of “refin[ing]” follow-on obviousness challenges on the “lessons learned” from the rejections of previous challenges. *Code200* (precedential), 5. Indeed, long before the creation of IPRs, it has been the law that failed validity challenges weigh against subsequent attacks—even when the attacks are brought in different cases, by different, later challengers, and particularly when such challenges allege obviousness as discussed below.

B. The Denial Of The Prior Challenge Is Entitled To Weight.

A tribunal’s prior decision “on the same legal issue,” including a prior decision on the ultimate issue of obviousness, is entitled to “deference” in later cases on the same issue. *Mendenhall v. Cedarapids, Inc.*, 5 F.3d 1557, 1569-1570 (Fed Cir. 1993). More specifically, “[a] prior decision that a patent has previously survived an attack on its validity” informs later courts “that caution must be taken in reaching a contrary legal conclusion,” even when the references and challengers differ between the earlier and later cases. *Id.*; see *Radio Corp. of Am. v. Radio Eng’g Labs.*, 293 U.S. 1, 8 (1934) (“a stranger to a patent suit does not avoid

different petitioners, will not be entertained in the absence of compelling circumstances”).

altogether the consequences of a judgment rendered in his absence by establishing his privilege under the doctrine of *res judicata* to try the issues over again”); *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1359 (Fed. Cir. 2001) (“that the patent in suit had successfully withstood previous validity challenges in other proceedings” presents “a clear case supporting the validity of the patent”); *Gillette Co. v. S.C. Johnson & Son, Inc.*, 919 F.2d 720, 723 (Fed. Cir. 1990) (“that the validity of those claims has previously been upheld in an earlier litigation is also to be given weight”); *Custom Accessories, Inc. v. Jeffrey-Allan Indus.*, 807 F.2d 955, 961 (Fed. Cir. 1986) (failed prior challenges are “evidence the court must consider”); *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 711 (Fed. Cir. 1983) (“prior holding of ‘validity’ should be given weight in a subsequent suit on the issue of ‘validity’”); *Farmhand, Inc. v. Anel Eng’g Indus.*, 693 F.2d 1140, 1143-1144 n.6 (5th Cir. 1982) (“previous determination of validity is one factor which a court or jury may consider in deciding whether a patent is valid”); *B&H Mfg. v. Foster-Forbes Glass Co.*, 26 U.S.P.Q.2d (BNA) 1066, 1070, 1993 U.S. Dist. LEXIS 21432, *15 (N.D. Ind. 1993) (prior judgment rejecting validity challenge “give[n]...weight”); *Multi-Tech Sys., Inc. v. Hayes MicroComputer Prods., Inc.*, 800 F. Supp. 825, 832-833 (D. Minn. 1992) (case for patent’s validity strengthened by “the prior adjudication affirming its validity”); *Jenn-Air Corp. v. Modern Maid Co.*, 499 F. Supp. 320, 323 (D. Del. 1980) (“prior

adjudication of validity rendered on relevant grounds” is “independent evidence in support of validity”).

The challenger in the second action “has the burden of demonstrating that there is a material distinction between his case and the prior case holding the patent ‘valid.’” *Stevenson*, 713 F.2d at 711 n.5. It is significant if the cases are “before entirely different factfinders,” or involve different standards of proof, *Mendenhall*, 5 F.3d at 1571, but where both are before the same factfinder under the same standards, the factfinder may treat his findings in the first case as relevant in the second, *see id.*, 1572; *Supernus Pharms., Inc. v. TWi Pharms., Inc.*, 265 F. Supp. 3d 490, 519 n.13 (D.N.J. 2017), *aff’d*, 747 Fed. Appx. 852 (Fed. Cir. 2018).

A denial of institution on the merits is entitled to significant weight in a later IPR against the same patent. Unlike a decision to institute, which is decided on a low threshold and is preliminary, a decision to **deny** institution is decided on the opposite threshold (**lack** of reasonable likelihood), and is final. Nor does the fact that denials are unappealable by statute deprive them of weight. *See* MOORE’S FED. PRAC. § 131.30[2][c][ii] (2000) (“The fact that no appeal of [a judgment in an earlier action] was authorized by the governing law does not change its preclusive effect”) (citing “*Johnson Steel St. Rail Co. v. William Wharton Jr. & Co.*, 152 U.S. 252, 256-257 [] (1894) (res judicata does not depend on availability of appeal)”).

C. Failure Of The Prior Challenge Is Evidence Of Nonobviousness.

Furthermore, much as prior acquiescence and licensing and prior failed attempts to make the invention are objective indicia of nonobviousness, *see, e.g., PPC Broadband, Inc. v. Corning Optical Commns. RF, LLC*, 815 F.3d 734, 746 (Fed. Cir. 2016), so too are prior failed obviousness challenges. The fact “that the patent in suit had successfully withstood previous validity challenges in other proceedings” presents “a clear case supporting the validity of the patent.” *Amazon.com*, 239 F.3d at 1359; *see Beloit Corp. v. Valmet Corp.*, 1997 U.S. Dist. LEXIS 21329, at *11-12 (W.D. Wis. July 15, 1997) (granting summary judgment of nonobviousness, citing “secondary evidence of validity because a jury found [the claims] not invalid in [prior] litigation”).

Where obviousness challenges use prior challenges as a roadmap, it is particularly logical that the prior failed challenges become objective indicators of nonobviousness. As the Supreme Court has explained, even if a prior unsuccessful validity challenge does not bar a later challenge raising different references, the fact that these references “were not called to the attention of the prior court is likely to open them to suspicion.” *Mast, Foos & Co. v. Stover Mfg. Co.*, 177 U.S. 485, 488-489 (1900). That is logical: the reason they were not raised in the first case is likely that, without the benefit of the roadmap from that case, they would

not have been selected. But obviousness must not be based on hindsight. Using the first challenge as the guide to the second is the quintessence of hindsight.

Petitioner contends that its “review and consideration of the record in IPR2021-01468” as its guide to crafting its revised obviousness grounds here does not constitute “us[ing] the Dell IPR as a ‘roadmap’ to craft invalidity positions.” Pet., 115. Logic and Board precedent are to the contrary. Precedent views “road-mapping” as exactly what Petitioner is doing: basing a subsequent challenge on analysis articulated in a decision denying institution of an earlier challenge, with “the opportunity to morph positions along the way.” *Gen. Plastic* (precedential), 11, 17; *Code200* (precedential), 5; *see also Amkor*, IPR2017-00085, Paper 12, 10 (describing and disfavoring “follow-on petitions that attempt to fix deficiencies in a previous petition that were explained in a previous decision on institution”).

Such hindsight “road-mapping” logically is an indicator of nonobviousness, because of how the knowledge of a person of ordinary skill in the art is defined. “The person of ordinary skill in the art [(‘POSITA’)] is a hypothetical person who is presumed to have known the relevant art at the time of the invention.” MPEP § 2141(II)(C). But the POSITA is **not** presumed to have knowledge of events after the invention was made, such as attempts to invalidate the patent. “It is difficult to imagine a patent law suit in which [a challenger] is unable to add some new ‘pertinent’ art,” but nevertheless, the law of obviousness requires “that the

decisionmaker forget what he or she has been taught about the claimed invention and cast the mind back to the time the invention was made (often as here many years), to occupy the mind of one skilled in the art who is presented **only** with the references, and who is normally guided by the then-accepted wisdom in the art.” *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983) (alteration marks omitted, emphasis added). While the POSITA knows the prior art at the time of the invention, he knows “only” what is **prior** art, *id.*, and is “guided **only** by the **prior** art references and the **then**-accepted wisdom in the field,” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) (emphases added). It is “hindsight” to analyze obviousness as if the POSITA has knowledge of “the blueprint drawn by the inventor.” *Id.*; *accord Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (“To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction”); *Gore*, 721 F.2d at 1553 (“To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”). But if it is hindsight to imbue the POSITA with knowledge of the blueprint drawn in the **patent**, it would be hindsight on stilts to imbue the POSITA with knowledge of the

roadmap laid down by *much later* failed obviousness challenges to the patent, which can only be based on even greater hindsight. “It is not pertinent that the invention was easily understood *after* it was made... but whether it would have been obvious to make the invention *at the time*.” *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1144 (Fed. Cir. 1985) (emphases added). Accordingly, when obviousness challenges are, like this one, based on review and consideration of a prior unsuccessful challenge, it is an indicator of nonobviousness.

At minimum, it should be presumed that, to the extent the follow-on obviousness challenge differs from the prior challenge it used as a guide, those differences are based on hindsight, which objectively weigh against finding obviousness. *See Stevenson*, 713 F.2d at 711 n.5 (second challenger “has burden of demonstrating that there is a material distinction between his case and the prior case holding the patent ‘valid.’”). The Petition concedes that it refined its grounds in ways Petitioner hopes directly address the reasons that the 01468 panel gave for denying trial. Section § V.A *supra*. But Petitioner offers no other reasons the POSITA would have instead turned to these different combinations—which, “suspicio[usly],” “were not called to the attention of the prior court,” *Mast*, 177 U.S. at 488-489—*except* these lessons learned from the prior case. Therefore, Petitioner does not overcome the “susp[icion]” that, “[a]bsent any explanation to

the contrary,” the reason for the differences is “impermissible hindsight.” *Harris Corp. v. Fed. Express Corp.*, 502 Fed. Appx. 957, 967 (Fed. Cir. 2013).

* * *

For these reasons, the rejection of the prior IPR weighs against institution, both as to discretion and on the merits.

VI. CONCLUSION

Patent Owner respectfully requests denial of institution.

Respectfully submitted,

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Date: July 13, 2023

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Preliminary Response (the “POPR”) consists of **13,953** words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POPR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/ Abigael Neufeld /

Date: July 13, 2023

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following documents were served by electronic service, by agreement between the parties, on the date below:

PATENT OWNER'S PRELIMINARY RESPONSE

EXHIBITS 2001-2008 and 2014

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