

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

COBBLESTONE WIRELESS, LLC,
Patent Owner.

Case No. IPR2024-00318
U.S. Patent No. 8,554,196

PETITIONER'S REQUEST FOR DIRECTOR REVIEW

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Petitioner respectfully requests that the Director review the Board's denial of institution in this proceeding. In denying institution, the Board abused its discretion by reading in new limitations that exclude preferred embodiments described in the specification.

The claims of the '196 Patent are directed to methods and apparatuses for providing cellular network coverage by "cycling over time" between multiple "coverage configurations" comprising different network beams covering different devices. For example, Claim 1 recites cycling over time between two coverage configurations that comprise, *inter alia*: (1) a beam of a first network (such as a 4G wide beam); and (2) a narrower beam of the first network as well as coverage by an additional second network (such as a 3G network). As claimed, the first coverage configuration provides coverage to a group of devices, and the second coverage configuration provides the narrow-beam coverage to a "continuous use device" (*e.g.*, a mobile phone engaged in an active phone call or data stream) as well as second network coverage to "interval use devices" (*e.g.*, mobile phones not engaged in data intensive tasks, but rather receiving intermittent updates such as email).

Challenged Claim 14 similarly recites cycling over time between coverage configurations that each involve coverage by both the first and second networks (such as coverage by both 3G and 4G networks), but requires three coverage configurations as set forth below:

	1 st set of devices	2 nd set of devices
1 st coverage configuration	• First beam of first network (4G)	• Coverage by second network (3G)
2 nd coverage configuration	• Coverage by second network (3G)	• Second beam of first network (4G)
3 rd coverage configuration	• Narrower beam of first network (4G) to continuous use device • Coverage by second network (3G) to interval use devices	

Notably, Claims 1 and 14 are comprising claims and, as such, do not limit what else could be included in those configurations. For example, the claims do not prohibit the second network from providing coverage for all devices across all coverage configurations—they only require that it **must** provide coverage to certain devices in certain configurations. The Board, however, erred in denying institution based on a misapprehension and misapplication of the plain claim language.

Specifically, Petitioner requests review of the Board’s rejection of the Petition’s third ground based on the combination of Dinan’s simultaneous 3G/4G coverage with Wong’s cycling of 4G coverage beams. In rejecting this combination, the Board required that the combination show cycling of **the second network** and not just cycling of each **coverage configuration**. The Board’s legally erroneous narrowing of the claims effectively reads in negative limitations (*e.g.*, that the second network **must not** provide coverage to certain devices in each of the claimed coverage configurations) and, therefore, reads out the specification’s preferred embodiment—indeed, the specification’s **only** embodiment for claim 14. The

Board’s conclusion is therefore legally erroneous and the Director should grant this request, vacate the decision, and institute *inter partes* review.

LEGAL STANDARD

The Director may review the Board’s decision whether to institute trial in an AIA proceeding for abuse of discretion. Revised Interim Director Review Process, § 5(A)(ii)(c). ““An abuse of discretion is found if [a] decision: ... is based on an erroneous conclusion of law....”” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

BACKGROUND

A. U.S. Patent No. 8,554,196 (Ex. 1001)

The ’196 Patent is directed to “network coverage by cycling through beam shape coverage configurations.” Ex. 1001, Abstract. In general, their purpose is to provide “more capable network” coverage (such as 4G) to devices that have high usage while providing “less capable network” coverage (such as 3G) to devices that do not. *Id.*, 4:23-40. The system cycles through different coverage configurations depending on which devices require higher or lower usage—and may provide wider or narrower beams depending on such requirements.

For example, three such coverage configurations are depicted and described in Figures 4A through 4C. *See id.*, 11:33-12:23. In these figures, the system cycles through three coverage configurations where the “more capable network” is targeted at different groups of devices depending on the coverage configuration, while a static

“less capable network” covers devices that have less usage requirements. *Id.*; see also *id.*, 10:46 (“[T]he less capable network may be a substantially **static** network that may not require control techniques ... to be used in the various configurations discussed herein.”).

Thus, in Figure 4A’s first coverage configuration, annotated below, the “more capable network” provides “wide beam coverage” via “beam shape 440” (in green) to devices 101 through 104, and the “less capable network” provides overlapping, static “coverage 490” (in red) to the remaining devices. *Id.*, 11:36-49, 12:12-15.

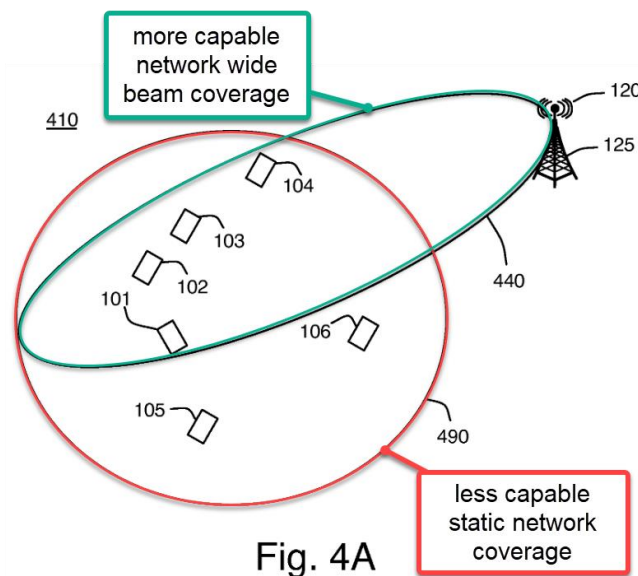


Fig. 4A

The system may then cycle to the second coverage configuration depicted in Figure 4B, where the “more capable network” provides “wide beam coverage” via a different “beam shape 450” to a second set of devices 101, 105, and 106, while the “less capable network” continues to provide the same overlapping, static “coverage 490” to the remaining devices. *Id.*, 11:50-58.

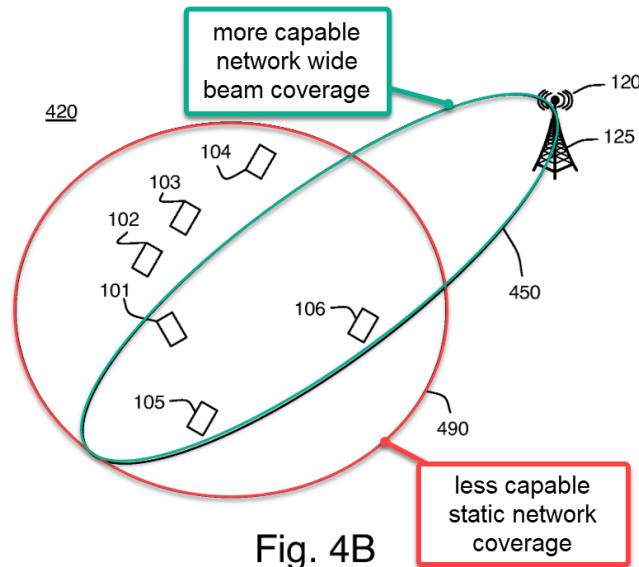


Fig. 4B

Finally, the system may cycle to the third coverage configuration depicted in Figure 4C, where now the “more capable network” provides “narrow beam coverage” to a single “continuous use device 101,” with the “less capable network” continuing to provide the same overlapping, static “coverage 490” to remaining devices. *Id.*, 12:4-23.

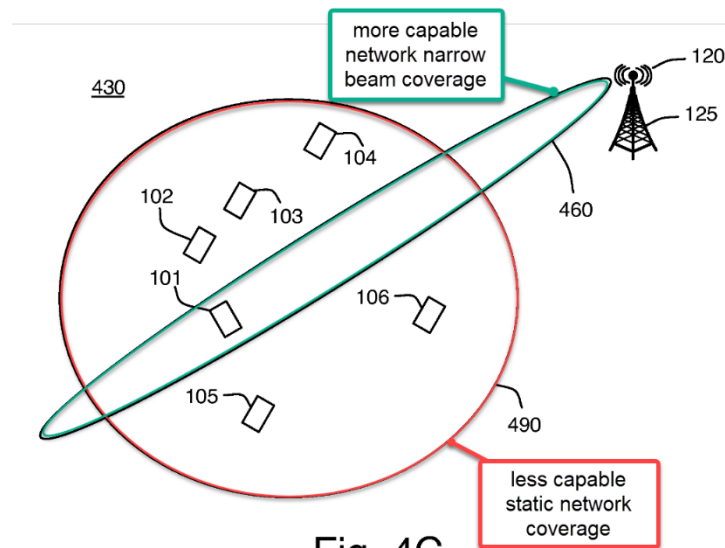


Fig. 4C

The specification describes that, as the system cycles through different coverage configurations, the coverage beam from the more capable network may be adjusted and narrowed/widened depending on device needs, whereas the less capable overlapping network may be static and provide coverage to all devices. *Id.*, 4:5-9 (less capable network coverage “may be provided at all times”), 5:24-26 (“In some examples, [less capable] network coverage 170 may provide coverage **for all devices** including continuous use devices and interval use devices.”).

The independent claims of the ’196 Patent reflect these descriptions in the specification, though more broadly refer to the “more capable network” as the “first network” and the “less capable network” as the “second network.” *Cf. id.*, 9:42-43 (“In some examples, the [more and less capable] networks may be of the same type.”). For example, Claim 14 recites “cycling over time” through:

the first coverage configuration includes transmitting a first beam of a first network that is configured to provide coverage for a first set of the group of devices, and providing coverage by a second network to at least a second set of the group of devices;

the second coverage configuration includes transmitting a second beam of the first network that is configured to provide coverage for the second set of the group of devices, and providing coverage by the second network to at least the first set of the group of devices; and

the third coverage configuration includes transmitting a third beam of the first network that is narrower than the first beam and is configured to provide coverage to at least one continuous use device of the group of devices, the at least one continuous use device being actively involved in a substantially continuous service with the network, and providing coverage by the second network to at least a plurality of interval use devices of the group.

Similarly, Claim 1 recites “cycling over time” through:

the first coverage configuration includes transmitting a first beam of a first network that is configured to provide coverage for the group of devices; and

the second coverage configuration includes transmitting a second beam of the first network that is narrower than the first beam and configured to provide coverage to at least one continuous use device of the group of devices, the at least one continuous use device being actively involved in a substantially continuous service with the network, and providing coverage by a second network to a plurality of interval use devices of the group of devices.

Although Claim 1’s “first coverage configuration” does not require second network coverage, Claim 1 is a comprising claim and therefore does not preclude a static second network during the first coverage configuration. Indeed, the ’196 Patent explains that “the less capable network may be a substantially static network ... to be used in the various configurations discussed herein.” Ex. 1001, 10:46. The specification also expressly discloses that coverage by the less capable network “may be provided at all times” and “for all devices.” *Id.*, 4:5-9, 5:24-26.

Despite the specification’s express teachings that the second network can be static and omnipresent, the Board’s decision ignores these teachings and the claim language itself, erroneously requiring cycling through different coverages of the second network such that coverage by the second network must be dynamic (not static as disclosed in the specification). *ID*, 27-29 (rejecting the Petition’s prior art combination in which the second, less capable network is static).

B. The Petition’s Dinan and Wong Combination

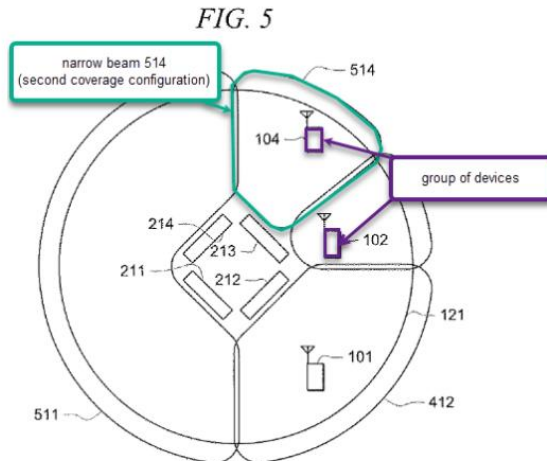
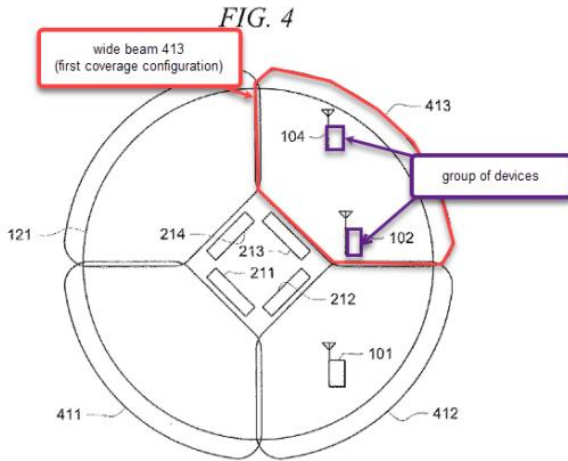
The Petition presented three grounds challenging claims 1 and 14. This

Request focuses on the Petition’s third ground that relies on the combination of Dinan and Wong. Dinan teaches a system that provides simultaneous and overlapping 3G/4G coverage to devices, assigning devices to either 3G or 4G depending on the “QoS categor[y]” needed by the device. Ex. 1007, 7:19-22, 11:48-49. Wong teaches a 4G system that uses a scheduler to cycle through different “antenna patterns” of wide and narrow beams of a 4G network. Ex. 1006, 6:37-40.

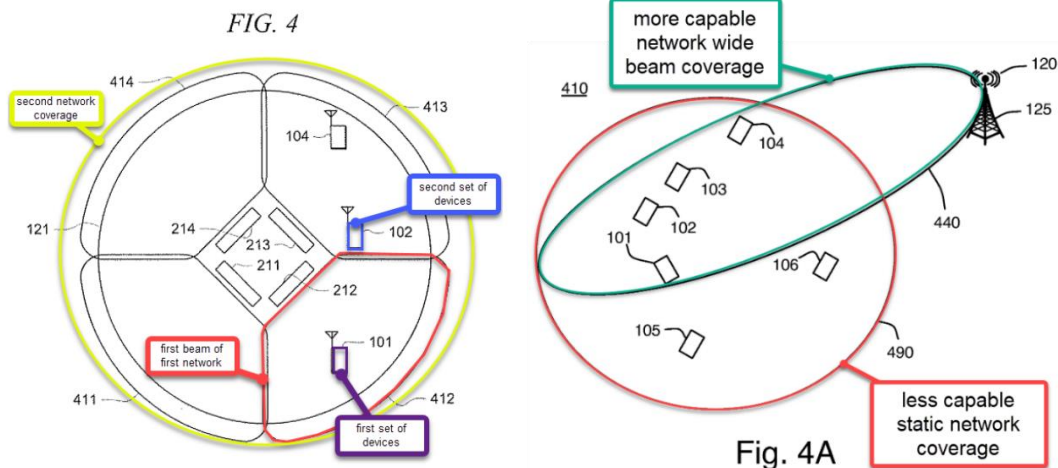
The Petition provided evidence that a POSITA would have been motivated to combine Dinan and Wong where Dinan’s system provides simultaneous 3G/4G coverage, and “Dinan’s provision of 4G service ... incorporate[s] Wong’s teachings of using antenna patterns” to cycle through wide and narrow beams of the 4G network while Dinan’s 3G network is provided “at all times.” Pet. 43; Ex. 1003, ¶¶153-59.

In mapping the combination to the claims of the ’196 patent, for each coverage configuration, the Petition mapped Wong’s 4G antenna patterns to the first network coverage and Dinan’s 3G coverage to the second network coverage.

For Claim 1, the Petition mapped the “first coverage configuration” to Wong’s 4G “wide beam 413” (annotated in red) and the “second coverage configuration” to Wong’s 4G “narrow beam” antenna pattern 514 (annotated in green), as shown below. Pet. 47-52. The Petition further specified that the “second coverage configuration” includes “3G coverage described in Dinan.” Pet. 48, 53-54.



For Claim 14’s coverage configurations, the Petition similarly mapped the first network coverages to different 4G antenna patterns in Wong, while mapping the second network to Dinan’s 3G coverage of all devices at all times, including any not covered by the 4G antenna patterns. Pet. 59-63. As shown below, the Dinan-Wong coverage configurations read directly on the ’196 embodiment in Figures 4A through 4C where a “more capable network” changes its beam shape and coverage while the “less capable network” remains static and covers remaining devices.



First Coverage Configuration: Petition (left) vs. Preferred Embodiment (right)

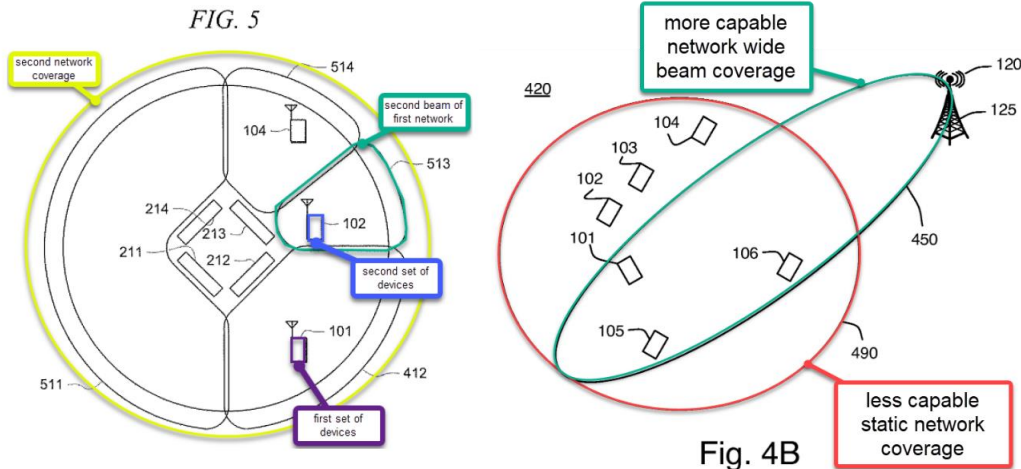


Fig. 4B

Second Coverage Configuration: Petition (left) vs. Preferred Embodiment (right)

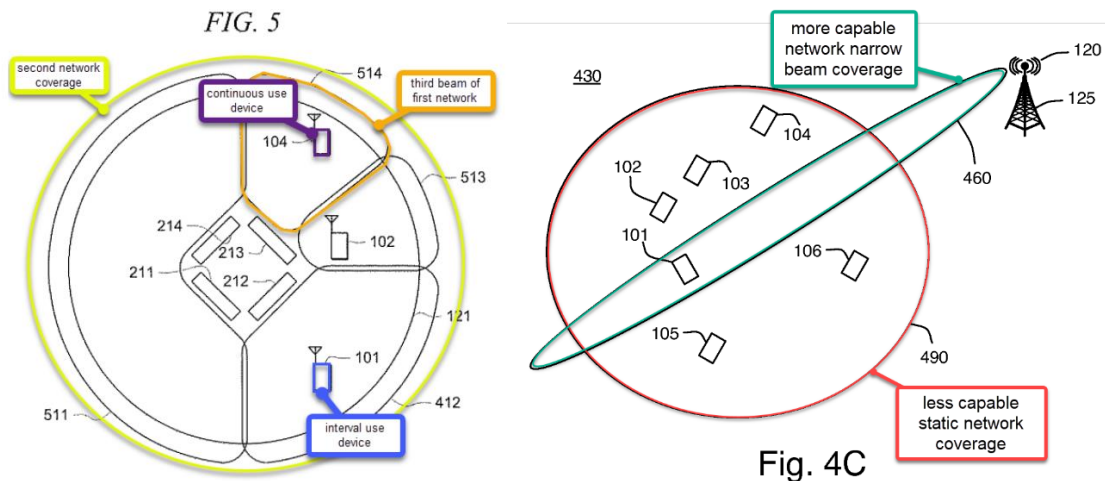


Fig. 4C

Third Coverage Configuration: Petition (left) vs. Preferred Embodiment (right)

C. The Institution Decision

The Board erroneously rejected the Petition's arguments, including Ground 3's Dinan-Wong combination. For Ground 3, the Board recognized that Wong discloses "cycling over time" through "coverage configurations for 4G communications." Paper 15 ("ID") at 27. The Board also recognized that Dinan discloses simultaneous 4G and 3G coverage and found no fault with the Petition's

motivation to combine Dinan and Wong. *Id.* at 27-29. However, the Board rejected Ground 3 on the basis that “[t]he Petition ... does not show that Wong’s scheduler 242 would have been used to invoke schedule plans for antenna patterns emanated by base stations in Dinan’s 3G network.” *Id.* at 29. But, as explained above, the second network (3G) may be a static, omnipresent network, and there is no basis for the Board’s requirement that its antenna patterns be modified by a scheduler.

Additionally, the Board’s reasons for rejecting claim 14 merely state that “Petitioner’s arguments ... do not remedy the deficiency discussed with respect to claim 1”—the Board did not engage with the Petition’s specific arguments and evidence for Claim 14, even though (because of the different claim language) they differed from those of Claim 1. *Id.* at 30. This too resulted in error.

Although the Board recognized that the combination provides simultaneous 3G/4G coverage, and that the combination teaches cycling through 4G coverage configurations, the Board denied the Petition because it imposed a requirement that the claimed second network cannot be static and must cycle through different 3G coverages. This holding is wholly inconsistent with both the claim language and the express teachings of the specification, which plainly state that the “second network” may be static and present at all times for all devices. The claims only require cycling through **coverage configurations**, and the specification expressly teaches this is met by cycling through different first network coverage beams while the second network

remains static. The Board’s denial of institution is, therefore, based on a legally erroneous application and understanding of the claims.

ARGUMENT

A. The Board Abused Its Discretion By Adding In New Limitations And Excluding the Specification’s Preferred Embodiments

In requiring Petitioner to prove that Wong’s scheduler cycled through the “second network” 3G coverage, the Board narrowed the claims to preclude the use of a static second network—precisely what the specification disclosed. The Board added new limitations and excluded the specification’s preferred embodiments and teachings, and thus abused its discretion in denying institution.

A “bedrock principle” of patent law is that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). Thus, it is legal error to “read[] limitations into the claims.” *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1326 (Fed Cir. 2012). More than that, however, is the principle that a claim interpretation which “excludes a preferred embodiment is rarely, if ever correct.” *Kaufman v. Microsoft Corp.*, 34 F. 4th 1360, 1372 (Fed. Cir. 2022).

The Board violated both principles and committed legal error.

1. The Board Abused its Discretion By Excluding Preferred Embodiments

The Board abused its discretion by rejecting the Petition’s Dinan-Wong combination that cycles through different 4G beam coverages while a 3G network

provides static coverage to remaining devices. The Board instead required Petitioner prove cycling through different 3G coverages, excluding the preferred embodiments described in the specification—including the **only** embodiment for claim 14.

As discussed above, the specification of the '196 Patent expressly teaches that the second “less capable network may be a substantially **static network** ... to be used in the various configurations discussed herein” and “may be provided at all times” and “for all devices.” Ex. 1001, 4:5-9, 5:24-26, 10:46. This is illustrated in the coverage configurations depicted in Figures 4A through 4C—the **only** embodiment that discloses Claim 14’s coverage configurations. These figures depict each coverage configuration with the same **static** second network coverage 490. See Ex. 1001, 11:33-12:24. Thus, cycling through coverage configurations includes cycling through different **first network** coverage beams with static second network coverage.

The Petition’s Dinan-Wong combination operates in **exactly the same manner**. As the Petition explained, the combination begins with “Dinan’s system for providing simultaneous 3G/4G coverage” and then “modif[ies] Dinan’s provision of 4G service to incorporate Wong’s teachings of using antenna patterns for providing wireless services.” Pet. 42-43. The Petition then explained how each coverage configuration comprises one of Wong’s 4G antenna patterns with Dinan’s static 3G coverage. See Pet. 47 (Wong’s “antenna pattern 413” is “the first coverage configuration” of claim 1), 48 (Wong’s “[a]ntenna pattern 514, along with 3G

coverage described in Dinan, constitutes the second coverage configuration” of claim 1), 59-60 (Wong’s “antenna pattern 412” and Dinan’s “3G coverage” constitutes a “first coverage configuration” of claim 14), 61 (Wong’s “antenna pattern 513” and Dinan’s “3G coverage” constitutes a “second coverage configuration” of claim 14), 62-63 (Wong’s “antenna pattern 514” and Dinan’s “3G coverage” constitutes a “third coverage configuration” of claim 14).

Thus, it was not necessary to “show that Wong’s scheduler 242 would have been used to invoke schedule plans for antenna patterns emanated by base stations in Dinan’s 3G network.” ID at 29. All that was necessary was to show that, in the combination, Dinan provides static 3G coverage while Wong’s 4G antenna patterns are cycled, which the Petitioner proved and the Board acknowledged. ID at 27-29. Thus, the Board abused its discretion by relying on a legally erroneous understanding of the claims to reject the Dinan-Wong combination’s use of static second network coverage, as expressly taught by the ’196 Patent.

2. The Board Abused its Discretion By Adding In New Limitations

A related, but separate, problem with the Board’s decision is that—contrary to the plain language of the claims—the Board inserted new limitations “cycling over time” of both first and second network coverages.

All the independent claims recite “cycling over time through a coverage sequence” that includes various coverage configurations. But nothing in the claim

language requires cycling through different coverage beams for **both** the first and second networks. The Board's requirement to the contrary is an abuse of discretion.

This is especially clear for Claim 1's first coverage configuration, which recites no requirements for the second network: "the first coverage configuration includes transmitting a first beam of a first network that is configured to provide coverage for the group of devices." As a comprising claim, Claim 1's "list of elements is nonexclusive." *Dippin'Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed. Cir. 2007). Accordingly, nothing precludes Claim 1's first coverage configuration from also providing second network coverage. Yet the Board violated this rule by requiring Petitioner to show some difference with respect to the second network between the first and second coverage configurations. In requiring that Petitioner show "'cycling over time' to a 'second coverage configuration' that provides coverage by Dinan's 3G network," the Board requires that the first coverage configuration of Claim 1 **cannot** use the second network. This is plainly not the case based on the claim language and the embodiments disclosed in the specification.

Thus, the Board abused its discretion by adding a new limitation that there must be cycling through second network coverages.

CONCLUSION

For all the foregoing reasons, Petitioner respectfully requests Director Review of the Board's institution decision, and that the decision be vacated and reversed.

Respectfully submitted,

Dated: July 22, 2024

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CERTIFICATE OF SERVICE

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