

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

WIRELESSWERX IP LLC,
Patent Owner.

Case No. IPR2023-00850
U.S. Patent No. 8,315,203

**CORRECTED REPLY IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,315,203**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	CLAIM CONSTRUCTION	2
A.	“the most practically near node”	2
1.	The Parties Have Applied The Same Meaning.....	2
2.	Patent Owner’s Proposed Construction Is Inaccurate	3
III.	ARGUMENTS	4
A.	Elements 1[Diii] And 6[G]: “the most practically near node” And “the most practically near transponder”	5
1.	The Petition Does Not Rely On Wrappe Alone For “The Most Practically Near” Node Or Transponder	7
2.	Belcea Teaches Identifying The Nearest Node Or Transponder On The Same Floor As The User Device	9
B.	Element 6/29/30[C]: “communicating between at least one transponder to the mobile user and between at least one transponder”	12
C.	Patent Owner’s Citation To <i>Apple v. Contentguard</i> Is Inapposite	14
D.	No Separate Disputes Regarding Remaining Claims and Prior Art Grounds	15

I. INTRODUCTION

Patent Owner’s Reply does not identify any bases on which to uphold the patentability of the Claims 1–30 of the ’203 Patent in view of the Grounds raised in the Petition. There is no dispute about the priority date of the patents, the level of skill in the art, or the applicability of the prior art references Wrappe, Belcea, Christopher, and Kinnunen as prior art to the ’203 Patent. And while Patent Owner suggests a construction for “the most practically near node,” there is no material dispute regarding the scope of that term.

Instead, Patent Owner asserts attorney arguments to argue that the combination of Wrappe and Belcea does not render obvious: (A) elements 1[Diii] and 6[G] regarding the “most practically near” node and transponder, and (B) element 6/29/30[C] regarding nodes communicating with each other. But Patent Owner’s attorney arguments fail to distinguish the prior art disclosures and expert testimony cited in the Grounds of the Petition. As the Petition and Petitioner’s expert explained: (A) Wrappe teaches identifying a nearest node in, for example, a multi-story mall, and Belcea teaches additional implementation details for identifying a nearest node on the same floor as a user; and (B) Wrappe and Belcea both teach relaying data through node networks.

II. CLAIM CONSTRUCTION

A. “the most practically near node”

The term “the most practically near node” does not need construction because (1) the Parties have applied the same meaning and (2) the Patent Owner’s proposed construction adds ambiguity and fails to capture the meaning that both Patent Owner and Petitioner have applied.

1. **The Parties Have Applied The Same Meaning**

For the purpose of this proceeding, there is no material difference between how Petitioner and Patent Owner interpret this term, and claim construction is therefore not necessary to resolve this dispute. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’”).

The construction that the Patent Owner applies is that “the most practically near node” is the node that is closest to the movable entity while being on the same floor as the user. *See* Paper 11 at 14–15, 19–29. The Petition applies that same understanding, explaining that the combination of Wrappe and Belcea renders obvious identifying a node that is on the same floor as the user because “the system identifies a beacon ‘nearby’ on the same floor.” Paper 1 at 38. Thus, the Grounds

of the Petition meet both Parties’ applications of the term “the most practically near node.”

2. Patent Owner’s Proposed Construction Is Inaccurate

Patent Owner proposes that “the most practically near node” should be defined as “the node that is located at the closest accessible location to the movable entity.” Paper 11 at 7. Both the “located at the closest accessible location” and “the movable entity” portions of Patent Owner’s proposed construction introduce inaccuracy and ambiguity to the term.

The “located at closest accessible location” portion of Patent Owner’s proposed construction merely substitutes a different phrase for “most practically near” without clarifying the meaning of the original phrase. *Id.* In fact, the construction “located at the closest accessible location” is inconsistent with the patent’s description and both parties’ application of that term. The ’203 Patent describes that a node is not a “most practically near node” if it is on a different floor from the user. *Id.* citing Ex-1001, 6:55–57. Patent Owner likewise applies “the most practically near node” to mean that the node must be on the same floor as the user, as demonstrated in the previous section. *Id.* at 14–15, 19–29. But replacing “most practically near” with the phrase “located at the closest accessible location” fails to capture that concept because a node on another floor can still be

the closest in straight-line distance (e.g., if the user is standing right above it) and accessible (e.g., by stairs or elevator).

Patent Owner’s proposed construction further adds the phrase “to the movable entity” despite the fact that there is no mention of a movable entity in the term “the most practically near node.” There is also no mention of a “movable entity” in the claims. Thus, adding that phrase to the claims via claim construction would add ambiguity regarding whether the “movable entity” is an additional claim element or whether it refers to another element that is already recited.

For these reasons, the entirety of Patent Owner’s proposed construction should be rejected as unnecessary, inaccurate, and adding ambiguity to the claims.

III. ARGUMENTS

Patent Owner broadly asserts that the Petition fails to apply the *Graham* factors—(1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of non-obviousness, i.e., secondary considerations. Paper 11 at 12 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). But Patent Owner does not dispute either the level of skill in the art (*see* Paper 11 at 7–8) or raise any objective evidence of non-obviousness (*see* Paper 11 *generally*). Thus, only the first two *Graham* factors—(1) scope and content of the prior art and (2) any differences between the claimed subject matter and the prior art—are disputed.

And Patent Owner only disputes the analysis of those factors for two groups of limitations: (A) “the most practically near node” (element 1[Diii]) and “the most practically near transponder” (element 6[G]); and (B) “communicating between at least one transponder to the mobile user and between at least one transponder” (element 6/29/30[C]). Paper 11 at 20–21, 26–27. As explained in further detail in the first two subsections below, Patent Owner’s arguments regarding those two elements fail to identify deficiencies in the Petition’s Grounds. The third section addresses Patent Owner’s Argument regarding *Apple, Inc. v. Contentguard Holdings, Inc.*, IPR2015-00355, Paper 9 at 9–10.

A. Elements 1[Diii] And 6[G]: “the most practically near node” And “the most practically near transponder”

Patent Owner contends that the Grounds do not teach “the most practically near” node or transponder elements. But the Petition explains how Wrappe in combination with Belcea renders obvious claim limitations 1[Diii] and 6[G], which recite identifying “the most practically near node” and “the most practically near transponder.” Paper 1 at 34–39, 59–60. Specifically, Wrappe teaches an indoor location system that uses wireless nodes to identify the location of a user in a building and send pertinent information to the user from a nearest node, e.g., from the node of the store where the user is located. Paper 1 at 11–14. And Belcea teaches an indoor location system that uses horizontal nodes across a floor and vertical nodes in a stairwell or elevator shaft to have three-dimensional node

coverage in a multi-floor building. *Id.* at 14–16. Belcea teaches that because certain types of signals do not travel well through floors and walls, the Belcea system and algorithm can use the difference in signals along with other data to determine which floor the user device is on. *Id.* at 38. The Petition explains that a POSITA implementing Wrappe would have been motivated to apply this teaching of Belcea to ensure that the Wrappe system sends information from the node of the correct store rather than the node of a store above or below the user. *Id.* at 38.

As described in the Section II (Claim Construction) above, the Parties agree that “the most practically near node” term includes a node closest to and on the same floor as the user device. Patent Owner and Petitioner also agree that the “node” and “transponder” have the same role in the claims for purposes of this IPR. *See* Paper 11 at 24 (citing its arguments for 1[Diii] and as its arguments for 6[G]); Paper 1 at 46–47 (explaining that the claimed “transponder” has the same role as the claimed “nodes”). Thus, as explained in the Petition and summarized above, Wrappe and Belcea render 1[Diii] and 6[G] obvious. Patent Owner Reply counters with two arguments: (i) Wrappe does not describe narrowing to the single closest node on the same floor; and (ii) while Belcea does identify the closest node on the same floor, it fails to apply a particular algorithm or order of steps to do so. As detailed below, Patent Owner’s arguments are not supported by any evidence. Moreover, Patent Owner’s arguments regarding Wrappe are inconsistent with the

prior art and Petition. And Patent Owner’s arguments about Belcea apply a claim construction that is not commensurate with the scope “the most practically near node” as that term is used in the ’203 Patent and not consistent with Patent Owner’s own proposed construction of that term.

1. The Petition Does Not Rely On Wrappe Alone For “The Most Practically Near” Node Or Transponder

Patent Owner argues that Wrappe alone fails to teach elements 1[Diii] and 6[G]. Paper 11 at 16. This argument is misplaced.

Patent Owner begins by arguing that “Wrappe does not narrow the plurality of nodes for use by the user.” Paper 11 at 16. This misstates Wrappe, which does disclose narrowing down the plurality of nodes corresponding to different stores to a single node of the store that is nearest the user. As the Petition describes, Wrappe teaches adjusting beacon signals so that it is clear which beacon is the beacon for a particular store. Paper 1 at 12, 34–35 (citing Ex-1005 ¶46 (describing its microcell beacons system as solving the prior art system problem of “not be[ing] precise enough to accurately determine which store the mobile station is in”)). By doing so, Wrappe identifies the closest beacon to a user as being the beacon of the store where the user device is located. *Id.* at 34 (citing Ex-1002 ¶167 (“a POSITA would have understood Wrappe to teach the mobile station determining the closest microcell beacon in a store so the mobile station can receive a signal for a store”). By narrowing down and identifying the closest beacon in the right store, the

system can use the beacon to send information related to the store to the user device. *Id.* at 13–14 (citing Ex-1005 ¶47), 34 (citing Ex-1002 ¶167); Ex-1002 ¶¶97–99.

Patent Owner then argues that Wrappe alone does not identify a node or transponder that is *on the same floor* as the user device. Paper 11 at 16–17. But the Petition did not rely upon Wrappe alone for identifying a node or transponder on the same floor. Rather, the Petition relied upon Wrappe in combination with Belcea. Paper 1 at 34–39, 59–60. The Petition notes that Wrappe teaches that its system can be used for “altitude aiding,” such as “the altitude of a floor or building where the micro cell beacon is installed.” Paper 1 at 31–32, 22–23, 26. And Petitioner’s expert explained how Wrappe teaches that nodes broadcast their altitudes, thereby teaching that nodes could be distributed across multiple floors. Ex-1002 ¶185. The Petition and Petitioner’s expert then explain that Belcea has similar teachings, but provides more implementation details related to beacons located at different altitudes across various floors of a building. *Id.* at 32–39; Ex-1002 ¶¶165, 169–174. Wrappe’s beacons would have been located, for example, in a multistory mall. Ex-1002 ¶¶119, 165, 200, 203, 299 (citing Ex-1035); *see also id.* at ¶¶ 74, 75 (describing contemporaneous art regarding geolocation within malls).

The Petition explained that while Wrappe teaches identifying and using a closest node or transponder that represents which store a user is in, Belcea

additionally teaches using an algorithm to ensure that the identified node or transponder is the closest one on the same floor as the user device. Paper 1 at 34–39. Moreover, Patent Owner admits that “a POSITA would have understood Belcea teaches to identify the nodes on a floor” and “[t]he cited portions of Belcea show that Belcea can identify the correct floor on which the user is located.” Paper 11 at 17, 18. Thus, Patent Owner’s criticism of Wrappe alone is both wrong (because Wrappe does suggest altitude aiding across building floors) and irrelevant (because Belcea is brought in for the teaching that Patent Owner argues is lacking). Thus, Patent Owner’s criticism that Wrappe lacks “the most practically near” teaching fails because the Petition relied upon Belcea for that aspect of the claims.

2. Belcea Teaches Identifying The Nearest Node Or Transponder On The Same Floor As The User Device

Patent Owner admits that Belcea uses filtered data to find the floor where the user device is located and then identifies the nearest node on that floor. Paper 11 at 18. Patent Owner nonetheless argues that Belcea does not teach the “the most practically near” aspect of elements 1[Diii] and 6[G] because Belcea allegedly does not teach specific algorithmic requirements that Patent Owner improperly attempts to incorporate in the claims: that the user device “can communicate with nodes on different floors and remove nodes that [are not] located [on] the same floor of the user.” *Id.* at 20.

Patent Owner’s apparent claim construction of “the most practically near”

node or transponder as requiring that the user device be capable of communicating with nodes on other floors and then removing nodes on different floors is not supported by anything in the specification or claims. *See id.* at 20. The claim language makes clear that “the most practically near” is not necessarily the physically closest node, but rather must be the one that is most practically closest, such as the closest node on the same floor as the user. *Id.* at 19–20. The claim language states no requirement about whether the user device is capable of communicating with nodes on other floors. *Id.* And even Patent Owner did not propose this overly narrow claim interpretation as its proposed claim construction for “the most practically near node.” *Id.* at 7. Instead, the claim language only requires that nodes on other floors are not identified as “the most practically near node.” *Id.* As Patent Owner admits, Belcea meets that limitation. *Id.* at 18.

Moreover, even if Patent Owner’s overly narrow claim interpretation is adopted, Belcea meets the algorithm order that Patent Owner proposes. Contrary to Patent Owner’s argument, the primary teaching of Belcea is to collect data from nodes on different floors to compare and identify the floor of the user device. Paper 1 at 34–39; Ex-1008 ¶¶15, 47, 48, 50, 62; Ex-1002 ¶¶166–174. Belcea discloses that “each MT 116 exchanges range messages with all wireless routers (i.e., FIRs 106) with which it can communicate” and collects TOF and RSSI data from each of them. Ex-1008 ¶50; *see also* Ex-1002 ¶173 (explaining same). Belcea further

explains after “[t]he RSSI and TOF values received from all routers are filtered” and “the filtered data can be compared for finding the most probable floor where the firefighter is located knowing that the close[s]t router should provide the smallest TOF and the best RSSI simultaneously.” Ex-1008 ¶15; *see also* Ex-1008, ¶¶47, 62; Ex-1002 ¶171–172 (explaining same). Indeed, as Patent Owner concedes, the TOF data received by the user device in Belcea can be used to identify a near node on a different floor. Paper 11 at 18. And Belcea then teaches to disregard nodes on other floors, which can be determined by using RSSI data. *Id.* at 19. Thus, Belcea teaches that the user device communicates with nodes on other floors and then determines which floor the user device is on.

The Petitioner and Petitioner’s expert further explained why a POSITA would have been motivated to combine these teachings of Belcea into the Wrappe system. For example, Wrappe describes a desire to perform altitude aiding to identify the right floor of the user in the building. Ex-1002 ¶168; Paper 1 at 34 (citing same). And Belcea teaches implementation details for accomplishing altitude aiding. Ex-1002 ¶¶169–171. A POSITA would have recognized that implementing Belcea’s method would have the benefit of improving Wrappe by ensuring that the user is connected to a beacon of the store that they are in as opposed to a beacon that is nearby but of a different store above or below the user. Ex-1002 ¶172. Moreover, Wrappe mentions similar techniques to Belcea, using

AFLT or TDOA signal and timing data as compared to Belcea’s RSSI and TOF signal and timing data. *Id.* ¶174. Petitioner’s expert further explained that because Wrappe teaches a goal to “improve the precision of position solutions in a wide area position determination system” (Ex-1005 ¶10), and Belcea teaches transmitting and tracking the user to monitor the user’s positions (Ex-1008 ¶¶30, 50), a POSITA would have been motivated to apply the teachings of Belcea to achieve that goal of Wrappe. Ex-1002 ¶173.

Thus, the Petition explained *Graham* factors (1) and (2) with respect to 1[Diii] and 6[G] by explaining: (1) the scope and content of Wrappe and Belcea, and (2) any differences between 1[Diii] and 6[G] and Wrappe and Belcea, with citations to Wrappe, Belcea, and expert testimony to support the combination of their teachings.

B. Element 6/29/30[C]: “communicating between at least one transponder to the mobile user and between at least one transponder”

With respect to element 6/29/30[C], Patent Owner argues that Wrappe does not teach sending data between a transponder and another transponder because, according to Patent Owner, Wrappe’s “microcell beacons do not communicate with each other.” Paper 11 at 25. This is not true. As the Petition cited and Petitioner’s expert explained, Wrappe teaches that a group of multiple beacon stations can be interconnected to cover a larger zone, for example, in a large

department store. Paper 1 at 53–54; Ex-1002 ¶¶119–120, 203 (citing Ex-1005 ¶46) (Wrappe stating that “more than one microcell beacon station can be used to create a desirable coverage, depending on the size of the store”). And as the Petition and Petitioner’s expert explained, a POSITA would have implemented this teaching of Wrappe by having the beacons in communication with each other in a network communication protocol. Paper 1 at 54; Ex-1002 ¶221. For example, Wrappe says that its beacons can receive data and then “relay the data” to a remote service station. Paper 1 at 54–55 (citing Ex-1005 ¶¶35, 45, 48); Ex-1002 ¶224.

As the Petition and Petitioner’s expert explained, a POSITA would have further understood that the combination of Wrappe and Belcea provides additional support that multiple of Wrappe’s beacons could be meshed together as taught by Belcea’s transponder architecture to provide wider coverage than is possible with a single beacon. Ex-1002 ¶223 (citing Ex-1002 ¶¶202–203); Paper 1 at 54 (citing Ex-1002 ¶223). As Petitioner’s expert explained, a POSITA would have been motivated to look to a reference like Belcea for implementation details regarding nodes communicating together and working in concert to achieve Wrappe’s teaching that more than one microcell beacon can be used to create wider coverage. Ex-1002 ¶203 (citing Ex-1005 ¶46). Petitioner’s expert further explained that the requirement “that the nodes communicate amongst themselves . . . is found in the transponders of Belcea.” Ex-1002 ¶202. Specifically, Belcea teaches a transponder

architecture wherein there are mesh networks for horizontal routers on each floor and vertical routers sending information between floors. Ex-1002 ¶¶231–32 (citing Ex-1006, 6:15–6:67, Cl. 21, Fig. 4); Paper 1 at 57–58. As Petitioner’s expert explained, in view of Wrappe’s teaching to use more than one microcell beacon station for greater coverage and Belcea’s implementation details teaching a mesh network of interconnected nodes, a POSITA would have been motivated to implement Belcea’s teaching to use nodes that communicate in concert to create a mesh network of interconnected nodes. Ex-1002 ¶203.

Thus, the Petition explained *Graham* factors (1) and (2) with respect to 6/29/30[C] by explaining: (1) the scope and content of Wrappe and Belcea, and (2) any differences between 6/29/30[C] and Wrappe and Belcea, with citations to Wrappe, Belcea, and expert testimony to support the combination of their teachings.

C. Patent Owner’s Citation To *Apple v. Contentguard* Is Inapposite

Patent Owner’s other argument, citing to *Apple, Inc. v. Contentguard Holdings, Inc.*, IPR2015-00355, Paper 9 at 9–10, is inapposite because that decision criticized the petitioner’s failure to explicitly state which prior art reference combinations formed the bases of the petition. Here, the Petition clearly sets forth three distinct grounds, walks through the disclosures of each prior art reference as those disclosures relate to the claims, and explains how the prior art combination

teaches all of the elements and thus renders the claims obvious. *See* Paper 1 at 19–79; *see also* Paper 1 at ii–x (Table of Contents listing the pages where each ground maps to each claim limitation).

- Ground 1 is based on the combination of Wrappe and Belcea and covers Claims 1–5.
- Ground 2 is based on the combination of Wrappe, Belcea, and Christopher and covers Claims 6–30.
- Ground 3 is based on the combination of Wrappe, Belcea, and Kinnunen and covers Claims 6–30.

And Patent Owner does not dispute that all of the prior art references of the Grounds qualify as prior art because the '203 Patent claims are entitled to a priority date no earlier than January 8, 2009. Paper 1 at 6. As explained in the Petition, all of the '203 Patent claims recite new subject matter that was not disclosed in the earlier applications in its claimed priority chain. *Id.* at 6–11.

D. No Separate Disputes Regarding Remaining Claims and Prior Art Grounds

Patent Owner raises no independent arguments regarding the applicability of the Grounds to any other elements of Claims 1, 6, 29, or 30, nor does it independently dispute the Grounds raised against Claims 2–5 or 7–28. Those remaining claim elements, claims, and Grounds thus stand undisputed.

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Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner certifies that this petition includes 3,654 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under §42.8, certificates of service, word count, and exhibits.

CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on May 29, 2024, a true and correct copy of Petitioner's Corrected Reply in Support of Petition for *Inter Partes* Review of U.S. Patent No. 8,315,203 was served in its entirety by filing this document through the Patent Trial and Appeal Board P-TACTS System, as well as by email, on the counsel of record for the Patent Owner.

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