

Case No. IPR 2024-01468
Petitioners' Reply to Patent Owner Response

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**T-MOBILE USA, INC., AT&T SERVICES, INC., CELLCO PARTNERSHIP
D/B/A VERIZON WIRELESS, ERICSSON INC. AND
NOKIA OF AMERICA CORPORATION**

Petitioners,

v.

HEADWATER PARTNERS II LLC

Patent Owner.

Case No. IPR2024-01468

U.S. Patent No. 9,094,868

**PETITIONERS' REPLY TO
PATENT OWNER RESPONSE**

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PETITIONERS' EXHIBIT LIST

Exhibit No.	Document
1001	U.S. Patent No. 9,094,868 (“the ’868 Patent”)
1002	Prosecution History of U.S. Application No. 14/053,574, filed October 14, 2013, which issued as the ’868 Patent
1003	U.S. Provisional Patent Application No. 61/714,151, filed October 15, 2012, to which the ’868 Patent may claim priority
1004	U.S. Patent Publ. No. 2008/0248822 A1 (“Jarvinen”), published October 9, 2008
1005	U.S. Patent Publ. No. 2012/0064908 A1 (“Fox”), published March 15, 2012
1006	Docket Control Order, <i>Headwater Partners II LLC v. Cellco Partnership d/b/a Verizon Wireless et al.</i> , Case No. 2:24-cv-00007-JRG, Dkt. No. 33 (E.D. Tex. April 9, 2024)
1007	Docket Control Order, <i>Headwater Partners II LLC v. T-Mobile USA, Inc. et al.</i> , Case No. 2:24-cv-00015-JRG, Dkt. No. 42 (E.D. Tex. April 9, 2024)
1008	Federal Court Management Statistics - Profiles, June 30, 2024
1009	Order Granting Ericsson’s and Nokia’s Motion to Intervene as a Defendant, <i>Headwater Partners II LLC v. Cellco Partnership d/b/a Verizon Wireless et al.</i> , Case No. 2:24-cv-00007-JRG, Dkt. No. 51 (E.D. Tex. July 19, 2024)
1010	Order Granting Ericsson’s and Nokia’s Motion to Intervene as a Defendant, <i>Headwater Partners II LLC v. T-Mobile USA, Inc. et al.</i> , Case No. 2:24-cv-00015-JRG, Dkt. No. 63 (E.D. Tex. July 19, 2024)

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Exhibit No.	Document
1011	U.S. Patent Publ. No. 2011/0310865 A1 (“Kennedy”), published December 22, 2011
1012	Declaration of Dr. Stan McClellan, Ph.D. (“McClellan”)
1013	Curriculum Vitae of Dr. Stan McClellan, Ph.D.
1014	<i>Sotera</i> stipulation letter to Patent Owner
1015	Order Granting Motion to Stay, <i>Headwater Partners II LLC v. T-Mobile USA, Inc. et al.</i> , Case No. 2:24-cv-00015-JRG, Dkt. No. 75 (E.D. Tex. March 11, 2025)

I. INTRODUCTION

Patent Owner concedes that Jarvinen teaches or suggests almost all of the claim limitations of claims 11-15. Patent Owner disputes only whether Jarvinen teaches or suggests “determining a UE environment information.” As discussed in the Petition, Jarvinen teaches or suggests “determining a UE environment information.”

First, Jarvinen teaches or suggests that certain environment information related to power levels are communicated to the mobile device: factors such as season of the year, weather, traffic, etc. Ex. 1004 at ¶ 0062. Patent Owner asserts that this is not enough. But, Patent Owner’s argument is based on a misunderstanding of the claims, which only require “determining” information **associated to** or **with** certain factors, such as time of day, season, weather, or mobile device positioning.

Second, Jarvinen teaches that the “bearing of the mobile terminal during the transmission may be determined by motion sensors or a compass provided in the mobile terminal.” Ex. 1004 ¶ 0043. This bearing of the mobile terminal is “UE environment information.” Notably, Patent Owner does not meaningfully discuss this embodiment, but instead dismisses it in a footnote.

Accordingly, claim 11, and claims 12-15 dependent therefrom, should be

found unpatentable.

II. JARVINEN TEACHES “DETERMINING” A UE ENVIRONMENT INFORMATION (CLAIMS 11-15)

A. PATENT OWNER’S PROPOSED INTERPRETATION OF “DETERMINING” IS TOO NARROW

Patent Owner’s interpretation of the claims is too narrow and contradicts the structure of the claims. Patent Owner’s reading of claims 11-15 appears to be based on a misunderstanding of what the term “UE environment information” encompasses. Based on this misunderstanding, Patent Owner proposes an interpretation of the term “determining” that is narrow and contradicts the structure of the claims.

Patent Owner purports to give the term “determining” its plain meaning.¹ Paper 23 at 2. According to Patent Owner, the plain meaning of “determining”

¹ Petitioners agree that the term “determining” should have its plain and ordinary meaning. The issue is that Patent Owner is too narrowly interpreting the term “determining,” and its relationship with “UE environment information.” To the extent that an explanation of “determining” is necessary, Petitioners propose

requires “a specific attempt by the system doing the alleged ‘determining’ to calculate, estimate, or arrive at the information in question.” Paper 23 at 2. Patent Owner further argues that the system “must make some determination regarding the” UE environment information. Paper 23 at 2.

The '868 patent explains that “UE environment information” includes “information associated to one or more of a traffic load, a network load, an interference, time of day, whether [sic] information, day of year, season” (claim 12; *see also* Ex. 1001 at 28:57-60) and “information associated with surrounding objects or information associated with a user of the UE” (claim 13, *see also* Ex. 1001 at 27:60-64), including “positioning of the user of the UE or positioning of the user of the UE relative to the UE” (claim 14; *see also* Ex. 1001 at 27:65-28:3, 28:50-67 (“For at least some embodiments, the information associated with the user of the UE device includes positioning of the user of the UE device 820.”)).² According to

“ascertaining,” but Petitioners believe this is not necessary for purposes of this *inter partes* review.

² The Board asked “whether UE ‘environment information’ includes location or orientation of the UE.” Per the specification and claims, it does. *See* claims 13-15; Ex. 1001 at 27:60-28:3).

Patent Owner, this means that the system must determine, for example, “what the weather itself is.” *See* Paper 23 at 2-3.

But that is not what the claims require. Patent Owner’s interpretation of the term “determining” takes the term “determining” out of the context of the claims. Claim 11 requires “determining a UE environment information.” Claim 12 further elaborates that “the UE environment information comprises **information associated to** one or more of a traffic load, a network load, an interference, time of day, whether [sic] information, day of year, season” (emphasis added), while claim 13 similarly states that “the UE environment information comprises **information associated with** surrounding objects or information associated with a user of the UE” (emphasis added). In view of claim 11, claims 12 or 13 require “determining” “information associated to” or “information associated with” certain factors, such as the time of day, the weather, or positioning of the user of the UE. Put another way, “UE environment information,” as claimed, is not limited to factors such as the time of day, the weather, or positioning of the user of the UE themselves. Rather, the term “UE environment information,” by the structure of the claims, includes “information associated to” or “information associated with” those factors as well. Thus, for example, claim 12 (and claim 11, which is necessarily broader than claim 12) does not require determining “what the weather itself is,” as asserted by Patent Owner. *See* Paper 23 at 2-3. Rather, the claim requires only determining information

associated to the weather. In sum, Patent Owner's assertion that the claims require determining certain factors—as opposed to determining information associated with or to those factors—is too narrow and contrary to the claims.

**B. JARVINEN TEACHES “DETERMINING” A UE
ENVIRONMENT INFORMATION**

While Patent Owner's interpretation of the term “determining” is too narrow, this dispute does not need to be resolved because Jarvinen teaches “determining a UE environment information,” as required by claims 11-15, even under Patent Owner's interpretation of the term. Specifically, Jarvinen teaches determining (1) radio environmental information where the mobile device is located; and (2) the mobile device's bearing within that environment. These disclosures teach or suggest to the person of skill in the art determining UE environment information.

**1. Jarvinen Teaches Determining Radio Environment
Information**

As discussed in more detail in the Petition, Jarvinen teaches a database that is “updated constantly with new data to adapt the database to changes in the radio environments related to different geographical locations,” where the “radio environment may have changed due to newly constructed buildings.” Ex. 1004 ¶ 0039. For example, Jarvinen discloses that “[s]everal factors may affect the actual transmission properties with given transmission conditions,” including “season of

the year, weather, traffic, etc.” Ex. 1004 ¶ 0062. Jarvinen teaches that information related to power levels, such as season of the year, weather, and traffic, are communicated to the mobile device, so that the mobile device can take that information into account when evaluating transmission property values and received reception signal level information. Specifically, Jarvinen discloses:

The communication quality indicator may be, for example, a measured reception power level of a signal received from the mobile terminal and/or from the base station.

Information related to the reception power levels

measured by the base station **may be communicated to the mobile terminal** which may weight transmission property values of the database with the received reception signal level information. Several factors may affect the actual transmission properties with given transmission conditions. **Such factors include season of the year, weather, traffic, etc.**

Ex. 1004 at ¶ 0062 (emphasis added). As discussed above, Patent Owner's interpretation of the term “determining” requires “a specific attempt by the system doing the alleged ‘determining’ to calculate, estimate, or arrive at the information in question.” By receiving the information related to the season of the year, weather,

and traffic, the mobile device has made a “specific attempt” to “arrive at that information.”³

Patent Owner relies heavily on Stan McClellan, Petitioners' expert, testimony to argue that this limitation is not taught in Jarvinen. Paper 23 at 6-7. But Dr. McClellan's testimony relates only to a single example: weather. As discussed above, the disclosures of Jarvinen are much broader, including disclosures to season of the year, traffic, and mobile positioning.

Patent Owner notably did not cite to Dr. McClellan's testimony relating to seasonal information. *See* Ex. 2014 at 23:9-11 (“So if you're asking me if Jarvinen discloses computing using season of the year, that seems to be included there.”); *id.* at 26:3-10 (“Q. Okay. And so Jarvinen doesn't need to know what the season of the year is in order to measure a received power level; correct? A. Jarvinen can measure received power without knowing what the season of the year is. Jarvinen can also use information related to the season of the year in conjunction with received power

³ Moreover, the base station is also a part of the claimed system and also must have “calculated, estimated, or arrived at” that information in order to transmit it to the mobile device. In other words, in order to constantly update its information, the system in Jarvinen must necessarily determine that information.

to make different conclusions about the channel characteristics.”). And Dr. McClellan’s testimony was taken out of context. As the complete testimony cited by Patent Owner shows, Dr. McClellan was explaining the difference between measuring radio information and interpreting that measurement using data on other factors (such as season of the year, weather, and traffic). *See, e.g.*, Ex. 2014 at 27:4-8 (“Factors that affect the measurements are not measured. The measurement is the thing that’s measured. **The factors that affect the measurement are things that change how the measurement can be interpreted.**”) (emphasis added); *id.* at 30:3-12 (“But what it’s saying is that the mobile terminal isn’t a slave to the database. The mobile terminal is also -- has the database, and it has information that it’s receiving, and it’s making decisions based on looking at information in the database and looking at information that it’s measuring in its location, and it’s reacting based on that. So it’s interpreting and making a determination based on those pieces of information as to what it’s going to do.”). This is not the same as stating that the system does not know that information at all.

Patent Owner seems to assert that this information is merely “radio environment information,” and not “UE environment information.” Paper 23 at 8-10. In addition, Patent Owner asserts that the “radio environment information” is somehow different from the claimed “UE environment information.” Paper 23 at 8-10. According to Patent Owner, “radio environment information” relates to the

“transmission properties of the radio channel,” while “UE environment information” relates to “the physical environment in which the UE exists,” such as season of the year, weather, and traffic. *Id.* There is no support for this arbitrary divide. The ’868 patent defines “UE environment information” as including “information associated to one or more of a traffic load, a network load, an interference.” Claim 12, *see also* Ex. 1001 at 28:53-56. This type of UE environment information would also be considered “radio environment information,” that is, it relates to the “transmission properties of the radio channel.” *See, e.g.,* Ex. 1001 at 19:34-45 (describing interference as a “parameter[] associated with the wireless communication”); *see also* claim 2. Thus there is no support that the claimed “UE environment information” could not also include “radio environment information.”

Patent Owner also argues that having “UE environment information” include “radio environment information” would collapse the scope of claim 11 to independent claim 1 (*i.e.*, by replacing the term “UE environment information” in claim 11 with the “link qualities” of claim 1, the claims would have the same scope). Paper 23 at 9-10. This is not so. While claim 1 recites “determining a plurality of link qualities (LQs),” claim 11 has the additional requirement that “at least a portion of the link quality positioning information is based on the UE environment information.” *Compare* claim 1 *with* claim 11. Claim 1, on the other hand, does not

require link quality positioning information based on link quality information. Thus, claim 11 would not be superfluous.

2. Jarvinen Teaches Determining the Mobile Device's Bearing Within Its Environment

Jarvinen further teaches that the “transmission conditions may include . . . bearing of the mobile terminal.” Ex. 1004 ¶ 0041. Jarvinen explains that the “bearing of the mobile terminal during the transmission may be determined by motion sensors or a compass provided in the mobile terminal.” Ex. 1004 ¶ 0043. Jarvinen teaches that the “mobile terminal may give instructions” to move the device in relation to the user's head. Ex. 1004 ¶ 0058-0059.

For example, Jarvinen explains that the “bearing of the mobile terminal during the transmission **may be determined by motion sensors or a compass** provided in the mobile terminal.” Ex. 1004 ¶ 0043 (emphasis added). The bearing of the mobile terminal is “UE environment information.” *See, e.g.*, claim 14 (UE environment information includes “positioning of the user of the UE or positioning of the user of the UE relative to the UE”). Thus, Jarvinen explicitly teaches “determining” the “UE environment information” itself. And Jarvinen teaches that the “link quality position information” is “based on” this determined UE environment information, as further required by claim 11. For example, Jarvinen teaches that the “mobile terminal may give instructions” to move the device in relation to the user's head,

showing that the positioning information takes into account the bearing of the mobile terminal. Ex. 1004 ¶ 0058-0059.

Patent Owner does not discuss this embodiment in its response, even though this embodiment was cited and discussed in the Institution Decision. Paper 17 at 15-16. Rather, Patent Owner appears to suggest that Petitioners have waived theories “implicat[ing] location or orientation information.” Paper 23 at 3, n.2. This is not so. The Petition discusses these embodiments in Jarvinen with respect to location and orientation of the device. *See, e.g.*, Paper 1 at 54 (citing Ex. 1004 at ¶¶0058-59); 55-56 (discussing device positioning and device motion sensors). *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1242 (Fed. Cir. 2003) (claims “must be at least as broad as the claims that depend from them”). And again, these embodiments were discussed in the Institution Decision. *See, e.g.*, Paper 17 at 15-16. Notably, Patent Owner is silent as to claims 13-14, which explicitly relate to positioning of the mobile device. Thus, Petitioners have not waived any argument related to “location or orientation information.”

C. JARVINEN TEACHES THE LIMITATIONS OF CLAIM 12

Patent Owner's argument with respect to claim 12 appears to be a rehashing of its arguments with respect to the other claims regarding the term "determining." Paper 23 at 10-11.⁴

As discussed above, Jarvinen teaches "determining a UE environment information" "wherein the UE environment information comprises information associated to one or more of a traffic load, a network load, an interference, time of day, whether [sic] information, day of year, season."

III. CONCLUSION

For the reasons stated in their Petition and above, Petitioners respectfully request that claims 11-15 of the '868 patent be found unpatentable.

⁴ Patent Owner attempts to make some distinction between claim 12 and claim 11. *See* Paper 23 at 11, n.5. Specifically, Patent Owner tries to draw some distinction between "including" UE environment information and "information associated to" UE environment information, but it is entirely unclear what Patent Owner is referencing. Claim 11 does not use the word "include," and Patent Owner does not provide any explanation for what this purported difference in language is.

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Respectfully submitted,

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IV. CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Petitioners' Reply to Patent Owner Preliminary Response was served on this date via email to the following addresses:

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V. CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

Pursuant to 37 C.F.R. § 42.24 et seq., the undersigned certifies that this Response complies with the type-volume limitations excluding the cover page and the parts exempted by 37 C.F.R. § 42.24(a)(1). This document contains 2,477 words as calculated by the "Word Count" feature of Microsoft Word, the word processing program used to create it.

Dated: November 20, 2025

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