

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

Petitioner

v.

KONINKLIJKE KPN N.V.,  
Patent Owner

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IPR2025-00503  
Patent No. 8,660,560 B2

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**PATENT OWNER'S PRELIMINARY RESPONSE**

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## EXHIBIT LIST

Exhibit No.	Description
2001	Expert Declaration of Jacob Sharony, Ph.D.
2002	Curriculum Vitae of Jacob Sharony, Ph.D.
2003	3GPP TS 36.305 V9.0.0 (2009-09), Release 9, September 28, 2009, available at <a href="https://www.3gpp.org/ftp/Specs/archive/36_series/36.305/36305-900.zip">https://www.3gpp.org/ftp/Specs/archive/36_series/36.305/36305-900.zip</a>
2004	U.S. Patent 6,259,919
2005-2100	RESERVED
2101	KPN's Original Petition and Request for Disclosure in Koninklijke KPN N.V. v. Samsung Elecs. Co., No. 25-0237 (71st Dist. Ct. Harrison Cty. Tex., March 3, 2025).
2102	2016 Settlement, License and Non-Assertion Agreement between Koninklijke KPN N.V. and Samsung Electronics Co., Ltd. ("Financial Conditions" Redacted)
2103	Ericsson's Nov. 16, 2021 Invalidity Contentions in Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., No. 2:21-CV-00113-JRG
2104	Signed Jury Verdict Form (Dkt. 245) in Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., No. 2:21-CV-00113-JRG (Aug. 26, 2022)
2105	Amended Final Judgment (Dkt. 325) in Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., No. 2:21-CV-00113-JRG (Aug. 9, 2023)
2106	KPN's Original Petition and Request for Disclosure in Koninklijke KPN N.V. v. Samsung Elecs. Co., No. 22-0762 (71st Dist. Ct. Harrison Cty. Tex., Sept. 28, 2022) (redacted)

<b>Exhibit No.</b>	<b>Description</b>
2107	Signed Jury Verdict Form in Koninklijke KPN N.V. v. Samsung Elecs. Co., No. 22-0762 (71st Dist. Ct. Harrison Cty. Tex., Feb. 23, 2024) (redacted)
2108	Final Judgment, Koninklijke KPN N.V. v. Samsung Elecs. Co., No. 22-0762 (71st Dist. Ct. Harrison Cty. Tex., May 2, 2024) (redacted)
2109	Samsung's Complaint for Declaratory Judgment of Non-Infringement (Dkt. 2) in Samsung Electronics Co., Ltd. v. Koninklijke KPN N.V., No. 24-cv-01433-CFC (Dec. 31, 2024) (redacted)
2110	Samsung's Complaint for Declaratory Judgment of Non-Infringement in Samsung Electronics Co., Ltd. v. Koninklijke KPN N.V. (Dkt. 2) (redacted), No. 25-cv-00001-CFC (January 1, 2025) (redacted)
2111	Opening Brief in Support of Motion to Dismiss First Amended Complaint (Dkt. 30) in Samsung Electronics Co., Ltd. v. Koninklijke KPN N.V., No. 24-cv-01433-CFC (Apr. 7, 2025) (redacted)
2112	Opening Brief in Support of Motion to Dismiss First Amended Complaint (Dkt. 31) in Samsung Electronics Co., Ltd. v. Koninklijke KPN N.V., No. 25-cv-00001-CFC (Apr. 7, 2025) (redacted)
2113	Amended Complaint (Dkt. 26) in Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., No. 2:22-CV-00282-JRG (Nov. 15, 2022) (redacted)
2114	Order of Dismissal (Dkt. 236) in Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., No. 2:22-CV-00282-JRG (Jan. 17, 2024)
2115	Docket Navigator Search Results for All IPR or PGR Petitions Filed Between Jan. 1, 2025 and April 17, 2025
2116	Docket Navigator Search Results for IPR or PGR Petitions Filed by Samsung Between Jan. 1, 2025 and April 17, 2025

<b>Exhibit No.</b>	<b>Description</b>
2117	Ericsson's P.R. 3-3 Invalidity Contentions, Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al., C.A. No. 2:22-CV-00282-JRG (E.D. Tex. March 16, 2023) (redacted)
2118	Disclaimer under 37 CFR § 1.321(a), U.S. Patent No. 8,660,560 (claims 1-6, 8-17)

## I. Introduction

Petitioner's asserted grounds do not disclose or suggest the limitations of claim 7, the only claim remaining at issue. Only grounds 2 and 4 were advanced against Claim 7. Both grounds fail to disclose or suggest independent claim element [1c], from which Claim 7 depends, and which requires "a request generator configured for requesting ... one or more of the selected user terminals to report cell information of a **plurality** of wireless access nodes."<sup>1</sup> Ex. 1001, 11:63-67. Petitioner maps (from its primary reference, Amirijoo) a request to report cell information of a single node, not a plurality.

Further, neither ground discloses using "location information" as a "selection parameter" for selecting a part of detected user terminals to report the required cell information, as required by Claim 7. Ex. 1001, 12:60-65. In Ground 2, Petitioner relies on Kazmi for this limitation. But Kazmi discloses using speed as a selection parameter, not location. The element is simply missing from the proposed combination. In Ground 4, Petitioner adds Mach to the Ground 2 combination to try and fill this gap. While Mach does teach using precise GPS location in place of prior art location estimates that were based on signal strength, there is nothing in Mach suggesting that location be used as a selection parameter. And because nothing in

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<sup>1</sup> All emphasis herein is added unless indicated otherwise.

Ground 2 discloses or suggests using location, the only motivation for doing so here is clearly derived from Petitioner’s hindsight-based analysis using Claim 7 as a roadmap. Accordingly, for both Grounds 2 and 4, Petitioner has failed to demonstrate a reasonable likelihood that Claim 7 is unpatentable. Patent Owner (“KPN”) respectfully requests the Board deny institution.

## **II. Disclaimer of All Claims Except Claim 7**

As an initial matter, KPN has disclaimed claims 1-6 and 8-17 by filing a statutory disclaimer with the USPTO under 35 U.S.C. § 253(a). Ex. 2118. Accordingly, these claims may not be considered in the decision of whether to institute inter partes review of the ’560 patent. *See* 37 C.F.R. § 42.107(e). As Grounds 1 and 3 are asserted solely against these claims, KPN does not address those grounds.

For the avoidance of doubt, KPN makes no admissions as to the validity of any claim, including the disclaimed claims. No adverse inferences result from the disclaimer and the disclaimer has no effect on the remaining claim (7) of the ’560 Patent. *Raytheon Technologies Corp. v. General Electric Company*, 993 F.3d 1374, 1379 n.4 (Fed. Cir. 2021). KPN is not seeking an adverse judgment as to the disclaimed claims. KPN is not disclaiming the ’560 Patent or remaining claim 7 challenged in the Petition under 37 C.F.R. § 42.73(b).

### **III. Technological Background and Improvement over the Prior Art**

#### **A. The '560 Patent**

Mobile user terminals (e.g., cellular telephones)<sup>2</sup> are always scanning the frequency spectrum for certain signals to determine which cell they should use for transmissions. Ex. 1001, 1:32-48. The base station for each cell of a wireless access network stores a neighbor cell list (NCL), which it broadcasts within the cell. The NCL, as its name suggests, generally contains a listing of the neighboring cells considered for “reselection” or “handover,” and for which a user terminal connected to the first cell should send measurement reports. *Id.*; Ex. 2001 ¶ 44. Cell reselection and handover refer to the processes for a terminal moving to a new cell when in idle mode and active mode, respectively. Ex. 1001, 1:32-48, 6:63-7:3; Ex. 2001 ¶ 45. The measurements on cells on the NCL that are reported by user terminals can be used by the network to decide whether a mobile terminal should be moved to another cell, including to help maintain acceptable service. In some cases, a cell may maintain separate lists for neighbors within the same network (an intra-network

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<sup>2</sup> The '560 Patent and the asserted references use various terminology to refer to the mobile user terminals, including mobile station, mobile terminal, user terminal and user equipment (UE).

NCL), and those in cooperating networks (an inter-network NCL). Ex. 1001, 1:32-48.

Traditionally, populating and optimizing NCLs was done manually (off-line) using various tools, such as predictive optimization algorithms, when a new base station was installed. *Id.*, 1:49-51. These tools were not perfect, and required network operators to perform subsequent testing to determine appropriate handover areas and to update the NCL with the correct list of neighboring cells. Ex. 1005 [0024]; Ex. 2001 ¶ 46. This solution was flawed given that networks and conditions affecting signal quality would gradually change, rendering the once-optimized NCL out-of-date. Ex. 1005 [0024]; Ex. 2001 ¶ 46.

Thus, at the time of the invention, automated NCL optimization was being investigated. Ex. 1001, 1:49-55. Certain automated processes were described in technical specifications of the 3rd Generation Partnership Project (3GPP), a consortium of telecommunications standards organizations. *Id.*, 1:51-58; Ex. 2001 ¶ 47. Those specifications disclosed an automatic neighbor relation (ANR) function which finds new neighbors and removes outdated neighbors from a neighbor relations table (NRT). Ex. 1001, 1:51-58; *see also* Ex. 2001 ¶ 47. Here, the base station instructs a user terminal from a serving cell to look for neighbor cells, and the terminal first reports the physical cell identifier of the detected cells. The base station then instructs the terminal to read the cell global identifier (CGI) and further

cell information from the neighboring cells. The terminal also reports this information to the serving cell. The base station may then update the NRT using the information reported from the user terminals. Ex. 1001, 1:56-2:7.

The invention improved the state of the art by limiting, in a novel way, the group of user terminals that are requested to search for neighboring cell information. Ex. 2001 ¶ 48. The invention allows requests for neighboring cell information to be directed to user terminals in the areas where cell reselection and handover may occur. Ex. 1001, 3:37-47. In one embodiment, location information from the user terminals is used as a criterion for selecting the terminals requested to search for neighboring cell information. *Id.*, 5:25-27.

This feature is an improvement over the prior art because it controls or tunes the amount of cell information reporting. *Id.*, 5:11-24. This relates to a trade-off between the measurement overhead (signaling load) and the potential for neighbor cell list optimization. *Id.* For example, if an operator wants to increase NCL optimization, the invention allows for selection of more terminals to report the required information, which increases the signaling those terminals must undertake (having additional effects such as shortened device battery life, etc.). Ex. 2001 ¶ 49. Or, by limiting the number of cells reporting an operator may forgo increased optimization while achieving the benefit of reduced signaling over the network(s). Ex. 1001, 7:44-48; Ex. 2001 ¶ 49.

## **B. The Asserted Prior Art**

Grounds 2 and 4 rely on three common references: Amerijoo, 3GPP TR 32.816,<sup>3</sup> and Kazmi. The primary asserted reference, U.S. Patent Publication No. 2009/0191862 (Ex. 1005) (“Amirijoo”), relates to automatic (versus manual) updating of the neighbor relations list or neighbor cell list.<sup>4</sup> Ex. 1005 [0024]-[0026]. Amirijoo’s disclosure applies to handovers between different radio access technologies (RATs), and handovers in radio access networks using different radio frequencies. *Id.* [0073]-[0074].

The ’560 Patent focuses on ways to lower the measurement and signaling load and radio resource usage imposed on user devices required for automatic list updating. *See* Section III.A. Amirijoo focuses instead on when the terminal and base station communicate to update the list. Ex. 2001 ¶ 52. Thus, Amirijoo explains that the mobile station that meets appropriate triggering conditions performs the required measurements of signal quality during “reading gaps.” Ex. 1005, Abstract, [0080].

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<sup>3</sup> Petitioner relies on 3GPP TR 32.816 (Ex. 1006) (“TR- 32.816”), a 3GPP technical report, “for one limitation: neighbor cell list.” Petition (Paper 3), 13 n.1.

<sup>4</sup> For purposes of this response only, distinctions between these two lists (NCL and NRL) are ignored as they are immaterial to the deficiencies in the asserted grounds explained herein.

The reading gap is a time period in which the mobile station does not receive information from the serving base station. *Id.*, Abstract, [0021], [0032]. In order to perform the required measurements, the mobile station must tune into the frequency it is measuring, and stop listening to the serving base station for the time needed to measure the desired information. *Id.* [0090]. Amirijoo details various ways in which the network and mobile terminal may coordinate the reading gap with transmission gaps (when the serving base station is not transmitting to the mobile terminal). *Id.* [0021], [0090]-[0098]. Thus, while Amirijoo refines how measurements are made, it does not affect how user terminals are selected among multiple user terminals, let alone based on user terminal location. Ex. 2001 ¶ 53. Thus, Amirijoo does not disclose or suggest the solution of Claim 7, which enables the “tuning” of cell list optimization traffic via a proactive selection of only a subset of user terminals to be handed over based on location.

Grounds 2 and 4 also rely on Kazmi (Ex. 1007) as allegedly disclosing using location information as a selection parameter for selecting the part of the detected user terminals as required by Claim 7. Petition, 50-52, 58. Kazmi is directed to automating NCL updates from mobile terminals selected based on determining which mobile terminals have a high probability of quickly obtaining a global cell identifier (GCI) of an unknown base station using signal-based metrics. Ex. 1007, Abstract, [0003]-[0006]. Kazmi noted that a problem with merely requesting mobile

terminals to obtain and report the unknown GCI was that “it may take a relatively long period of time for the UE to obtain the GCI and while the UE is attempting to obtain the GCI the UE may not be able to receive data from the base station.” *Id.* [0005]. To address this, Kazmi disclosed selecting mobile terminals to obtain and report the GCI based on certain parameters indicating that the mobile terminals had a strong signal from the unknown base station, so that the GCI could be obtained and reported more quickly. Kazmi taught, among other criteria, selecting mobile terminals by determining: (1) whether a mobile terminal sent a message containing a non-unique physical layer cell identifier (PCI) associated with the unknown base station more than a specified threshold within a particular time window; (2) determining which mobile terminals had reported the best cell quality information with respect to the unknown base station; (3) determining a speed value (indicating the speed at which a mobile terminal is moving); (4) determining the propagation delay between a mobile terminal and the unknown cell. *Id.* [0009]-[0012]; Ex. 2001 ¶¶ 56-63. Thus, a POSITA would have understood Kazmi as directed to automating NCL updates using signal-based metrics such as PCI report frequency, signal quality, and UE speed. Ex. 2001 ¶ 64. A POSITA would not have understood Kazmi as using location data for mobile user terminal selection. *Id.*

Ground 4 alternatively relies on Mach (Ex. 1008) as allegedly disclosing the use of location information as a selection parameter for selecting the part of the

detected user terminals as required by Claim 7. Petition, 58, 62-64. Mach is directed to using a first wireless network to determine a mobile terminal's location, and the mobile terminal then setting operational conditions of the mobile terminal for operating in or accessing a second wireless network using that location. Ex. 1008, Abstract. Specifically, Mach teaches using GPS information from a user terminal to replace the use of estimated position and speed derived from signal strength in various algorithms used in cellular networks. *Id.* [0002], [0023]-[0026], [0028], [0038]-[0040]; Ex. 2001 ¶¶ 65-70. These algorithms include the taking of measurements and the sending of measurement reports concerning neighboring cells. *Id.* [0042]-[0043]; Ex. 2001 ¶¶ 65-70. A POSITA would have understood Mach as addressing how a mobile terminal itself may internally adapt measurement behavior (e.g., reporting frequency, scan ranges) based on location or mobility state derived from GPS data. Ex. 2001 ¶ 71. A POSITA would not have understood Mach to disclose how the network selects user terminals for CGI reporting using location. *Id.*

#### **IV. Claim Construction**

Petitioner proposes construction for two terms, “updating means . . . using the received cell information” and “configured for.” Petition, 10-11. Petitioner asserts that no other terms require construction. *Id.*, 10. Although Petitioner acknowledges that the Board has previously construed “location information” in claim 7 as

requiring the “actual location of the ‘detected user terminals’ within the cell in which the terminals are operating,” Petitioner does not propose a construction for the term but asserts that claim 7 is obvious under any reasonable interpretation. *Id.*, 12-13.

KPN notes that the Board’s prior construction of “location information” is consistent with the specification, which explicitly states that the location information from the user terminals referenced in claim 7 “may e.g. be obtained from a GPS module in the user terminal” and may be useful “in identifying where handover regions exist, and in solving location-specific outages or problems.” Ex. 1001, 5:25-37; *see also id.* 9:59-62; Ex. 2001 ¶ 76. Nevertheless, as Petitioner fails to establish that claim 7 is unpatentable under any reasonable construction, no explicit constructions are required to resolve any issues in dispute. KPN may offer constructions of any terms necessary to resolve any disputed issues, should the Board institute a trial.

#### **V. Level of Ordinary Skill In The Art**

For purposes of this preliminary response only, KPN does not dispute Petitioner’s proposed qualifications for a person having ordinary skill in the art (“POSITA”). Petition, 4. All references to a POSITA are made using that definition. Ex. 2001 ¶¶ 72-74. This response is supported by the declaration of Dr. Jacob Sharony, who is well qualified in the pertinent art and is qualified to testify as to the understanding of a POSITA. *See id.* ¶¶ 3-10, 73; Ex. 2002. KPN may propose

alternative qualifications required for a POSITA if necessary should the Board institute a trial.

## **VI. The Asserted Grounds Do Not Render Claim 7 Unpatentable**

As shown below, neither Ground 2 (Amirijoo- TR-32.816-Kazmi) or Ground 4 (Amirijoo- TR-32.816-Kazmi-Mach) disclose or suggest, alone or in combination, all limitations of claim 7. Therefore, neither ground renders claim 7 unpatentable.

### **A. Claim 7**

Claim 7 depends from Claim 1. Claim 1 requires the following elements, numbered using Petitioner's designations:

1[pre] A system for updating a neighbour cell list in a telecommunications architecture comprising a first wireless access network having a first wireless access node for which at least one first neighbour cell list is defined and a second wireless access network having a second wireless access node for which at least one second neighbour cell list is defined, the system comprising:

1[a] a detector configured for detecting user terminals to be transferred from the first wireless access node of the first wireless access network to the second wireless access node of the second wireless access network;

1[b] a selector configured for selecting a part of the user terminals;

1[c] a request generator configured for requesting from the first wireless access node one or more of the selected user terminals to report cell information of a plurality of wireless access nodes of at least one of the first wireless access network and the second wireless access network;

1[d] a receiver configured for receiving the cell information from the one or more of the selected user terminals;

1[e] and updating means configured for updating at least one of the first neighbour cell list and the second neighbour cell list using the received cell information.

Ex. 1001, 11:50-12:5; Petition, “List of Challenged Claims.”

Claim 7 further limits claim 1 by requiring a specific selection parameter for selecting a part of the detected user terminals in claim 1[b]. Specifically, Claim 7 requires “receiving location information from one or more of the detected user terminals and wherein the location information is used as a selection parameter for selecting the part of the detected user terminals.” Ex. 1001, 12:60-65.

## **B. Ground 2**

Under Ground 2, Petitioner asserts that Kazmi alternatively (to Ground 1) teaches element 1[b] and the limitations of claim 7. Petition, 46, 49-52. Thus, in Ground 2, Petitioner apparently relies on the disclosures of Ground 1 for all other elements of claim 7 (e.g., elements 1[a], 1[c], etc.).

**1. Ground 2 does not disclose element 1[c].**

Amirijoo-TR-32.816-Kazmi does not disclose “a request generator configured for requesting from the first wireless access node one or more of the selected user terminals to report cell information of a plurality of wireless access nodes of at least one of the first wireless access network and the second wireless access network” as required by Claim 1. Ex. 2001 ¶¶ 89-99.

Ground 2 relies on the Ground 1 combination for this claim element, that is the Amirijoo-TR-32.816 combination. There, Petitioner asserts that Amirijoo “discloses that ... the serving base station ... sends a request for the Cell Global Identity (CGI) of the unknown candidate base stations.” Petition, 26-27.

Petitioner maps Amirijoo’s CGI measurement request, shown in act (3) of Fig. 4, as the request that satisfies the claim language. Petition, 27-28. This request is sent from the serving base station to a mobile station that reported a neighbor base station with a local ID of which the serving base station had no prior knowledge. *Id.*

This does not satisfy the claim language, which requires that the request, to one or more selected user terminals, be for “cell information of a plurality of wireless access nodes.” Ex. 2001 ¶¶ 92-93. The CGI measurement request mapped by Petitioner is only for CGI measurement of a single neighbor base station having a local ID of which the serving base station had no prior knowledge. Ex. 1005 [0081]; Ex. 2001 ¶ 92. Specifically, Amirijoo states that:

If the serving base station (BS) has no prior knowledge of a neighbor base station (BS) with the reported local ID, the serving base station (BS) may send **a CGI measurement request to the mobile station (MS), as illustrated by act (3) in FIG. 4**. As illustrated by act (4 b) of FIG. 4, the mobile station (MS) measures the Cell Global Identity (CGI) of **the** candidate base station (BS) ... and (as illustrated by act (4 a)) reports **the** Cell Global Identity (CGI) to the serving base station (BS).

Ex. 1005 [0081]. Thus, the mapped request, sent in Figure 4 act 3, is not to report cell information of a plurality of wireless access nodes. Rather, this is a request sent only when the serving base station, after receiving the local ID from the mobile station (Fig. 4, act 2b.), determines that it has no prior knowledge of that specific neighboring base station. *Id.* [0080]-[0081]. The request is then sent (Fig. 4, act 3) to that reporting mobile station, which measures the unique CGI of the specific unknown base station. This is a request to the mobile station that sent the unknown base station local ID that it provide the CGI of only a single candidate base station—specifically, the one having the previously unknown local ID. Ex. 2001 ¶ 92.

Petitioner apparently recognizes that its mapped request for reporting of CGI information is not for a plurality of wireless access nodes/base stations. Thus, in attempting to patch over this flaw in its analysis, Petitioner cites Amirijoo [0079]-[0080], which state that “measurements from certain mobile stations chosen using the triggering conditions(s) ... are used to detect inter-RAT/frequency neighbors”

and that “[t]he mobile station (MS) measures the signal quality of surrounding inter-RAT/frequency base stations.” Petition, 28; Ex. 1005 [0079]-[0080]. These passages do not relate to the CGI measurement request sent in act 3 of Figure 4, but rather to the mobile station’s initial measurement and reporting of the signal quality of surrounding base stations, once Amirijoo’s triggering conditions are triggered. Ex. 1005 [0079]-[0080]; Ex. 2001 ¶ 94. That is, these passages relate to acts 1 and 2 of Figure 4, which Petitioner maps to the detector and selector of elements 1[a] and 1[b], respectively. Petition, 23-26. Only after this initial signal quality measurement of multiple base stations is reported back to the serving base station does the serving base station then issue a request for CGI information of a specific reported base station unknown to the serving base station, not for a plurality of such stations. Ex. 2001 ¶ 94.

The request mapped by Petitioner does not meet the requirements of element 1[c], which requires “a request generator configured for requesting . . . one or more of the selected user terminals to report cell information **of a plurality of wireless access nodes** ....” Ex. 1001, 11:63-67. The claim requires a request to report cell information of a plurality of wireless access nodes, but the “Measurement Request, CGI” of Amirijoo relates only to a single, specific wireless access node, the one that is unknown to the serving base station. *See* Ex. 1005 [0081]; Ex. 2001 ¶ 95.

The '560 Patent specification fully supports this understanding of the claim language, requiring that the request must be for a plurality of nodes, not simply a single unknown node. Ex. 2001 ¶ 96. The '560 patent relates to updating the neighbor cell list (NCL). *See* Section III.A. The specification explains that “[a]t present, standardization does not allow mobile terminals to measure cells not present in the NCL.” Ex. 1001, 2:57-59. That is, user terminals (in the prior art) would report back to the serving base station only information about cells which are in the NCL. Therefore, the inventive system “performs a complete scan for **all cells** [in the first and/or second wireless access network] ... to obtain a **complete picture** of the available cells around the first wireless access node. This complete information **containing the scan of all cells** may then be used for updating the NCL(s).” *Id.*, 3:14-22. Thus, the specification repeatedly and uniformly references the reporting of cell information of “the **plurality** of wireless access nodes,” i.e., of more than one cell. *See id.*, Abstract, 2:26, 2:41, 2:50, 3:3, 3:6, 3:64, 4:15, 4:32, 4:40, 4:57, 4:65, 5:4, 5:11, 5:58, 5:66, 8:30, 8:32, 8:34, 8:45, 9:9. In discussing the “missing neighbour” effect (a neighbor missing from the NCL), although using the singular “neighbour,” the specification specifically states that “present embodiments may reduce this problem by instructing the user terminals to also scan for cell information of wireless access **nodes** ... being absent in the neighbour cell list.” *Id.*, 4:20-37.

Thus, the specification confirms throughout that this request is for information about more than one node or cell, not merely a single node or cell. Ex. 2001 ¶ 96.

Again, Amirijoo’s CGI request relates only to a single wireless access node – the “candidate” base station selected for handover, and that is unknown to the serving base station. No matter how many requests Amirijoo’s system sends, each request is only for CGI of a single, specific unknown node, not a plurality of nodes. Ex. 2001 ¶ 97.

Therefore, Amirijoo teaches that the CGI request is a request sent from the serving base station to a mobile station to report information on a single base station that has been identified as a candidate for handover. Ex. 2001 ¶ 98. This is not a plurality of nodes or base stations. *Id.* Accordingly, Ground 2 does not disclose this element and cannot render claim 7 unpatentable. *Id.* ¶ 99.

**2. Ground 2 does not disclose or suggest using location information as a selection parameter for selecting the part of the detected user terminals.**

In Ground 2, Petitioner asserts that Kazmi discloses using location information as a parameter for selecting the part of the detected user terminals required by claim 7. Petition, 51.

Kazmi, “Systems and Methods for Automatically Determining the Global Cell Identifier of a Neighboring Cell,” generally discloses methods for automatically updating a neighbor cell list based on radio signal metrics such as PCI (physical layer

cell identifier) frequency, signal quality, and mobile terminal or UE speed. Ex. 2001 ¶¶ 64. Kazmi discloses selecting particular user terminals, based on these metrics, to report neighboring cells. In Kazmi, this process is managed by the network. *Id.* ¶¶ 56-63.

Petitioner points to two disclosures in Kazmi as allegedly disclosing using location as a selection parameter. First, to Kazmi's statement that "the UE selected to obtain the GCI is a UE that is expected to be close to" the unknown cell for which a global cell identifier is to be obtained by the user equipment/mobile terminal. Petition, 51; Ex. 1007 [0037]. Second, to Kazmi's use of the user equipment's speed. Petition, 51; Ex. 1007 [0043]. As shown below, neither disclosure teaches using location as a selection parameter. Ex. 2001 ¶¶ 101-115.

**a. Kazmi's "close to" language does not refer to using location as a selection parameter, but to signal strength.**

In paragraph 37, Kazmi refers to its processes 500 and 600 for adding the GCI of an unknown cell (103*b*) to the neighbor cell list for the serving base station (103*a*). Ex. 1007 [0035]-[0037]. Kazmi references the thresholds used in these processes as being chosen to "provide sufficient assurance that cell 103*b* is indeed a neighbor cell that should be added to the neighbor cell list belonging to cell 103*a*." *Id.* [0037]. For process 500, these thresholds are: 1) T1, a minimum count of the number of times the user equipment has sent a message containing an identifier associated with cell

103b; 2) T2, a minimum time elapsed since performing step 501; and 3) S, a maximum speed threshold for the speed of the user equipment, under which the serving base station would instruct the user equipment to obtain the GCI of cell 103b. Ex. 1007 [0035]. For process 600, these thresholds are 1) T3, a minimum count of the number of times all UEs have reported the PCI associated with cell 103b; and 2) T4, a minimum time elapsed since performing step 601. Ex. 1007 [0036]. A POSITA would have understood, as stated in Kazmi paragraph 37, that these thresholds “provide sufficient assurance that cell 103b is indeed a neighbor cell that should be added to the cell list belonging to cell 103a,” because they reduce transient and noisy readings such that only genuinely adjacent cells like 103b are added to the 103a’s neighbor list, i.e., reducing the number of unreliable and false positive readings. Ex. 2001 ¶¶ 102-104.

Kazmi paragraph 37 then states that “[a]dditionally, the UE selected to obtain the GCI is a UE that is expected to be close to cell 103b.” Ex. 1007 [0037]. Kazmi explains that “[t]his means **radio conditions experienced by the selected UE with respect to cell 103b are expected to be good**, thereby ensuring that the UE can obtain the GCI of cell 103b relatively quickly.” *Id.* That is, Kazmi states that good radio conditions generally indicate that the selected user equipment is “close to” the unknown cell 103b. Ex. 2001 ¶ 105. But a POSITA would not have understood this reference to “close to” to refer to using location itself as a selection parameter, but

rather than satisfying the thresholds of processes 500 and 600 would indicate that the user equipment has good radio conditions with respect to cell 103b. *Id.* A POSITA would have understood the reference to “radio conditions” here as referring to signal strength, which is also referred to as “radio distance” or the “communications range.” Ex. 2001 ¶ 105. This is not the same as location, because while a UE may be geographically close to a particular base station, it may still have a bad or weak signal due to various issues, such as a null due to channel fading, signal fluctuations or blockage due to terrain or man-made obstacles, and interference. *Id.*

Thus, paragraph 37 does not disclose or suggest using location itself as a selection parameter, but is merely stating an assumption or expectation that satisfying the indicated thresholds in processes 500 and 600 should preferentially select user equipment that has good radio conditions (“expected to be close to” the unknown cell). Ex. 2001 ¶ 106. The user equipment’s location is not used as a parameter, and if “close to” refers to actual location (which, as discussed, is not how a POSITA would have understood it) it is not a selection parameter but merely a by-product of satisfaction of the indicated thresholds. *Id.* Thus, Kazmi’s statement that the UE is “expected to be close to” the unknown cell does not disclose or suggest using location as a selection parameter. *Id.*

**b. Kazmi’s use of speed as a selection parameter does not disclose or suggest using location as a selection parameter.**

Petitioner asserts that Kazmi discloses using the “speed at which the selected UE is moving” as a selection parameter for selecting particular user equipment to instruct to obtain the GCI of a neighbor cell. Petition, 49, 51; Ex. 1007 [0041], [0043], [0046]. However, speed is not location. Petitioner thus engages in some logical legerdemain in an attempt to equate the two, asserting that speed is “calculated by determining the location of the user terminal at two different points in time to calculate how far the user terminal traveled in that elapsed time” and that “in order for the base station in Kazmi to calculate and use” speed as a selection parameter, “the base station would need to know and use the user terminal’s location.” Petition, 51.

Petitioner’s categorical assertion that a base station must “need to know and use” the user terminal’s location to calculate speed is simply false. Indeed, Petitioner acknowledges this by stating that “a base station or user terminal **typically** does not include any mechanism for directly calculating a user’s speed.” Petition, 51. If this is only typically the case, a base station may sometimes include such a mechanism.<sup>5</sup>

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<sup>5</sup> Indeed, Mach (Ex. 1008) states that “signal strength is used to determine the UEs speed.” Ex. 1008 [0038].

Ex. 2001 ¶¶ 108-109 (citing Ex. 2004). And because that is so, Kazmi's use of speed does not disclose or suggest the use of location to calculate speed.

Further, Petitioner's analysis that "speed is instead calculated by determining the location of the user terminal at two different points in time to calculate how far the user terminal traveled in that elapsed time" (Petition, 51) assumes that the terminal travels in a straight line between two points and with a constant speed. This is frequently not the case. Ex. 2001 ¶ 110. Determining user equipment speed based on reported coordinates is in fact atypical, because there are other typical methods such as: 1) quantifying the doppler shift in signals arriving from the UE at the serving base station and using this shift to estimate UE speed; 2) quantifying the Time of Arrival (ToA) or Time Difference of Arrival (TDoA) between two reference signals arriving at the UE or at the base station; and 3) quantifying the Angle of Arrival (AoA) from signals arriving from the UE at the serving base station that can be then used to determine/estimate the speed and direction of the UE. Ex. 2001 ¶ 110 (citing Ex. 2003).

Even if location was necessary to calculate speed, Kazmi still fails to disclose or suggest using location itself as a selection parameter, and only discloses using speed. There is simply nothing in Kazmi disclosing or suggesting using location as a selection parameter, but only speed. Ex. 2001 ¶ 111.

Recognizing this, Petitioner attempts to procure the missing element—using location as a selection parameter—from obviousness alone, even though that element is nowhere to be found in any of its asserted references. Petition, 51-52. But even Petitioner’s argument that it would have been obvious to use location information to calculate speed, with *speed* then being used as a selection parameter (Petition, 51) is not suggesting that *location* be used as a selection parameter. Ex. 2001 ¶ 112. Petitioner appears to acknowledge this, ultimately resorting to an alternative argument using Mach. Petition, 52. That argument is discussed below for Ground 4.

Further, if using speed as a selection parameter required determining location, it was not obvious for two additional reasons. First, there is ambiguity regarding the location—whether the location is the starting point or the ending point of the travel, or is it in the direction to the base station or moving away from the base station. Ex. 2001 ¶ 113. Because of this, the location cannot be determined by the speed parameter that is used in Kazmi’s 500 process. *Id.* Second, Kazmi’s failure to contain any disclosure or suggestion to use location as a selection parameter. That is, if a POSITA would have understood Kazmi as necessarily knowing the user terminal’s location so that it could calculate speed, the lack of any suggestion in Kazmi to use the location, instead of speed, indicates to a POSITA that the use of location alone

was not obvious. Ex. 2001 ¶ 113. Otherwise, Kazmi would have suggested doing so. *Id.*

Accordingly, a POSITA would not have understood Ground 2 to disclose or suggest using location as selection parameter for selecting the part of the detected user terminals, as required by Claim 7. Ex. 2001 ¶¶ 114-115.

### **C. Ground 4**

For Ground 4, Petitioner adds Mach (Ex. 1008) to the combination of Ground 2. Petition, 58. Mach, “Wireless System Improvements Based on Location Positioning System Data,” addresses operational optimization of user equipment by using the UE location and speed. Ex. 2001 ¶¶ 65-66, 117. Mach generally teaches using the location and speed provided by user equipment (e.g., via a GPS receiver) as “an additional input or as a replacement input to estimated position/speed” to existing algorithms deployed in cellular networks. Ex. 1008 [0038]-[0040]. That is, Mach teaches that the GPS information available in a user terminal may be used in existing protocols or algorithms, rather than the existing inputs for those algorithms/protocols, which used signal strength to estimate the terminal’s position or speed. *Id.* [0023], [0039]-[0040]. Mach thus relates to how a user terminal should behave internally based on its location—for example, based on its particular location whether the user terminal should conduct more frequent measurements. Ex. 2001 ¶ 71.

### **1. Ground 4 does not disclose element 1[c]**

The Petition does not provide any analysis for Ground 4 with regard to the elements of independent claim 1 that are part of Claim 7. Petition, 58-62. Apparently Petitioner intended by this omission to assert reliance on the Petition's Ground 1 analysis for these elements. Accordingly, the analysis set forth for Ground 2 above would also apply to Ground 4. *See* Section VI.B.1. Therefore, Ground 4 does not disclose all elements of Claim 7 and cannot render the claim unpatentable.

### **2. Ground 4 does not disclose or suggest using location information as a selection parameter for selecting the part of the detected user terminals.**

There is no question that Mach teaches using user terminal location derived from GPS instead of location information derived from signal strength. What Mach does not disclose or suggest is using location information as a selection parameter in the first place. Ex. 2001 ¶¶ 117-120. Thus, Mach cannot supply this missing element, absent the impermissible use of hindsight, using claim 7 as a roadmap for doing so. *See, e.g., Cheese Sys. v. Tetra Pak Cheese & Powder Sys.*, 725 F.3d 1341, 1352 (Fed. Cir. 2013) (explaining that obviousness “cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention”) (internal quotation marks omitted); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985) (“The invention must

be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.”)

Recognizing this, Petitioner attempts to supply the missing element (that is, using location as a selection parameter) by mischaracterizing Kazmi as using its “selection criteria to determine whether a user terminal is ‘close to’ the unknown cell” and that one of Kazmi’s selection parameters is “whether the user terminal is ‘close to’ to the unknown cell.” Petition, 60, 63. But as discussed, Kazmi does not use location as a selection parameter, nor does it teach using its selection criteria to determine location, but only expects that that location will be “close to” the unknown cell as a consequence of its processes based on threshold settings. *See* Section VI.B.2.a. “Close to” in Kazmi, as Kazmi expressly states, refers to radio conditions, not location. Ex. 1007 [0037]; Section VI.B.2.a. And while Mach teaches using location information in place of location estimates based on signal strength, Kazmi never teaches or suggests using location itself as a selection parameter. Rather, Kazmi teaches using speed as one of multiple selection parameters. Ex. 2001 ¶ 118; Section VI.B.2.

Petitioner’s proposal of using GPS information from Mach in Kazmi to calculate speed (Petition, 61) is perhaps what Mach contemplates in its disclosure. However, this merely provides a more accurate determination of speed than in

Kazmi. But there is no disclosure or suggestion in either reference to use location as a selection parameter *instead* of speed. Ex. 2001 ¶ 119.

Thus, Petitioner’s vague assertion that it would have been obvious to use GPS location information “for these selection parameters” (Petition, 63) is necessary to supply the element missing from the combination itself. Nothing in Mach discloses or suggests that the location of the user terminals should be collected before performing measurements, and then used as a parameter to select certain terminals to perform the measurements, as required by claim 7. Ex. 2001 ¶ 120. Likewise, there is nothing in the Ground 2 combination of Amirijoo-TR-32.816-Kazmi that references selecting only a subset of mobile devices based on their location information to perform measurements. *Id.* This idea comes from the claim, which requires “selecting the part of the detected user terminals” using location as a selection parameter. This is a classic example of using the challenged claim’s limitations to guide the selection and combination of the asserted references—hindsight bias.

Accordingly, the proposed combination of Ground 4 is still missing the claim 7 limitation requiring that location be used as a selection parameter. Nor is there any suggestion to modify Kazmi to use location instead of speed. Accordingly, Ground 4 fails to disclose or suggest all elements of claim 7. Ex. 2001 ¶ 121.

**3. There was no motivation to combine or reasonable expectation of success in combining the asserted references.**

Petitioner asserts that a POSITA would have been motivated to incorporate Mach with the Ground 2 combination “because of the well-known benefits of using GPS location information to improve network operations.” Petition, 59. Petitioner also assert that a POSITA would have understood that using GPS location information as taught in Mach “would allow Kazmi’s selection criteria to determine whether it is ‘close to’ [an] unknown cell. ” Petition, 60. Petitioner additionally asserts that a POSITA would be motivated to use GPS location information as a selection criteria “because a POSITA would understand that the signal strength of the user terminal to the serving base station or unknown neighboring base station is highly dependent on the precise location of the user terminal.” *Id.* Both of the motivations are based on Petitioner’s assertion that Kazmi “itself discloses that its selection criteria is used to determine whether a user terminal is ‘close to’ the unknown cell.” Petition, 60.

As discussed with respect to Ground 2, Petitioner’s underlying premise that Kazmi’s selection criteria determines whether a user terminal is “close to” the unknown cell is simply wrong. Section VI.B.2.a. As discussed, in Kazmi “close to” refers to radio conditions, not location. *Id.* To the extent “close to” can be interpreted as referring to location, Kazmi does not use location as a selection criteria, but the

location is merely a by-product of satisfaction of Kazmi's thresholds. *Id.*; Ex. 2001 ¶ 123.

Additionally, a POSITA would not have been motivated to combine Mach with Amirijoo-TR-32.816-Kazmi because a POSITA would have understood that the references solve distinct and unrelated technical problems. Ex. 2001 ¶ 124. A POSITA would have understood that Amirijoo focused on user terminal execution procedures, specifically how a user terminal measures unknown cells, not selecting which user terminals should do so. Ex. 2001 ¶¶ 124-125. A POSITA would have understood that Kazmi was directed to network-side logic focused on NCL accuracy, specifically on automatically updating the NCL based on radio signal metrics. *Id.* A POSITA would have understood that Mach was focused on UE-side measurement behavior efficiency, specifically UE-side operational optimization using location and speed. *Id.* A POSITA would have recognized that neither Amirijoo nor Kazmi disclose using location as a selection parameter for updating NCLs (or anything else). *Id.* ¶ 124. A POSITA would also have recognized that while Mach does disclose determining the location of a user terminal, it contains no teaching or suggestion of using that information for updating NCLs. *Id.* Rather, Mach discloses how a user terminal may internally adapt its measurement behavior (for example, modifying measurement and reporting frequency) based on that location. *Id.* Thus,

a POSITA would have understood that these references are directed to solving different problems. *Id.* ¶ 125.

Petitioner asserts that a POSITA would have reasonably expected the proposed combination to succeed because “Mach provides sufficient disclosure for a POSITA to implement its teachings” into the Ground 2 combination, and that “[u]sing such information as selection criteria would further be within the skill of an ordinary artisan, as calculating distances and speed using GPS location information ... would simply use rudimentary mathematics.” Petition, 61-62. This simplistic analysis ignores the fact that Kazmi’s decision logic in choosing user terminals is entirely non-location based, and would need to be modified (with concepts not found in any asserted reference) to include location as a selection criteria. Ex. 2001 ¶ 126. The combination would thus have required a POSITA to replace Kazmi’s selection criteria (which was based on counters tied to signal strength), add GPS data reporting from the user terminal to the base station, and implement entirely new decision logic on the base station using GPS coordinates. *Id.* A POSITA would have recognized this would not be a simple substitution or combination, but rather a fundamental architectural change. *Id.* Given the breadth of the changes, overall, it is clear that the proposed combination would not have been made to incorporate location as a selection criteria, absent hindsight bias.

## VII. Conclusion

As Petitioner has failed to show that claim 7 is more likely unpatentable than not, KPN respectfully requests the Board deny institution.

Dated: May 27, 2025

Respectfully submitted,

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## **CERTIFICATE OF COMPLIANCE**

The undersigned certifies that this document complies with the type-volume limitations set forth in 37 C.F.R. § 42.24 *et seq.* This document, excluding those portions excluded pursuant to § 42.24(a)(1), contains 7,102 words as calculated by the program used in creating it.

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**CERTIFICATE OF SERVICE**

Pursuant to 37 C.F.R. §§ 42.6(e)(4), the undersigned certifies that on May 27, 2025, copies of Patent Owner’s Preliminary Response and Exhibits 2001-2004 were served via email on the following attorneys of record at the below email address, at which Petitioner has consented to email service pursuant to its current mandatory notices:

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