NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

MOBILITY WORKX, LLC,
Appellant

v.

UNIFIED PATENTS, LLC,
Appellee

KATHERINE K. VIDAL, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2020-1441

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2018-01150.

Decided: July 14, 2022

DAVID A. RANDALL, Hackler Daghighian Martino & Novak, Los Angeles, CA, argued for appellant. Also represented by MICHAEL MACHAT, Law Offices of Michael Machat, PC, West Hollywood, CA.

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DANA KAERSVANG, Appellate Staff, Civil Division, United States Department of Justice, Washington, DC, argued for intervenor. Also represented by MELISSA N. PATTERSON; KAKOLI CAPRIHAN, SARAH E. CRAVEN, THOMAS W. KRAUSE, FARHEENA YASMEEN RASHEED, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA.

ROBERT GREENSPOON, Dunlap, Bennett, & Ludwig, PLLC, Chicago, IL, for amicus curiae US Inventor, Inc.

Before NEWMAN, SCHALL, and DYK, *Circuit Judges*.

DYK, *Circuit Judge*.

Mobility Workx, LLC ("Mobility") appeals a decision of the Patent Trial and Appeal Board ("Board") determining that claims 1, 2, 4, 5, and 7 of U.S. Patent No. 8,213,417 ("the '417 patent") were unpatentable as obvious. We *affirm*.

BACKGROUND

I

Mobility is the owner of the '417 patent, which is titled "System, Apparatus, and Methods for Proactive Allocation of Wireless Communication Resources." '417 patent, col. 1, ll. 1–3. The patent is "generally directed to allocation of communication resources in a communications network." Mobility Br. 7. On June 1, 2018, Unified Patents, LLC ("Unified") filed a petition seeking inter partes review of claims 1–7 of the '417 patent on the theory that those claims would have been obvious over U.S. Patent No.

5,825,759 ("Liu") in combination with several other references. On December 2, 2019, the Board issued its final written decision, determining that claims 1, 2, 4, 5, and 7 were unpatentable as obvious, but that claims 3 and 6 were not shown to be unpatentable. Mobility appealed.

In addition to challenging the Board's decision on the merits, Mobility raised several constitutional challenges regarding the Board based on the Supreme Court's decision in *Tumey v. Ohio*, 237 U.S. 510 (1927), and additionally requested a remand under *United States v. Arthrex, Inc.*, 141 S. Ct. 1970 (2021). We rejected Mobility's *Tumey* arguments and, without reaching the merits, remanded to the Board "for the limited purpose of allowing Mobility the opportunity to request Director rehearing of the final written decision." *Mobility Workx, LLC v. Unified Patents, LLC*, 15 F.4th 1146, 1157 (Fed. Cir. 2021). At the same time, we retained jurisdiction over the appeal.

On the remand, Mobility did not request Director rehearing and, accordingly, the Board's final written decision in the case remains the final agency decision. In May 2022, the parties jointly informed the court that "they [we]re not aware of any reason that the Court should not proceed with a decision on the merits in this case." Joint Notice 1, ECF No. 97. We lifted the stay and reinstated the appeal on May 12, 2022.

II

The merits are now before us. As recited in our prior opinion, the Background section of the '417 patent explains that mobile communication systems are typically composed of mobile nodes (e.g., cell phones) that communicate with one another through a series of base stations. Base stations serve different zones or cells, such that when a mobile node moves from one cell to another, it must connect to a new base station. When a mobile node has connected to a new base station, i.e., when it is moving, it must let other mobile nodes know where it can be reached. This can be

accomplished by having a mobile node register with a "home agent so that the home agent can remain a contact point for other nodes that wish to exchange messages . . . with the mobile node as it moves from one location to another." '417 patent, col. 1, ll. 39–44.

This system "allows a mobile node to use two IP addresses, one being a fixed home address and the other being a care-of address." *Id.* at col. 1, ll. 45–47. The home address is assigned by the home agent. The care-of address, on the other hand, is received when a mobile node moves out of its home network and connects to foreign networks using foreign agents that act "as wireless access points distributed throughout a coverage area of a network or an interconnection of multiple networks." *Id.* at col. 1, ll. 57–60. However, delays and information losses can occur when a mobile node moves from one foreign network to another because "the new communication link cannot be set up until the mobile node arrives in the new foreign agent's physical region of coverage." Mobility Br. 8.

The '417 patent attempts to prevent these delays and data losses by using a ghost foreign agent and a ghost mobile node that "can be configured to register the mobile node and allocate resources for communicating with the mobile node according to a predicted future state of the mobile node." '417 patent, col. 2, ll. 44–61. In other words, "the ghost mobile node operates by signaling the foreign agent before the mobile node arrives in the foreign agent's physical region of coverage, based upon the predicted future state of the mobile node." Mobility Br. 9. This, in turn, increases the speed with which a mobile node can connect to a new network, reducing delays and avoiding information losses.

Claim 1 of the '417 patent (from which claims 2, 4, and 5 depend) recites:

> A system for communicating between a mobile node and a communication network; the network

> having at least one communications network node that is interconnected using a proxy mobile internet protocol (IP), comprising:
>
> at least one mobile node;
>
> at least one home agent;
>
> at least one foreign agent;
>
> a ghost-foreign agent that advertises messages to one of the mobile nodes indicating presence of the ghost-foreign agent on behalf of one of the foreign agents when the mobile node is located in a geographical area where the foreign agent is not physically present; and
>
> a ghost-mobile node that creates replica IP messages on behalf of a mobile node, the ghost-mobile node handling signaling required to allocate resources and initiate mobility on behalf of the mobile node, *the ghost-mobile node triggering signals based on a predicted physical location of such mobile node or distance with relation to the at least one foreign agent*.

'417 patent, col. 12, ll. 49–67 (emphasis added).

During the Board proceedings, Mobility argued that the claims were not obvious because the prior art failed to disclose the ghost-foreign agent limitation. The Board found that Liu, or alternatively, the combination of Liu with U.S. Patent Application Publication 2002/0131386 A1 ("Gwon"), taught the ghost-mobile node limitation. The Board concluded that claims 1, 2, 4, 5, and 7 were shown to be obvious in light of the combination of Liu, Gwon, and various other references. We have jurisdiction over this appeal under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

"Obviousness is a mixed question of fact and law," and the Board's conclusion that the claims are obvious is a "legal determination subject to de novo review" while "subsidiary factual findings are reviewed for substantial evidence." *Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1327 (Fed. Cir. 2017). Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

Mobility argues that the Board erred with respect to claim 1 because Liu, the relevant prior art reference, does not teach the "the ghost-mobile node triggering signals based on a predicted physical location of such mobile node or distance with relation to the at least one foreign agent" limitation ("the triggering limitation"). '417 patent, col. 12, ll. 61–67.[1] Mobility does not separately challenge the Board's decision with respect to dependent claims 2, 4, and 5, so they stand or fall with claim 1. Mobility also raises no arguments regarding independent claim 7, which the Board found unpatentable on other grounds.

Liu relates to "methods and apparatus for supporting data and service mobility to users of mobile networks." Liu, col. 1, ll.14–16. It discloses the following:

> In accordance with one aspect of the invention, network services and resources are distributed to a mobile user in a mobile communication system by providing the mobile user with a *mobility (M)-agent*

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[1] The Board alternatively concluded that the combination of Liu and Gwon taught this limitation. Mobility argues that this was error for "the same underlying issue" that it raises with respect to Liu alone. Mobility Br. 65. Because we affirm the Board's decision based on Liu alone, we need not address the combination of Liu and Gwon.

> [(corresponding to the 'ghost-mobile node' of the '417 patent)] executing on a home fixed host or router. It is then determined that the mobile user is or will be travelling to a destination that is outside a service area of the home fixed host or router, and a pre-assignment request is sent from the M-agent to at least one mobile floating (MF)-agent manager executing on a corresponding one of a like number of remote fixed hosts or routers located at the destination. . . . *A mobile floating (MF)-agent is then established for use by the mobile user at each of the remote fixed hosts or routers, and the M-agent is used to send data or service information from the service area of the home fixed host or router to the MF-agent at each of the remote fixed hosts or routers.* In this way, services and/or data may be pre-connected/pre-arranged at the mobile user's destination.

Liu, col. 2, ll. 11–34.

The Board determined that Liu's M-Agent teaches the "ghost-mobile node" limitation, which includes the triggering limitation. *See* J.A. 29–31. The Board was "persuaded by [Unified's] unrebutted evidence that Liu . . . teach[es] or suggest[s]" the ghost-mobile node limitation and "agree[d] with [Unified] that Liu's M-agent handles pre-assignment signaling on behalf of the mobile device to prearrange services (allocate resources) and initiate mobility on behalf of the mobile device, and further does so based on a predicted physical location of the mobile device." J.A. 31.

Mobility argues that this was error under the plain meaning of "trigger" because in Liu, it is "the mobile terminal [(i.e., the cell phone) that] generates and sends the pre-assignment request, along with the address of the new location of where it is traveling to, and the M-Agent [(the ghost-mobile node of the '417 patent)] merely forwards the request to the MF-agent manager(s) at the new location(s)

specified by [the] mobile node," and that "[f]orwarding is not triggering." Mobility Br. 61; Mobility Reply Br. 25. In support of its argument, Mobility cites to the following portion of Liu:

> The M-agent 50 is a representative of the user 21 in the network and is responsible in part for creating, deleting and managing the MF-agents on behalf of mobile users. An M-agent 50 requests creation or assignment of MF-agents 52. *As shown in FIG. 7 a mobile terminal 55 [(cell phone)] sends an MF-agent assignment request to its M-agent 50 [(the ghost-mobile node)], in the local network, with an address of a new location it is travelling to (701).* The new location may be one that has been explicitly provided by the user 21, or it may be one predicted by the PMM[2] functions 46. The assignment request is a request to establish (i.e., alternatively create or pre-assign) an MF-agent 52 at the location that the mobile terminal 55 will be travelling to and thus have any necessary services and data ready for the mobile terminal, when it arrives at the new location. *The M-agent 50 then registers the request and forwards the request 65 to the remote MF-agent manager at the new location (702).*

Liu, col. 7, ll. 22–38 (emphasis added).

Mobility concedes that it did not raise this argument to the Board and that it does so for the first time on appeal.

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[2] PMM stands for "Predictive Mobility Management." Liu, col. 19, ll. 4–14. It is "*used to predict the future location of a mobile user according to the user's movement history patterns*. The combination of the mobile floating agent concepts with the predictive mobility management allow for service and resource pre-arrangement." *Id.* (emphasis added).

For that reason, it may be that the argument is waived. *E.g.*, *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284, 1293 n.3 (Fed. Cir. 2015) (finding patentee waived argument where it raised only "a few scattered sentences" at the oral hearing); *Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 582 F.3d 1288, 1296 (Fed. Cir. 2009) ("[I]f a party fails to raise an argument before the trial court, or presents only a skeletal or undeveloped argument to the trial court, we may deem that argument waived on appeal.").

In any case, the argument is facially incorrect. The '417 patent claims a ghost-mobile node "handling signaling required to allocate resources and initiate mobility on behalf of the mobile node, the ghost-mobile node triggering signals based on a predicted physical location of such mobile node or distance with relation to the at least one foreign agent." '417 patent, col. 12, ll. 62–67. Unified's expert testified that "[t]he M-Agent acts on behalf of the mobile device by *initiating* registration with a foreign agent in the foreign network." J.A. 589 (emphasis added). The same section of Liu quoted earlier discloses that the M-Agent is "responsible in part for creating, deleting, and managing the MF-agents on behalf of mobile users" and that "M-Agent 50 requests creation or assignment of MF-agents 52." Liu, col. 7, ll. 23–24, 26–27. The M-Agent performs these functions after receiving an assignment request from a mobile node with "an address of a new location it is travelling to." *Id.* at col. 7, ll. 26–28.

Mobility did not request claim construction of the triggering limitation before the Board. The plain meaning of trigger is "[a]n event or situation that upon its occurrence activates a thing or a process." *Trigger*, Black's Law Dictionary (11th ed. 2019). The M-Agent (i.e. ghost-mobile node) plainly triggers signals "to allocate resources and initiate mobility on behalf of the mobile node . . . based on a predicted physical location" when it registers and forwards the assignment request from mobile nodes (cell phones) to MF-agents. '417 patent, col. 12, ll. 63–66. Nothing in the

plain meaning of the triggering limitation forecloses the M-Agent in turn being triggered by a request from the mobile node (cell phone). We see no error in the Board's obviousness determination, which is supported by substantial evidence.

CONCLUSION

We affirm the Board's decision holding unpatentable claims 1, 2, 4, 5, and 7 of the '417 patent.

AFFIRMED