

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

IXI IP, LLC,
Patent Owner.

IPR2015-01442
Patent 7,295,532 B2

Before TRENTON A. WARD, KRISTINA M. KALAN, and
JOHN A. HUDALLA, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Apple Inc. (collectively “Petitioner”) filed a Petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1, 4, 5, 7–10, 12, 14–16, and 23–24 of U.S. Patent No. 7,295,532 B2 (Ex. 1001, “the ’532 patent”) pursuant to 35 U.S.C. §§ 311–319. IXI IP, LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we decline to institute an *inter partes* review as to claims 1, 4, 5, 7–10, 12, 14–16, and 23–24 as discussed below.

II. BACKGROUND

A. Related Matters

The parties indicate that the ’532 patent is the subject of the following district court proceedings: *IXI Mobile (R&D) Ltd. v. Samsung Electronics Co.*, Case No. 3:15-cv-03752-HSG (N.D. Cal.); *IXI Mobile (R&D) Ltd. v. Apple, Inc.*, Case No. 4:15-cv-03755-PJH (N.D. Cal.); and *IXI Mobile (R&D) Ltd. v. Blackberry Ltd.*, Case No. 3:15-cv-03754-RS (N.D. Cal.). Pet. 1–2; Paper 5, 1–2, Paper 7, 1–2. Petitioner also indicates that the ’532 patent is the subject of a petition for *inter partes* review in IPR2015-01443. Pet. 2.

B. The ’532 Patent

The ’532 patent describes a system, device and computer readable medium that monitors and reconfigures a local area network (“LAN”) by a wide area network (“WAN”) operator. Ex. 1001, Abstract. The ’532 patent

is directed to “a hand held device for providing communication between a wide area network and a wireless local area network.” *Id.* at 1:61–63.

Figure 1, reproduced below, illustrates an exemplary system of the '532 patent. *Id.* at 4:55–56.

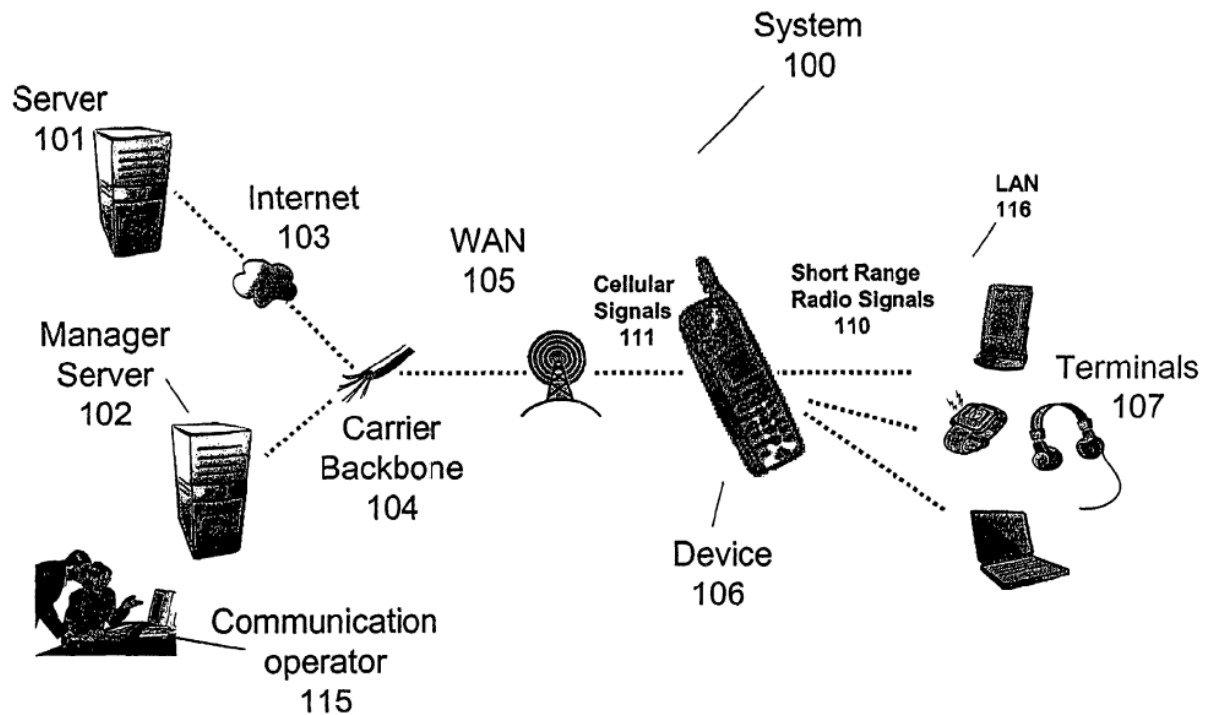


Fig. 1

Figure 1 shows wireless device 106 and one or more terminals 107 communicating via short-range radio signals 110 to form LAN 116. *Id.* at 5:30–35. Figure 1 also shows WAN 105 coupled to device 106; WAN 105 includes a cellular network transmitting and receiving cellular signals 111. *Id.* at 5:52–55. WAN 105, carrier backbone 104, and manager server 102 are, singly or in combination, a telecommunication network managed and monitored by operator 115. *Id.* at 5:62–65. WAN 105 is shown as being coupled to wireless carrier internal network or carrier backbone 104, or Internet 103. *Id.* at 6:20–25. In one embodiment, servers 101 and 102

provide information to terminals 107 by way of device 106. *Id.* at 6:26–29. Microrouter 404 of device 106 “enables an IP based network between the device 106 and terminals 107.” *Id.* at 8:29–30. Software components, or plug-ins 406, may be added to microrouter 404, using software components called hooks 590, to provide various LAN network services. *Id.* at 6:29–31, 8:33–36, 45–49. A remote operator on WAN 105 is able to load software on device 106 to provide LAN network services to devices on LAN 116. *Id.* at 5:10–13, 10:11–17.

C. Illustrative Claim

Claim 1 of the '532 patent is reproduced below:

1. A hand-held device for enabling communication between one or more devices connected to one or more cellular networks and one or more devices connected to a wireless local area network, comprising:

- a) a first transceiver to communicate with the one or more devices connected to said one or more cellular networks by sending and receiving cellular signals, the first transceiver having a cellular network address;
- b) a second transceiver to communicate with the one or more devices connected to the wireless local area network by sending and receiving short-range radio signals;
- c) a storage device to store:
 - c.1. a router software component to transfer a plurality of data packets between the one or more devices connected to the one or more cellular networks and the one or more devices connected to the wireless local area network by the cellular signals and the short-range radio signals; and
 - c.2. an interface software component to add a first network service software component that provides one or more network services to the wireless local area network, the first network service software component loaded into the storage device from the one or more devices

connected to the one or more cellular networks: and one or more processors connected to the storage device to process the cellular signals and the short-range radio signals, wherein the cellular network includes a plurality of public IP addresses and the wireless local area network includes a plurality of private IP addresses, and wherein the router software component translates a first IP address in the plurality of public IP addresses to a second IP address in the plurality of private IP addresses.

Ex. 1001, 16:40–17:7.

D. The Prior Art

Petitioner relies on the following prior art:

1. PCT Pub. No. WO 00/41529 to Snelling *et al.*, published July 20, 2000 (“Snelling”) (Ex. 1005);
2. Dan Decasper *et al.*, *Router Plugins A Software Architecture for Next Generation Routers*, *Proceedings of ACM SigComm '98 Conference*, 28 COMP. COMM. REV. 4 (October 1998) (“Router Plugins”) (Ex. 1006);
3. IEEE Std. 802.11b-1999, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Higher-Speed Physical Layer Extension in the 2.4 GHz Band (published January 20, 2000) (“802.11b”) (Ex. 1007);
4. P. Srisuresh & M. Holdredge, *RFC 2663: IP Network Address Translator (NAT) Terminology and Considerations* (August 1999) (“RFC 2663”) (Ex. 1008); and
5. U.S. Patent No. 6,963,912 B1 to Schweitzer *et al.*, issued November 8, 2005 (“Schweitzer”) (Ex. 1009).

E. The Asserted Grounds

Petitioner challenges claims 1, 4, 5, 7–10, 12, 14–16, and 23–24 of the '532 patent on the following grounds (Pet. 4):

References	Basis	Claim(s) Challenged
Snelling and Router Plugins	§ 103	1, 4, 5, 8, 10, 12, 14, and 23

Snelling, Router Plugins, and 802.11b	§ 103	7
Snelling, Router Plugins, and RFC 2663	§ 103	9
Snelling, Router Plugins, and Schweitzer	§ 103	15, 16, and 24

In support of its challenges, Petitioner relies on the Declaration of Dr. Sayfe Kiaei (Ex. 1003).

III. ANALYSIS

We turn now to Petitioner’s asserted grounds of unpatentability, Patent Owner’s arguments in the Preliminary Response, and the supporting evidence to determine whether Petitioner has met the threshold standard of 35 U.S.C. § 314(a).

A. Claim Interpretation

The Board interprets claims in an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–78 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning in view of the specification, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Although the parties discuss constructions for several claim limitations (Pet. 9–15, Prelim. Resp. 10–17), on this record and for purposes of this decision, we determine that only one claim terms requires express construction.

Petitioner proposes that the term “a hand-held device,” which “only appears in the preamble,” does not limit the claimed invention and that no construction is necessary. Pet. 10–12. Petitioner also argues the term should be construed broadly enough to encompass a *mobile* device for enabling communication between one or more devices connected to one or more cellular networks and one or more devices connected to a wireless local area network. *Id.* at 12.

Patent Owner argues a person of ordinary skill in the art would understand the meaning of “a hand-held device” to be “its plain and ordinary meaning, without any additional construction.” Prelim. Resp. 11. Patent Owner further argues Petitioner provides no support for its proffered interpretation of the term, and that “[m]obile is not synonymous with hand-held.” *Id.* at 13.

Before construing the term “hand-held device,” we address whether its appearance in the preamble renders it limiting. “A claim’s preamble may limit the claim when the claim drafter uses the preamble to define the subject matter of the claim.” *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1284 (Fed. Cir. 2011). “In general, a preamble limits the invention if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (citing *Pitney Bowes Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). “Whether to treat a preamble as a limitation is a determination ‘resolved only on review of the entire[] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.’” *Id.* at 808 (quoting

Corning Glass Works v. Sumitomo Electric U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989)).

“Where a patentee uses the claim preamble to recite structural limitations of his claimed invention, the PTO and courts give effect to that usage.” *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997); *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) (when limitations in the body of the claim rely upon or derive essential structure from the preamble, then the preamble may act as a necessary component of the claimed invention).

Our consideration of the evidence leads us to the conclusion that the preamble is limiting. The term “hand-held device” appears prominently in the specification. In the “Summary of the Invention” section, the specification states: “A *hand-held device* for providing communication between a wide area network and a wireless local area network is provided” Ex. 1001, 1:61–64 (emphasis added). This section also states: “According to an embodiment of the present invention, the *hand-held wireless device* is a cellular telephone” Ex. 1001, 4:1–2 (emphasis added). The specification uses the term “hand-held device” as the heading for Detailed Description Section II, which describes device 106 and terminals 107: “II. Hand-held Device/Terminal Hardware” in which “FIG. 2 illustrates embodiments of terminals 107 and device 106.” *Id.* at 6:36–38. Rather than glossing over the role of the hand-held device in the overall invention, other portions of the specification provide additional details about the hand-held nature of the claimed device. *See, e.g., id.* at Abstract (identifying a cellular telephone), 6:16–19 (identifying different embodiments of the present invention), 6:37–59 (discussing the hand-held

device with reference to Fig. 2), 14:23–15:38 (discussing usage scenarios including a cellular telephone as the hand-held device).

The term “hand-held device” appears prominently in the claims as well. The challenged claims all are directed to a device, rather than a method or a system; in each case, the device is a hand-held device. The term “hand-held device” recites a structural limitation of the claim, in that the “hand-held” aspect of the device is a dimensional, physical restriction on the size of the device. The limitations in all of the claims rely upon or derive essential structure from the preamble, in that they are housed within a hand-held device, which limits the size and adaptations required of the remaining limitations in the claims. Every claim depending from claim 1 recites “[t]he hand-held device of claim 1.” Ex. 1001, 17:8–18:47. Thus, we determine the use of “hand-held device” in the preamble of the challenged claims is limiting, in that it denotes a structural limitation of the claimed device.

Having determined that the term “hand-held device” is limiting, we turn to the construction of the term. Petitioner urges that the term be construed “broadly enough to encompass a *mobile* device for enabling communication between one or more devices connected to one or more cellular networks and one or more devices connected to a wireless local area network.” Pet. 12. Patent Owner, although urging that no additional construction is needed, states the plain meaning of the term “hand-held device” is “a device that is hand-held, *i.e.*, a device that that is designed to be held and operated in a person’s hand.” Prelim. Resp. 11–12. We adopt Patent Owner’s construction, namely, “a device that is designed to be held and operated in a person’s hand.”

In support of its argument that the term should be construed broadly enough to encompass a mobile device, Petitioner relies on this passage in the specification: “In an embodiment of the present invention, device 106 is a cellular handset or telephone. In an alternate embodiment of the present invention, device 106 is a cellular enabled PDA, wireless modem and/or wireless laptop computer.” Pet. 13 (quoting Ex. 1001, 6:16–19). Regarding this passage, we agree with Patent Owner that Petitioner does not explain how the referenced devices in the alternate embodiment relate to the term “hand-held device,” or why they would be considered mobile devices.

Prelim. Resp. 13. Claim 1 is directed to a hand-held embodiment of the invention. Claims often are directed to a narrower embodiment or disclosure than those presented in the specification as a whole. *See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008). The fact that other devices are disclosed as alternate embodiments in the specification does not detract from the express inclusion of a “hand-held device” in the challenged claims.

Moreover, we are not persuaded the term “hand-held device” should be construed broadly enough to be equivalent to the term “mobile device.” Hand-held does not necessarily mean mobile, and mobile does not necessarily mean hand-held. *See* Prelim. Resp. 13. Petitioner argues: “These devices [cited in the passage at Ex. 1001, 6:16–19], in general, are mobile devices.” Pet. 13. This reasoning, however, does not provide adequate explanation of the meaning of the term “mobile device,” or whether it has its own meaning as a term of art. Similarly, Petitioner does not provide sufficient reasoning why the term “mobile device” would apply to the list of alternate embodiments cited in the passage. Thus, we are not persuaded by

Petitioner's argument that "hand-held device" should encompass a mobile device.

Therefore, we find the preamble term "hand-held device" to be limiting, and thus the claimed device is a "hand-held device" as we have construed the term, i.e., "a device that is designed to be held and operated in a person's hand."

B. Grounds Asserted

1. Ground Based on Snelling and Router Plugins

Petitioner challenges claims 1, 4, 5, 8, 10, 12, 14, and 23 as obvious under 35 U.S.C. § 103(a) over Snelling and Router Plugins. Pet. 15–44. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 17–39.

Snelling is directed to a network control unit ("NCU") that provides connectivity between devices on a local network and external telecommunications networks. Ex. 1005, Abstract, 4:24–26. Devices on the local network are coupled to wireless access units ("WAUs") that communicate via RF link with the NCU. *Id.* at Abstract. Snelling states that its local area network "can be entirely mobile, connected to outside telecommunications networks via air interfaces such as cellular." *Id.* An example of Snelling's NCU is shown in Figure 3A:

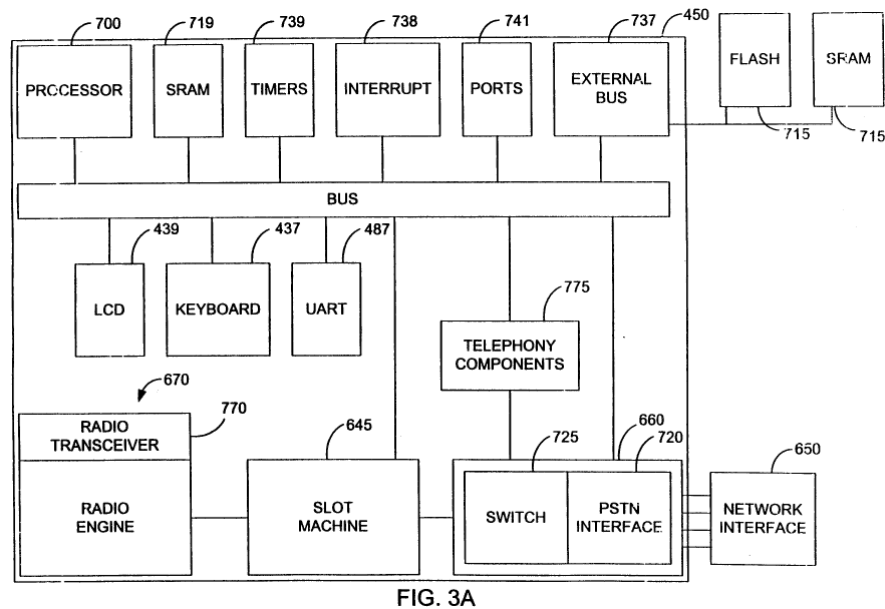


Figure 3A above illustrates, in functional block diagram format, an embodiment of an NCU according to Snelling. *Id.* at 12:16–18. Figure 1 below shows NCU 100 in operation in a residential unit.

FIG. 1

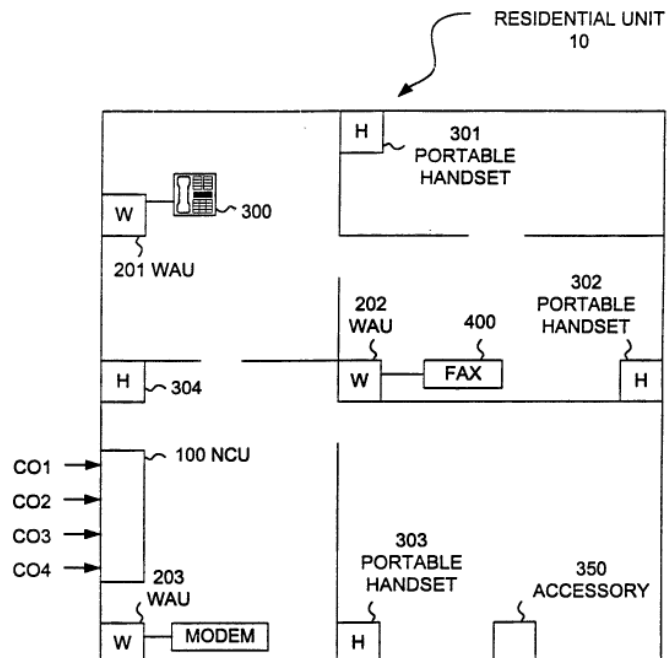


Figure 1 above is a schematic view of a residence featuring one embodiment of Snelling's system. *Id.* at 12:12–13.

Router Plugins is directed to a software architecture that can “dynamically upgrade router software in an incremental fashion” and is designed to be compatible with operating systems of small and mid-sized routers. Ex. 1006, Abstract, 230 col. 1 ¶ 5. The router software architecture is based on implementation of specific algorithms in the form of modules called plugins. *Id.* at Abstract, 229 col. 2 ¶ 2. A software component called a Plugin Control Unit (“PCU”) manages plugins that are loaded into the kernel of a router. *Id.* at 231 col. 1 ¶ 2.

Petitioner argues a person of ordinary skill in the art would have modified Snelling's “proxy server software” to utilize the routing software described in Router Plugins. Pet. 22. Regarding the reasons to combine Snelling and Router Plugins, Petitioner argues one of ordinary skill in the art would have been motivated to use the router software architecture of Router Plugins in Snelling's NCU 100 “because doing so amounts to the use of a known technique to improve similar devices in the same way.” *Id.* at 24. Particularly, regarding NCU 100, Petitioner states it “can be ‘adapted for mobility’ with a ‘mobile power supply’ to create a ‘transportable mobile communications system.’” *Id.* at 16 (quoting Ex. 1005, 8:20–28, 54:30–31, 55:9–13). Thus, Petitioner argues, Snelling's LAN ““can be entirely mobile, connected to outside telecommunications networks via air interfaces such as cellular.”” *Id.* (quoting Ex. 1005, Abstract).

Patent Owner argues that neither Snelling nor Router Plugins discloses a hand-held device. Prelim. Resp. 29–31. Patent Owner challenges Petitioner's reliance on the portions of Snelling describing how NCU 100 can

be adapted for mobility as identifying “a system that can be transported and installed in a fixed new location,” rather than a hand-held device. *Id.* at 31. In a related argument, Patent Owner argues that Snelling does not disclose the “first transceiver” of claim 1 because Snelling’s NCU requires a separate adapter and separate cellular-capable device to connect to a cellular network. *Id.* at 31–34.

Snelling’s NCU may be made mobile. Ex. 1005, 54–56. NCU 100 may be attached to a mobile power source and “rapidly installed in any location and provide full functionality in these locations.” *Id.* at 54:32–55:1. When the system is adapted for mobility, NCU 100 may be connected to one or more cellular telephones, via an adapter. *Id.* at 55:24–56:2. Snelling states the “systems of the present invention may be coupled to digital cellular telephone devices (‘PCS devices’)” (*id.* at 41:23–24) and illustrates such an arrangement in Figure 18, reproduced below:

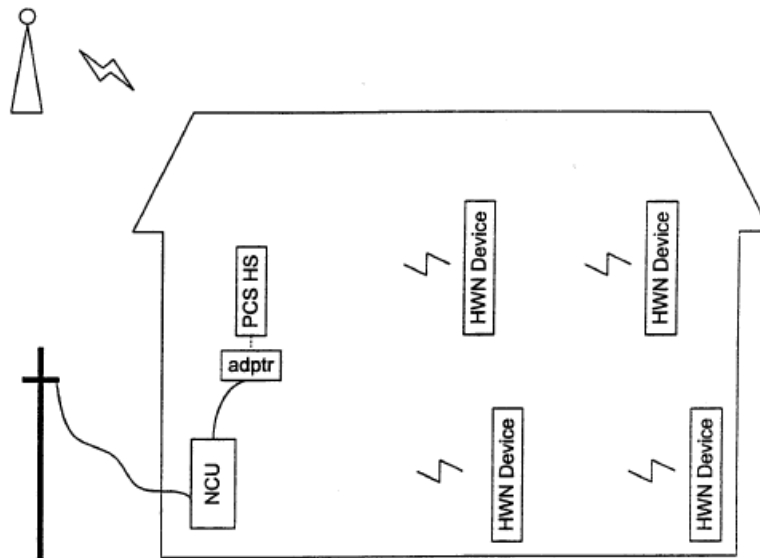


FIG. 18

Figure 18 illustrates use of the PCS device within the communications web of Snelling. *Id.* at 41:29–30. The PCS device “may be coupled to NCU 100 via an adapter 1905 that interfaces with the cellular phone 1800.” *Id.* at 41:30–32. NCU 100 itself, however, is not described as being “hand-held.” Patent Owner highlights a number of factors supporting the allegation that one of ordinary skill in the art would not view NCU 100 as a device that is hand-held or even mobile in operation: its ability to be “rapidly *installed* in any location” (citing Ex. 1001, 54:30–32 (emphasis added)); the examples of situations in which NCU 100 could be used—trade show, construction site, emergency aid organization providing assistance after a disaster (*id.* at 55:4–8); and power sources including “a dedicated battery, an electric power generator, automobile cigarette adapter, solar cells, any electro-mechanical converter” (*id.* at 55:13–16). Prelim. Resp. 31. Although the NCU can harness the functionality of a hand-held device to access a wireless network, we are persuaded by Patent Owner’s evidence that Snelling does not identify NCU 100 as a hand-held device. Petitioner relies on certain sections of Snelling discussing the ability of NCU 100 to be made mobile, in that NCU 100 may be moved from location to location, but does not point to any evidence persuading us that NCU 100 is a hand-held device. Accordingly, Petitioner has not established that NCU 100 itself is a hand-held device including the components and functionality of the hand-held device set forth in the challenged claims.

Taking into account our construction of “hand-held device,” we are unpersuaded that a “hand-held device” is disclosed by the combination of Snelling and Router Plugins. Thus, we are not persuaded that Petitioner would prevail on its contention that claims 1, 4, 5, 8, 10, 12, 14, and 23

would have been obvious over the combination of Snelling and Router Plugins.

2. *Remaining Grounds*

Petitioner's remaining grounds challenge claims that depend from claim 1. All of the remaining grounds are based on a combination of Snelling and Router Plugins, with additional references alleged to disclose additional limitations. We have considered each of these grounds, and determine that none of the additional cited references cure the "hand-held device" limitation missing from the Snelling/Router Plugins combination. Accordingly, we decline to institute *inter partes* review on any of the remaining grounds asserted in the Petition.

3. *Conclusion*

Based on the totality of circumstances before us in this case, we conclude that Petitioner has not presented considerations that sufficiently support its request for *inter partes* review of claims 1, 4, 5, 7–10, 12, 14–16, and 23–24 of the '532 patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that *inter partes* review is denied as to all challenged claims of the '532 patent.

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