

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

SMART MOBILE TECHNOLOGIES LLC,
Patent Owner.

IPR2022-00982
Patent 8,472,937 B1

Before KEVIN TURNER, NATHAN A. ENGELS, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Apple Inc., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) for *inter partes* review of claims 1–3, 5, 6, 10, 13, and 16–18 (“the challenged claims”) of U.S. Patent No. 8,472,937 B1 (Ex. 1001, “the ’937 Patent”). Smart Mobile Technologies LLC (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”) opposing institution. We instituted an *inter partes* review of claims 1–3, 5, 6, 10, 13, and 16–18 of the ’937 Patent on all grounds of unpatentability alleged in the Petition. Paper 11 (“Institution Decision” or “Inst. Dec.”).

After institution of trial, Patent Owner filed a Response (Paper 17, “PO Resp.”), Petitioner filed a Reply (Paper 19, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 24, “PO Sur-reply”). An oral hearing was held on September 12, 2023, and the record contains a transcript of this hearing. Paper 30.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–3, 5, 6, 10, 13, and 16–18 of the ’937 Patent are unpatentable.

II. BACKGROUND

A. *Related Proceedings*

As required by 37 C.F.R. § 42.8(b)(2), Petitioner and Patent Owner identify the judicial or administrative matters that would affect or be affected by a decision in this proceeding. Petitioner and Patent Owner state the ’937

Patent is the subject matter of (1) *Smart Mobile Technologies LLC v. Samsung Electronics Co., Ltd. et al.*, 6-21-cv-00701 (W.D. Tex.) and (2) *Smart Mobile Technologies LLC v. Apple Inc.*, 6-21-cv-00603 (W.D. Tex.) (hereinafter “the Texas litigations”). Pet. 101; Paper 5, 1.

B. Overview of the '937 Patent (Ex. 1001)

The '937 Patent is titled “Dynamically Configurable IP Based Mobile Devices and Networks.” Ex. 1001, code (54). The '937 Patent describes a wireless communication and control system including a universal wireless device (e.g., hand-held computing device, wireless phone, cellular phone) and a server for storing communication and control protocols. *Id.* at 1:46–49, 1:57–58. The wireless device is dynamically configurable to work in multiple different environments (e.g., home, office, public). *Id.* at 2:35–50, Figs. 2A–2C. The wireless device “is able to sense which environment it is primarily operating in while maintaining the ability to switch instantaneously to a different environment.” *Id.* at 3:5–7. The “[s]erver . . . can be used to keep ‘functional instruction sets’ (FIS) and software . . . for use by” the wireless device. *Id.* at 3:57–60. For example, “the [s]erver . . . may serve as the primary repository/exchange to deliver various mode reconfiguration requests” to the wireless device. *Id.* at 3:59–62. In one embodiment, a wireless device “may send a request to the server . . . for configuration as a cell phone because [the wireless device] is not in the home environment.” *Id.* at 3:62–64.

In a specific example, when the wireless device enters an office environment, the wireless device “can serve as a cordless phone in the local environment for interoffice phone calls or local area network . . . access.” *Id.* at 4:43–46. The wireless device “can switch itself for optimal

performance in the local office loop” “by downloading/uploading F[IS] . . . and/or protocols in tandem with [the] [s]erver.” *Id.* at 4:39–42. The wireless device configurations can be dynamically changed in real time as the wireless device changes environments. *Id.* at 6:59–67, 8:56–65. The ’937 Patent discloses that the wireless device may switch modes and that “[t]his switching may be automatic or per specific functional instruction sets . . . and preferences stored on the [s]erver . . . or in the [wireless device] itself.” *Id.* at 4:8–15, 7:50–53.

C. Illustrative Claim

As mentioned above, Petitioner challenges claims 1–3, 5, 6, 10, 13, and 16–18 of the ’937 Patent. Claim 1, the only independent claim, is reproduced below.¹

1. [1.0] A mobile device communication system, comprising:
 - [1.1] a mobile device which supports voice and data communications;
 - [1.2] a server; and
 - [1.3] a memory, wherein to [sic] processor is communicatively coupled with the memory,
 - [1.4] wherein the memory stores functional instructions including instructions for use in providing a plurality of functions to the mobile device, [1.5] at least one of the functional instructions adapted for switching between one or more networks including at least one public network and [1.6] wherein the memory stores prioritization data related to connecting to a plurality of wireless networks and
 - [1.7] wherein the memory further stores a plurality of communication protocols, that facilitate communication between the server and the mobile device, and [1.8] wherein the server

¹ For ease of reference, we use Petitioner’s claim numbering scheme. *See* Pet. 31–51.

provides a plurality of functions for control of the mobile device and [1.9] enables conversion of the mobile device from as [sic] first function to a second function to provide a plurality of functions at the mobile device.

Ex. 1001, 9:20–39.

D. Asserted Grounds

Petitioner presents the following challenges as summarized in the chart below. Pet. 16.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 16–18	103(a) ²	Rautiola ³ , Regnier ⁴ , Sainton ⁵
5, 6	103(a)	Rautiola, Regnier, Sainton, Wilson ⁶
10	103(a)	Rautiola, Regnier, Sainton, Salazar ⁷
13	103(a)	Rautiola, Regnier, Sainton, Crites ⁸
1, 2, 5, 6, 10, 17	103(a)	Grube ⁹ , Gillig ¹⁰

² The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. §§ 102 and 103 that became effective after the effective filing date of the challenged claims. *See* Ex. 1001, codes (22), (63). Therefore, we apply the pre-AIA versions of 35 U.S.C. §§ 102 and 103(a).

³ U.S. Patent No. 5,949,775, filed August 30, 1996 and issued September 7, 1999, to Rautiola et al. (Ex. 1005, “Rautiola”).

⁴ U.S. Patent No. 5,689,708, filed March 31, 1995 and issued November 18, 1997, to Regnier et al. (Ex. 1006, “Regnier”).

⁵ U.S. Patent No. 5,854,985, filed September 4, 1996 and issued December 29, 1998, to Sainton et al. (Ex. 1007, “Sainton”).

⁶ U.S. Patent No. 5,400,246, filed August 5, 1992 and issued March 21, 1995, to Wilson et al. (Ex. 1008, “Wilson”).

⁷ U.S. Patent No. 5,802,467, filed September 28, 1995 and issued September 1, 1998, to Salazar et al. (Ex. 1009, “Salazar”).

⁸ U.S. Patent No. 6,097,380, filed June 24, 1996 and issued August 1, 2000, to Crites et al. (Ex. 1010, “Crites”).

⁹ U.S. Patent No. 5,201,067, filed April 30, 1991 and issued April 6, 1993, to Grube et al. (Ex. 1011, “Grube”).

¹⁰ U.S. Patent No. 4,989,230, filed September 23, 1988 and issued January 29, 1991, to Gillig et al. (Ex. 1012, “Gillig”).

Petitioner submits two declarations from Michael D. Kotzin, Ph.D. Exs. 1003, 1066. Patent Owner submits a declaration from Todor Cooklev, Ph.D. Ex. 2031.

III. ANALYSIS

A. *Legal Standards*

Petitioner bears the burden of persuasion to prove unpatentability, by a preponderance of the evidence, of the claims challenged in the Petition. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

As mentioned above, Petitioner's challenge is based on obviousness. Pet. 16. A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in the record, objective evidence of nonobviousness.¹¹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

¹¹ Patent Owner has not directed us to any objective evidence of non-obviousness. See PO Resp.

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.*

According to Petitioner,

[a] Person of Ordinary Skill in The Art (“POSITA”) in December of 1996 would have a bachelor’s degree in electrical engineering, or equivalent training, and approximately two years of experience working in the field of networking and wireless devices. Lack of work experience can be remedied by additional education, and vice versa.

Pet. 11 (citing Ex.1003 ¶¶ 20–22.).

Patent Owner does not contest Petitioner’s proffered level of skill discussed by Dr. Kotzin. *See* PO Resp. As such, we determine Petitioner’s definition is supported by the evidence of record, including the testimony of Dr. Kotzin, and we adopt Petitioner’s definition of the level of ordinary skill.

C. Claim Construction

In an *inter partes* review, the claims are construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2021). This claim construction standard includes construing the claim in accordance

with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art. *Id.*; *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005). In construing claims in accordance with their ordinary and customary meaning, we consider intrinsic evidence such as the specification and the prosecution history of the patent. *Phillips*, 415 F.3d at 1315–17. Extrinsic evidence, including expert and inventor testimony, dictionaries, and treatises, may also be used but is less significant than the intrinsic record. *Id.* at 1315. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* Any special definitions for claim terms must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Additionally, only terms that are in controversy need to be construed, and these need to be construed only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

As part of its Petition, Petitioner submitted that “for the purposes of this proceeding, the terms of the challenged claims should be given their plain and ordinary meaning, and no terms require specific construction.” Pet. 11–12. Patent Owner represented that it “does not propose that the Board expressly construe any claim terms.” Prelim. Resp. 2. In the Institution Decision, the Board preliminarily determined that, contrary to Patent Owner’s arguments, we were not persuaded that Petitioner needed to provide an *express* construction for any claim term in order to comply with the requirements of 37 C.F.R. § 42.104(b)(3), and we were not persuaded that Petitioner’s position that a claim term is indefinite (Ex. 2015, 15–16), in

a parallel district court proceeding, was fatal to its Petition. Inst. Dec. 9; *see id.* at 8–10 (discussion of the case law cited by Patent Owner and its arguments).

Claim 2 recites “wherein the mobile device is adapted to switch dynamically between local networks and public carrier networks.” Ex. 1001, 9:40–42. A central issue in dispute is what is the meaning of “dynamically” as used in this claim. In related proceeding IPR2022-00808,¹² a panel of the Board construed the claim language “dynamic conversion” to mean “when and as needed.” IPR2022-00808, Paper 24 at 9–12 (PTAB Sept. 29, 2022). Neither party argues that there is a difference between “dynamic conversion” between two functions and “adapted to switch dynamically” between two networks.

Patent Owner asserts the term “dynamically” should be construed as “when and as needed, responsive to variable conditions and without the need for user intervention.” PO Resp. 10; *see id.* at 9–20. Patent Owner states the Board’s construction, as provided in related proceeding IPR2022-00808, “when and as needed” should stand (*id.* at 11) but adds that the ’937 Patent also teaches that “a change is ‘dynamic’ when it occurs responsive to variable environmental or other conditions” (*id.* at 12), and that “a switch occurs ‘dynamically’ without the need for user intervention to execute the change” (*id.* at 14). Petitioner asserts that the Board’s construction is the plain and ordinary meaning of dynamic conversion. Pet. Reply 8 (citing Ex. 1001, 4:54–56, 4:61–64; Ex. 1066 ¶ 9).

¹² Patent Owner identifies the related proceeding as involving the same parties and a patent, US Patent No. 8,442,501, in the same family as the ’937 Patent. PO Resp. 10 n.1.

Recently, the district court in the Texas litigations determined that the terms “dynamic” and “dynamically” are not indefinite, and construed them to mean “in real-time.” Ex. 1099, 13.

Because Petitioner shows that the combined teachings of Rautiola, Regnier, and Sainton disclose “dynamic conversion” from a first function to a second function, and “switch[ing] dynamically” between local networks and public carrier networks under Patent Owner’s proposed construction, claim construction of “dynamic” and “dynamically” is not needed to resolve the present controversy. *See Nidec*, 868 F.3d at 1017.

D. Ground 1: Asserted Obviousness of Claims 1–3 and 16–18 Over Rautiola, Regnier, and Sainton

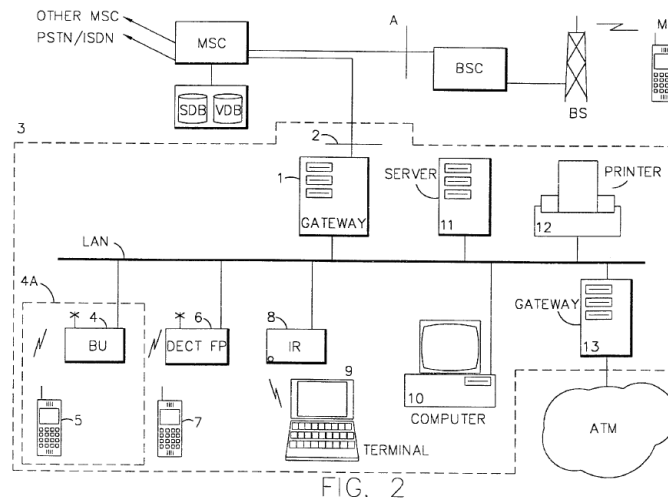
Petitioner asserts that claims 1–3 and 16–18 are unpatentable under 35 U.S.C. § 103 as being obvious over Rautiola, Regnier, and Sainton. Pet. 16–66. Patent Owner opposes Petitioner’s challenge. PO Resp. 20–35; PO Sur-reply 10–17, 20–21. For the reasons below, we determine Petitioner has shown by a preponderance of the evidence that claims 1–3 and 16–18 are unpatentable.

Below, we present brief overviews of Rautiola, Regnier, and Sainton and then we address Petitioner’s and Patent Owner’s contentions.

1. Overview of Rautiola

Rautiola is a U.S. patent titled “Office Communication System.” Ex. 1005, code (54). Rautiola describes an integrated office communication system employing a local area network (LAN) for intraoffice communications and a public cellular radio network for outside communications. *Id.* at Abstract.

Figure 2 of Rautiola, reproduced below, shows an integrated office communication system employing a local area network (LAN) for intraoffice communications. Ex. 1005, Abstract, 4:63–65.



In Figure 2, the office communication systems employing the LAN for intraoffice communications does not need other internal networks because computers 10 are connected to the LAN and telephones 5, 7 are either mobile or cordless phones for which there are low-power room-specific base stations 4, 6 in the LAN. *Id.* at Abstract. Connections to the outside world are made via a gateway computer 1 and public cellular radio network. *Id.* Inside the office, the coverage areas of small base stations 4, 6, 8 are nano cells 4a of one or a few rooms. *Id.* A home or small office user has a similar small base station 14 which is connected to the LAN via a public communication network 15 and gateway equipment 13. *Id.*

Location area 3 above represents an area for an office wherein various devices located within the office (mobile devices 5, computers 10, printers 12) communicate with each other via the LAN. *Id.* at 5:51–55. Inside the office environment, the LAN can connect to distinct types of devices like mobile stations 5, cordless telephones 7, terminals 9 that use infrared

connections (“IR terminals”), and users’ computers 10. *Id.* at 6:20:21–38, 6:59–65, 7:9–23. Figure 2 shows each of the mobile devices connects with the LAN via different types of base stations: mobile stations 5 connect to low power base units 4; cordless telephones 7 connect to their own base units 6; and IR terminals 9 connect to IR base units 8. *Id.* at 6:30–44, 6:59–65, 7:14–18. Rautiola explains that terminals interact with “one or more servers which take care of certain functions related to the distribution of resources, such as the database services and voice mail and e-mail services.” *Id.* at 4:30–34.

2. *Overview of Regnier*

Regnier is a U.S. patent titled “Client/Server Computer Systems Having Control of Client-Based Application Programs, and Application-Program Control Means Therefor.” Ex. 1006, code (54). Regnier describes a resource manager in a client/server computer network which controls the availability of system resources. *Id.* at Abstract. A system administrator generates a set of profiles which specify which system resources each user may employ for each of multiple application programs. *Id.* Thereafter, individual application programs may internally configure their possible choices of such system resources according to these profiles on a dynamic basis. *Id.*

Regnier explains that “[m]ost present client/server networks . . . application programs are split into two portions” where a “server portion executes within the server computer, while a separate client portion executes within each client computer.” Ex. 1006, 1:35–40. Regnier’s application resource manager operates using a “control program located in the server.” *Id.* at 3:41–42, 5:16 (identifying server control module 240).

Regnier's process begins when a user signs on at one of the client terminals 130 and the server authenticates the user's identity. Ex. 1006, 6:35–39. The user may then choose to initiate an application. *Id.* at 6:49–53. After the user selects an application, the system consults the user's profile to determine whether access is permitted. *Id.* If no access is permitted, the system blocks the application. *Id.* at 7:8–10. If the user is permitted partial access, a user interface for the chosen application can be dynamically modified so the interface only displays options accessible to the user. *Id.* at 7:16–19, 7:66–8:3.

3. *Whether Regnier is analogous art*

Patent Owner argues that Regnier is not analogous art and, thus, cannot be considered in Petitioner's obviousness challenges in Grounds 1–4. PO Resp. 20–33. According to Patent Owner, Petitioner does not establish that (1) Regnier is in the same field of endeavor as the '937 Patent (*id.* at 21–29) or (2) Regnier is “reasonably pertinent to the problem identified in the '937 Patent” (*id.* at 30; *see id.* at 29–33). For the reasons below, we do not agree with Patent Owner.

To qualify as prior art for an obviousness analysis, a reference must qualify as “analogous art,” i.e., it must satisfy one of the following conditions: (1) the reference must be from the same field of the inventor's endeavor; or (2) the reference must be reasonably pertinent to the particular problem with which the inventor is involved. *K-TEC, Inc. v. Vita-Mix Corp.*, 696 F.3d 1364, 1375 (Fed. Cir. 2012).

Here, as to the first test, Patent Owner asserts that the '937 Patent's “field of endeavor is wireless communication between wireless mobile

devices and networks.” PO Resp. 25 (citing Ex. 2031 ¶61); PO Sur-reply 12–14. Patent Owner contends that

Regnier is in a different field of endeavor [because] Regnier’s abstract does not mention—in word or concept—“wireless networking.” Rather, it describes its field of endeavor as, “[a] resource manager in a client/server computer network controls the availability of system resources. A system administrator generates a set of profiles which specify which system resources each user may employ for each of multiple application programs.” Ex. 1006, Abstract. The abstract is consistent with Regnier’s self-described “Field of the Invention” as relating “to electronic data processing, and more particularly concerns the control of system resources in computer systems arranged in a client/server configuration.” *Id.*, 1:7–11; *see also id.*, 1:1–6 (Title); 2:3–20, 30–5 (Background of Invention). Regnier’s self-described field of endeavor does not refer to wireless devices, wireless communication systems, or wireless networks.

PO Resp. 26–27 (second alteration in original).

The full record shows, as Petitioner argues, that “the Regnier reference is analogous art to the ’937 Patent because Regnier shares the ’937 Patent’s field of endeavor: wireless networking.” Pet. Reply 16 (citing Ex. 1001, 1:47–48 (“It is an object of the present invention to provide a wireless communication and control system.”)). Regnier states that it is directed to a “client/server computer network” for “wireless devices,” that is, wireless networking. Ex. 1006, Abstract, 4:28.

The full record does not support Patent Owner’s arguments that the ’937 Patent is directed to multiple networks whereas Regnier is directed to a single network. PO Resp. 28; PO Sur-reply 13. Regnier describes “a network 100 of computers 110–140 configured in a client/server configuration” (Ex. 1006, 4:3–4) and explains that “[c]ommunications 150”

between the client/server computer “may assume any of a number of conventional forms, such as cables 151–152, switched telephone lines, *wireless devices*, and many others” (*id.* at 4:26–28). Petitioner shows that a person of ordinary skill in the art would have understood that “Regnier’s client and server computers could be connected by one or multiple networks, such as public switched telephone line network (Ex. 1006, 4:27–28) connected to a cable LAN (Ex. 1006, 4:28, 4:31), which was a conventional arrangement as demonstrated by Rautiola for example (Ex. 1005, Figs. 1–3).” Pet. Reply 17–18 (citing Ex. 1066 ¶ 16).

As to the second test, Patent Owner argues that the ’937 Patent addresses “the problem of configuring a single wireless mobile device to communicate with and adapt to multiple networks to avoid a ‘proliferation of mobile devices,’” but Regnier allegedly “addresses a different kind of problem.” PO Resp. 31 (citing Ex. 2031 ¶¶ 68, 69; Ex. 1001, 1:19–42; Ex. 1006, 2:50–3:5).

The full record supports Petitioner’s argument that a person of ordinary skill in the art would have known that Regnier’s smaller personal computers would include a laptop (Ex. 1066 ¶ 18 (citing Ex. 1008, 8:41)), that a laptop is a wireless device that can connect to multiple networks (Ex. 1005, Figs. 1–3) and also include cellular telephony (Ex. 1007, 15:24–26) and remote control functions (Ex. 1008, 8:41, 31:13–16), and, thus, would avoid a proliferation of mobile devices. We agree with Petitioner that Regnier explicitly states that a client/server network can provide a single client device with more functionality and capabilities, than would otherwise be possible by a single client device, by distributing functions onto “one or

more complete computer systems functioning as multiple servers” accessible by the client device. *See* Ex. 1006, 4:24–25; Ex. 1066 ¶ 18.

Finally, Patent Owner argues that Petitioner’s analogous art arguments and evidence are untimely because they were presented in Petitioner’s Reply rather than in the Petition. PO Sur-reply 10–12. We do not agree. First, Petitioner stated that Regnier is analogous art because it pertains “to the same field of endeavor, namely wireless networking.” Pet. 24. Second, a “petitioner is not required to anticipate and raise analogous art arguments in its petition; instead a petitioner can use its reply to ‘respond to arguments raised in the . . . patent owner response.’” *Sanofi-Aventis Deutschland GmbH v. Mylan Pharmaceuticals Inc.*, 66 F.4th 1373, 1379 (Fed. Cir. 2023).

We determine that Petitioner has proven, by a preponderance of the evidence, that Regnier is analogous art.

4. *Overview of Sainton*

Sainton is a U.S. patent titled “Adaptive Omni-Modal Radio Apparatus and Methods.” Ex. 1007, code (54). Sainton generally relates to wireless communication devices and systems for different radio frequencies, transmission protocols and radio infrastructures. *Id.* at 1:8–12. Figure 7 is reproduced below.

FIG. 7

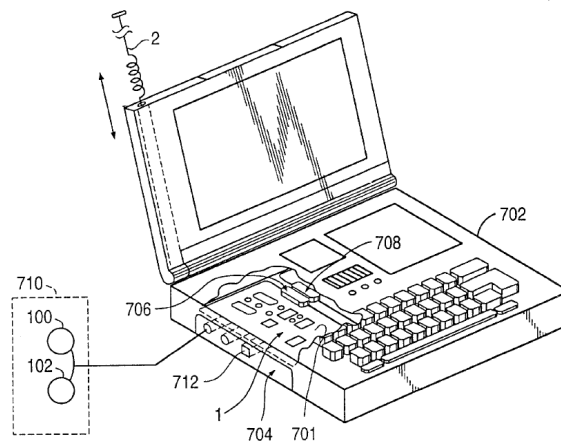


Figure 7 is a block schematic diagram of personal computer 702 incorporating omni-modal radio communications circuit 701. *Id.* at 4:23–25. The laptop has a Personal Computer Memory Card International Association (PCMCIA) card (i.e., an omni-modal radio communication card 701). *Id.* at 15:23–26, 15:43–46. The microprocessor 110 in the PCMCIA card allows the laptop to make either a landline transmission via external jack 712 or a cellular radio transmission via antennae 2. *Id.*

Sainton discloses that its system works on cellular telephone networks and wireless LAN systems. Ex. 1007, 5:13–29. It teaches that its system may switch between these services either manually by the user or *automatically based on preprogrammed criteria* without manual intervention by the user:

[C]ircuit 1 will be capable of utilizing any one of the wireless data services within a given geographic area. The selection of the service to be used can be made manually by the user, or *can be selected automatically*. Referring to FIG. 9, circuit 1 may have a *preprogrammed routine for selecting information carriers based on varying criteria*. As shown in FIG. 9, the criteria for selecting a carrier may be varied by the user. Possible criteria include the cost of sending a data message; quality of

transmission link (signal strength, interference actual or potential); available bandwidth on a carrier for data transmission (or transmission speed supported); potential for being bumped off the system or having transmissions delayed (that is, is the service provider at nearly full capacity); security of transmission; or other special criteria which the user or the device may establish based on the user's individual priorities.

Id. at 16:28–43 (emphases added).

5. *Claim 1*

Petitioner, relying on Dr. Kotzin’s testimony, provides a limitation-by-limitation comparison of Rautiola, Regnier, and Sainton to claim 1. Pet. 31–57. Patent Owner has acknowledged that its only arguments raised against independent claim 1, with respect to this ground, are whether Rautiola, Regnier, and Sainton are analogous art. *See* Paper 30, 47–48; PO Resp.; PO Sur-reply. Having determined that references represent analogous art, there are no additional arguments from Patent Owner that need to be considered with respect to independent claim 1.

a) [1.0]: “*A mobile device communication system, comprising*”

Petitioner contends that Rautiola “discloses ‘*a mobile device communication system*’ because it teaches ‘a local area network [LAN] in the office and a cellular radio network between office units.’” Pet. 31 (citing Ex. 1005, Fig. 2, 3:36–38) (alteration in original). Petitioner further contends that “[o]utside the LAN, ‘mobile stations’ use the wireless ‘GSM . . . cellular radio system’” and “[w]ithin the LAN, a wireless ‘connection to a terminal is made via an infrared link.’” *Id.* (citing Ex. 1005, 4:26–27, 5:20–23; Ex. 1003 ¶¶ 82–85) (emphasis omitted) (second alteration in original).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola teaches the preamble of claim 1.¹³

b) [1.1]: “a mobile device which supports voice and data communications”

Petitioner contends that Rautiola’s Figure 2 “illustrates terminal 9 depicted as a portable laptop computer, which is a mobile device because the laptop is portable and uses a wireless ‘infrared connection’ to connect to the ‘local area network LAN.’” Pet. 32–33 (citing Ex. 1005, Fig. 2, 7:16–18). According to Petitioner, “as a terminal physically leaves the office, it connects to ‘a public cellular radio network.’” *Id.* at 33 (citing Ex. 1005, 13:30–39).

Petitioner contends that “the laptop (the mobile device) supports ‘data communications’ because the LAN provides ‘database services and voice mail and e-mail services’ to the mobile devices.” *Id.* at 33 (citing Ex. 1005, 4:33–34). Petitioner also contends that “Rautiola further teaches that telephone services (‘voice [] communications’) are provided to the mobile devices: ‘the users may also manage the telephone services via their computer terminals connected to the local area network.’” *Id.* at 33–34 (citing Ex. 1005, 1:37–39; Ex. 1003 ¶¶ 86–90) (emphasis omitted) (alteration in original). Petitioner also cites Sainton for this limitation. *Id.* at 34–35.

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Sainton teach or suggest claim limitation 1.1.

¹³ The parties do not address whether the preamble is limiting. Because Petitioner shows that the preamble is satisfied by the prior art, there is no need to determine whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017.

c) [1.2]: “a server”

Petitioner contends that “Rautiola teaches ‘one or more servers which take care of certain functions related to the distribution of resources, such as the database services and voice mail and e-mail services.’” Pet. 36 (citing Ex. 1005, 4:30–34, Fig. 2; Ex. 1003 ¶¶ 97–99) (emphasis omitted).

Petitioner also cites Regnier for this teaching. *Id.* at 37–40.

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Regnier teach or suggest claim limitation 1.2.

d) [1.3]: “a memory, wherein a processor is communicatively coupled with the memory”

Petitioner contends that “Sainton teaches that a laptop computer includes a memory coupled to a processor, describing an ‘omni-modal circuit 1’ that can be a PCMCIA card and includes ‘microprocessor 110, memory 112.’” Pet. 39 (citing Ex. 1007, 8:19–25, 15:13–26) (emphasis omitted); *see id.* (citing Ex. 1005, Fig. 2, 10:49–53; Ex. 1007, Fig. 7, 15:40–46; Ex. 1003 ¶¶ 105–110).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Sainton teach or suggest claim limitation 1.3.

e) [1.4]: “wherein the memory stores functional instructions including instructions for use in providing a plurality of functions to the mobile device”

Petitioner contends that “Rautiola discloses that services or ‘functions,’ such as ‘the database services and voice mail and e-mail services’ are distributed to the laptop (and other client devices).” Pet. 42 (citing Ex. 1005, 4:30–34) (emphasis omitted). “Rautiola further explains that telephone services are also provided to the client: ‘the users may also

manage the telephone services via their computer terminals connected to the local area network.” *Id.* (citing Ex. 1005, 1:37–39)(emphasis omitted).

Petitioner contends that “[t]o the extent Rautiola does not explicitly teach that the laptop stores ‘functional instructions including instructions for use in providing a plurality of functions,’ Regnier teaches these well-known implementation details.” *Id.* (citing Ex. 1003 ¶¶ 113–116) (emphasis omitted). According to Petitioner

Regnier teaches a technique for providing a service to a client device in a client/server network, such as the system of Rautiola. Specifically, Regnier discloses that the service (“*function*”) comprises a server portion as well as a client portion that is stored on and executed by the client device: “a server portion executes within the server computer, while **a separate client portion executes within each client computer** from which a user can invoke the application.

Additionally, Regnier teaches that the “**client portion 291**” of the application “**may be downloaded from server 110 to terminal 130** upon a request from the user . . . **or it may reside permanently within terminal 130.**” Here, a POSITA would have understood that such instructions downloaded to or residing permanently within a computer terminal would be stored in the memory discussed above at [1.3].

Id. at 42–43 (citing Ex. 1006, 1:35–40, 5:52–54; Ex. 1003 ¶¶ 117–122).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola, Regnier, and Sinton teach or suggest claim limitation 1.4.

f) [1.5]: “*at least one of the functional instructions adapted for switching between one or more networks including at least one public network and*”

Petitioner contends that Sinton “teaches that one example of ‘functional instructions’ includes instructions for switching between

networks,” specifically, “that a laptop with PCMCIA card ‘may have a preprogrammed routine for selecting information carriers based on varying criteria.’” Pet. 44 (citing Ex. 1007, 16:28–34) (emphasis omitted). “Sainton also teaches that the laptop with PCMCIA card can use various wireless networks, including the types of cellular radio networks and wireless LANs in Rautiola’s system, such as ‘the U.S. cellular telephone network . . . the European standard . . . and wireless LAN systems.’” *Id.* (citing Ex. 1007, 5:14–29; Ex. 1003 ¶¶ 123–132) (emphases omitted) (alterations in original).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola, Regnier, and Sainton teach or suggest claim limitation 1.5.

g) [1.6]: “*wherein the memory stores prioritization data related to connecting to a plurality of wireless networks and*”

Petitioner contends that Sainton “teaches that the laptop stores various ‘criteria’ or ‘priorities’ (*‘prioritization data’*) for selecting one wireless network over another.” Pet. 45. Sainton discloses that

[p]ossible criteria include the cost of sending a data message; quality of transmission link []; available bandwidth on a carrier for data transmission (or transmission speed supported); ... or other special criteria which the user or the device may establish based on the user’s individual priorities.

Ex. 1007, 16:35–43 (emphases omitted) (second and third alteration in original). Petitioner further contends that “Sainton explains that the laptop uses stored data to prioritize networks based on a ‘competitive selection process, either through pre-programming by the user or selling organization or by transmission of the information.’” Pet. 45 (citing Ex. 1007, 16:35–43, 16:57–59; Ex. 1003 ¶¶ 133–139) (emphasis omitted).

We determine that Petitioner has proven, by a preponderance of the evidence, that Sainton teaches or suggests claim limitation 1.6.

- h) [1.7]: “*wherein the memory further stores a plurality of communication protocols, that facilitate communication between the server and the mobile device, and*”

Petitioner contends that “it would have been obvious to a POSITA that, for Rautiola’s laptop to communicate with an office LAN server using the infrared link or using a cellular protocol outside the office LAN via PCMCIA card, as taught by Sainton, the laptop includes memory that ‘*stores a plurality of communication protocols.*’” Pet. 47–48. Petitioner further contends that “[t]o the extent Rautiola does not explicitly teach a plurality of communications protocols stored in the laptop’s memory, a POSITA would have understood this to be obvious in view of Sainton” because “Sainton teaches storing ‘a library of command, control and data transmission protocols appropriate for each supported system’ on the laptop.” *Id.* (citing Ex. 1007, 5:52–63; Ex. 1003 ¶¶ 143–146).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Sainton teach or suggest claim limitation 1.7.

- i) [1.8]: “*wherein the server provides a plurality of functions for control of the mobile device and*”

Petitioner contends that “Rautiola teaches ‘one or more servers which take care of certain functions related to the distribution of resources, such as the database services and voice mail and e-mail services’” and that “a server can distribute various voice, e-mail, and data services to client computers, such as laptop 9.” Pet. 49 (citing Ex. 1005, Fig. 2, 4:31–34, 1:31–36) (emphasis omitted). Petitioner further contends that

Regnier teaches a technique for how services provided by a server are obtained by a client device. As discussed above, Regnier teaches that for “application programs in a client/server network, a portion 211 of the application is physically located and executes in the server 110” and “[a]nother portion 291 of the same application executes in the client terminal 130.” The client portion of the application “may be downloaded from server 110 to terminal 130 upon a request from the user.”

Id. at 50–51 (citing Ex. 1006, 5:47–52) (emphasis omitted) (alteration in original).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Regnier teach or suggest claim limitation 1.8.

j) [1.9]: “*enables conversion of the mobile device from as first function to a second function to provide a plurality of functions at the mobile device*”

Petitioner contends that “Regnier’s technique of a server that (i) downloads, to a client device, client-side portions of application services and (ii) dynamically controls whether the client device can use and/or access the service, discloses a server that enables converting a client between a plurality of functions (e.g., office telephone, database, e-mail).” Pet. 57 (citing Ex. 1003 ¶¶ 159–162).

Petitioner explains that “Regnier explains that the server maintains a list of ‘various application programs which are subject to resource manager 251.’” *Id.* at 52 (citing Ex. 1006, 8:33–34, Abstract) (emphasis omitted). Petitioner further contends that “[t]he server also maintains user profiles 252-253 . . . that list whether or not ‘that user or group cannot execute the application program.’” *Id.* (citing Ex. 1006, 8:36–41) (emphasis omitted). According to Petitioner, “[t]herefore, ‘individual application programs may internally configure their possible choices of such system resources

according to the appropriate profile on a dynamic basis.”” *Id.* at 54 (citing Ex. 1006, Abstract) (emphasis omitted).

Petitioner contends that Regnier’s

Fig. 4 illustrates that client user profiles are updated in the resource manager and used to determine that a plurality of applications and resources are accessible for a given client. For instance, in Fig. 4, “a value 404 showing a status of that resource for that particular user when executing that particular application, and a change status 405 for the value 404.”

* * *

In reference to Fig. 3, Regnier further explains that each time a user selects an application (block 307), the server’s resource manager determines, based on the user profiles (block 305), whether the user’s device is allowed to be reconfigured to use the desired functionality (block 311).

Id. at 54–55 (citing Ex. 1006, 6:63–7:9, 8:8–10, 8:17–20, Figs. 3, 4; Ex. 1003 ¶¶ 155–158).

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola and Regnier teach or suggest claim limitation 1.9.

k) Rationale for Combining Rautiola, Regnier, and Sainton

Petitioner contends that, “[t]o achieve Rautiola’s goal of wireless terminals moving between an office LAN and a public cellular network, a POSITA would have recognized that a mobile terminal, such as the laptop, needed the capability to connect to a public cellular network.” Pet. 25 (citing Ex. 1005, Figs. 2, 3, 13:32–35; Ex. 1007, 16:28–34; Ex. 1003 ¶¶ 52–54). Petitioner contends that “Sainton reflects it was well known to a POSITA that cellular network capability could be added to a laptop using a PCMCIA card.” *Id.* Petitioner further contends that “[t]he combination where Rautiola’s laptop uses IR in the wireless LAN and public cellular

outside of the LAN also would have been predictable because it was well known to POSITAs for a laptop to include both radio and IR capabilities.” *Id.* at 27 (citing Ex. 1003 ¶¶ 59–60 (citing Exs. 1013–1015)).

According to Petitioner, “it was well known that a laptop would use an IR wireless LAN connection when available because it provided much higher data rates than GSM.” Pet. 25 (citing Ex. 1003 ¶¶ 61–65 (citing Exs. 1016–1024)). Petitioner further contends that it would have been obvious to “apply Sainton’s teachings to Rautiola’s system because the combination merely amounts to applying a known wireless connectivity solution to a wireless device (laptop) ready for improvement.” *Id.* at 27–28. According to Petitioner, “[s]uch a combination would produce the predictable and beneficial result of Rautiola’s laptop using a preprogrammed routine to determine to switch from an infrared connection in the office LAN to a public cellular connection—via PCMCIA card—outside the office LAN.” *Id.* at 28 (citing Ex. 1003 ¶¶ 52–67).

With respect to modifying Rautiola with Regnier, Petitioner contends that

Rautiola explains that, to deliver services to the mobile terminals, “the local area network has advantageously one or more servers which take care of certain functions related to the distribution of resources, such as the database services and voice mail and email services.” A POSITA would have been motivated to look to a technique, such as taught by Regnier, with implementation details regarding how database, voice mail, and e-mail services are distributed to mobile terminals.

Regnier teaches one such technique for how a server in a client-server (c/s) network can provide multiple services to clients. Regnier describes “an ‘application server’ model in which some or all application programs are split into two portions. A server portion executes within the server computer,

while a separate client portion executes within each client computer.” This “client portion 291 may be downloaded from server 110 to terminal 130.” Regnier further describes a “resource manager in a client/server computer network” that “controls the availability of system resources . . . for each of multiple application programs.”

Since Rautiola’s server distributes services to a wireless device, it would have been obvious to a POSITA to use Regnier’s technique of an “application server model” with Rautiola’s server that distributes services to mobile terminals. Rautiola’s server would gain the advantages enumerated by Regnier, such as “enhanced and more precise control over the use of system resources.” Rautiola’s server would be improved because “resource restrictions can be imposed in a way which is transparent to the user, rather than merely by returning an ugly error message if the user attempts to engage the forbidden resource.”

Pet. 28–29 (citing Ex. 1003 ¶¶ 69–74; Ex. 1005, 4:30–34; Ex. 1006, 1:35–39, 3:8–9, 3:18–21, 5:52–53) (alteration in original).

Patent Owner does not separately address the motivation to combine Rautiola, Regnier, and Sainton. *See* PO Resp.

We determine that Petitioner has proven, by a preponderance of the evidence, that one of ordinary skill in the art would have been motivated to combine the teachings of Rautiola, Regnier, and Sainton, as provided in the Petition.

l) Conclusion

After considering Petitioner’s and Patent Owner’s evidence and arguments, we determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola, Regnier, and Sainton render obvious independent claim 1.

6. *Claim 2*

Claim 2 recites that “the mobile device is adapted to switch dynamically between local networks and public carrier networks.” Because this requires dynamic conversion/switching between two functions (e.g., local networks and public carrier networks), we address the parties’ contentions as to dynamic/dynamically.

Petitioner contends that the combination of Rautiola, Regnier, and Sinton teach the recited dynamic conversion/switching in two ways. First, Petitioner contends that Rautiola and Regnier teach the conversion between two functions. Pet. 51–57. Second, Petitioner contends that Rautiola and Sinton teach the claimed dynamic conversion/switching between two functions. Pet. 58–60 (arguing Sinton teaches switching dynamically between local networks and public carrier networks); Pet. Reply 22–26.

For the reasons below, we determine that (1) Petitioner’s combination of Rautiola and Regnier renders obvious claim 2 under Petitioner’s proposed construction of dynamic—when and as needed and in real time, and (2) Petitioner’s combination of Rautiola and Sinton render obvious claim 2 under Petitioner’s proposed construction and Patent Owner’s proposed construction of dynamic—when and as needed, responsive to variable conditions and without the need for user intervention.

a) *Petitioner’s Proposed Combination of Rautiola and Regnier*

Under Petitioner’s proposed combination of Rautiola and Regnier, Petitioner explains that Rautiola and Regnier teach that a server delivers various functions to the wireless device. Pet. 28–31. Petitioner explains that

Rautiola’s teaching of a server providing database, voice, and e-mail services to a user terminal, in view [of] Regnier’s technique that a server provides client portions of applications for

download by the client and *dynamically controls* whether the client device can use and/or access the service when a user attempts to convert the client device's functionality, renders obvious [claim limitation 1.9].

Id. at 57 (emphasis added).

We agree with Petitioner that the combined teachings of Rautiola and Regnier disclose a server which dynamically converts between two functions under Petitioner's proposed construction of dynamic. Rautiola, for example, teaches that an office server distributes "database services and voice mail and e-mail services" to a user's wireless device, such as a laptop. Ex. 1005, 4:30–34, Fig. 2. Regnier teaches a technique where a server provides a "client portion" of an application that is "downloaded from server 110 to terminal 130 upon a request from the user." Ex. 1006, 5:52–54. Regnier controls whether a client device can use and/or access various services "on a dynamic basis." Ex. 1006, Abstract, 10:32–39, 49–51.

For example, in Regnier, "individual application programs may internally configure their possible choices," such that the programs available to a user change on "a dynamic basis" (i.e., programs available change when needed and in real time). Ex. 1006, Abstract. Regnier also can "allow menu items to change on a dynamic basis, whenever a system administrator modifies a profile, or by some other factor, such as time of day"—such that the services available to a device can be changed including whenever (i.e., in real time) an administrator (i.e., as needed) changes a user profile. *Id.* at 10:32–39, 10:49–51. Regnier further "allow[s] . . . users to choose dynamically among said shared system resources"—i.e., users can choose to convert the device's functionality when needed and in real time. *Id.* at 10:49–51; Ex. 1066 ¶¶ 23–24.

Therefore, based on these disclosures, we credit Dr. Kotzin's testimony that Rautiola in view of Regnier discloses a server that enables dynamically converting a client between a plurality of functions (e.g., office telephone, database, e-mail) when and as needed and in real time (i.e., Petitioner's proposed construction of "dynamic"). Ex. 1066 ¶ 25; *see also* Ex. 1003 ¶¶ 156–161.

In response to Petitioner's contentions, Patent Owner argues, in part, that Petitioner fails to articulate how the alleged switch in Rautiola is dynamic. PO Resp. 34 (citing Pet. 58–60). We do not agree with Patent Owner because, when the wireless device converts between two functions in response to a user command, the conversion necessarily is responsive to variable/changing conditions by the user. In addition, a user command acts as an external process which causes the conversion to occur at the same or actual time that the user requests the conversion. *See, e.g.*, Ex. 1006, Abstract (stating Regnier's "[i]ndividual application programs may internally configure their possible choices," such that the programs available to a user change on "a dynamic basis"), 10:32–39 (stating Regnier can "allow menu items to change on a dynamic basis, whenever a system administrator modifies a profile, or by some other factor, such as time of day"), 10:49–51 (stating Regnier "allow[s] . . . users to choose dynamically among said shared system resources"); Ex. 1066 ¶¶ 23–24.

Thus, Petitioner's Rautiola-Regnier combination shows a conversion when and as needed and in real time, under Petitioner's proposed construction of dynamic. As mentioned above, we credit Dr. Kotzin's testimony that the Rautiola-Regnier combination discloses a server that enables dynamically converting a client between a plurality of functions

(e.g., office telephone, database, e-mail) when and as needed and in real time. Ex. 1066 ¶ 25; *see also* Ex. 1003 ¶¶ 156–161.

b) Petitioner’s Proposed Combination of Rautiola and Sainton

As discussed below, we determine that Petitioner’s proposed combination of Rautiola and Sainton, discussed in the Petition, shows that Sainton automatically switches, without manual intervention by a user, between local networks (i.e., the claimed first function) and public carrier networks (i.e., the claimed second function) in response to variable conditions as required by both Patent Owner’s proposed construction of dynamic and Petitioner’s proposed construction of dynamic.

We recognize that the Petition only briefly discusses Sainton in discussing claim 2 (Pet. 59–60), but Petitioner references the discussion of claim limitation [1.5] which clearly explains that Sainton “dynamically” switches between the two claimed functions. *See* Pet. 43–44 (limitation 1.5), 59–60 (claim 2). Petitioner’s arguments in dependent claim 2 are also relevant because, when a dependent claim is “found to have been obvious, the broader claims . . . must also have been obvious.” *Ormco Corp. v. Align Tech., Inc.*, 498 F.3d 1307, 1319 (Fed. Cir. 2007).

As discussed above in connection with claim limitation 1.5, Petitioner explains that

Sainton further teaches that one example of “*functional instructions*” includes instructions for switching between networks. Specifically, Sainton teaches that a laptop with PCMCIA card “may have a **preprogrammed routine for selecting information carriers** based on varying criteria.” Ex.1007, 16:28–34.

Sainton also teaches that the laptop with PCMCIA card can use various wireless networks, including the types of cellular radio

networks and wireless LANs in Rautiola's system, such as "**the U.S. cellular telephone network . . . and wireless LAN systems.**" Ex.1007, 5:14–29; Ex.1003, ¶¶123–132.

Pet. 44 (footnote omitted).

In connection with claim 2, Petitioner explains that

[a]s discussed at [1.0] and [1.5], Rautiola teaches a laptop that physically switches between an office wireless infrared LAN and public cellular networks (*e.g.*, GSM) outside of the LAN. Ex.1005, 3:36–38, 4:26–27, 5:20–23, 13:31–51.

* * *

Further, as discussed at [1.5], Sainton teaches that a laptop is preprogrammed to switch between different available LAN and cellular networks based on changing network criteria or conditions. For instance, the laptop includes "a preprogrammed routine for **selecting information carriers based on varying criteria**" where "[p]ossible criteria include the cost of sending a data message" and "quality of transmission link," among others. Ex.1007, 16:28–43; Ex.1003, ¶¶163–175.

Pet. 58–60 (second alteration in original). According to Petitioner, "Rautiola's laptop that switches between office and home wireless LANs and public cellular networks when the laptop physically moves, in view of Sainton's technique of selecting between networks based on varying criteria," renders obvious "*wherein the mobile device is adapted to switch dynamically between local networks and public carrier networks.*" *Id.* at 60.

We agree with Petitioner. As discussed above in Section III.D.4, Sainton discloses that its system works on cellular telephone networks and wireless LAN systems. Ex. 1007, 5:13–29. Referring to column 16, lines 28–43 cited by Petitioner in its discussion of claim 2, Sainton teaches that its system may switch between these services *automatically* based on preprogrammed routines for selecting information carriers based on varying criteria. *Id.* at 16:28–43. Possible criteria include the cost of sending a data

message; quality of transmission link (signal strength, interference actual or potential); available bandwidth on a carrier for data transmission (or transmission speed supported); potential for being bumped off the system or having transmissions delayed (that is, is the service provider at nearly full capacity); security of transmission; or other special criteria which the user or the device may establish based on the user's individual priorities. *Id.*

Based upon Sainton's functional instructions/preprogrammed routines presented by Petitioner, we determine that Sainton automatically switches, without manual intervention by the user, between various networks (e.g., local networks and public carrier networks) in response to changing/variable networks or conditions. Ex. 1007, 5:13–28 (listing the U.S. cellular telephone system and wireless LAN systems), 16:28–34. We are persuaded that Sainton's switching/conversion occurs in real time because the preprogrammed routine is performed immediately, based upon the detection of the set criteria, to determine whether the switching occurs. Thus, Sainton dynamically switches/converts between a local network (i.e., a first function) and public carrier networks (i.e., a second function) under Petitioner's and Patent Owner's proposed constructions for “dynamic.”

Put another way, in Petitioner's proposed combination of Rautiola, Regnier, and Sainton, Rautiola teaches the recited “server,” Rautiola and Sainton each teach “functional instructions including instructions for use in providing a plurality of functions to the wireless device,” Sainton teaches a “functional instruction[] provided for switching between one or more networks including at least one public network,” and the asserted server of Rautiola “serves as a primary repository or exchange to deliver various functions to the wireless device,” as recited in the subject claim. We find

that the relied upon portions of Rautiola and Sainton teach or suggest the limitations of claim 2.

Based on our findings above, because (1) Petitioner’s relied-upon server “serves as a primary repository or exchange to deliver various functions to the wireless device” and the “functional instructions includ[e] instructions for . . . switching between one or more networks including at least one public network” and (2) Sainton teaches a wireless device “adapted to switch dynamically between local networks and public carrier networks,” Petitioner’s proposed combination would teach, suggest, and/or have rendered obvious a server that “enables dynamic conversion of the wireless device from a first function to a second function,” as required by claim 1, because the wireless device of Sainton “dynamically” or automatically without user intervention “switch[es] . . . between local networks and public carrier networks,” as required by claim 2. The full record shows that the asserted server “enable[s] dynamic conversion” because it delivers the functional instructions for adapting Sainton’s device to switch automatically between networks.

Patent Owner argues that Petitioner’s analysis of claim 2 does not articulate why Rautiola’s or Sainton’s switch is dynamic. *See* PO Resp. 34–35. For the reasons above, we disagree with Patent Owner as we determine that Petitioner demonstrates that Sainton’s preprogramed routines automatically switch, without manual intervention by a user, between two functions as required by the constructions of dynamic proposed by Petitioner and Patent Owner.

We determine that Petitioner has proven, by a preponderance of the evidence, that Rautiola, Regnier, and Sainton render obvious claim 2.

7. *Claims 3 and 16–18*

Claims 3 and 16–18 depend directly from independent claim 1. Ex. 1001, 9:43–45, 10:36–44. Petitioner, citing the supporting declaration of Dr. Kotzin, provides a limitation-by-limitation comparison of Rautiola, Regnier, and Sinton to claims 3 and 16–18. Pet. 60–66 (citing Ex. 1005, 1:63–64, 3:36–38, 4:26–27, 5:20–23, 6:20–25, 6:33–34, 7:9–17, 10:49–53, 10:59–65, 13:31–35, 15:20–16:1, Figs. 2, 3; Ex. 1006, 1:54–59, 4:5–7; Ex. 1007, 5:14–29, 16:30–43; Ex. 1003 ¶¶ 176–203).

Patent Owner does not separately address claims 3 and 16–18 and relies on the same arguments made in connection with claim 1. *See* PO Resp. We have reviewed the limitation-by-limitation comparison, and we determine that Petitioner has demonstrated that the combination of Rautiola, Regnier, and Sinton teaches or suggests all of the elements of claims 3 and 16–18. As discussed above, we are persuaded that Petitioner has shown that one of ordinary skill in the art would have combined the cited references as indicated, such that Petitioner has proven, by a preponderance of the evidence, that Rautiola, Regnier, and Sinton render obvious claims 3 and 16–18.

E. Grounds 2–4: Asserted Obviousness of Claims 5, 6, 10, and 13

Claims 5, 6, 10, and 13 depend from independent claim 1. Ex. 1001, 10:4–31. Petitioner asserts that the following claims are unpatentable under 35 U.S.C. § 103 as being obvious as follows:

(1) claims 5 and 6 over Rautiola, Regnier, Sinton, and Wilson (Pet. 66–72 (citing Ex. 1005, Figs. 2–3, 7:22–24, 10:59–62; Ex. 1008, 5:42–44, 6:57–60, 7:6–10, 8:18–19, 31:13–16, 31:23–25, 32:16–22; Ex. 1003 ¶¶ 204–238));

(2) claim 10 over Rautiola, Regnier, Sainton, and Salazar (Pet. 72–75 (citing Ex. 1005, Figs. 2–3, 7:19–24, 10:59–62; Ex. 1009, Abstract, 1:55–61, 5:5–9, 7:16–18, 13:31–35, 20:31–33, 23:17–24, 25:41–43; Ex. 1003 ¶¶ 239–256)); and

(3) claim 13 over Rautiola, Regnier, Sainton, and Crites (Pet. 75–78 (citing Ex. 1005, Abstract, Fig. 2, 4:35–54, 13:31–35; Ex. 1010, 1:5–6, 1:20, 4:19, 4:45–47, 16:28–34; Ex. 1003 ¶¶ 257–272)). Petitioner, citing the supporting declaration of Dr. Kotzin, provides a limitation-by-limitation comparison of Rautiola, Regnier, Sainton, Wilson, Salazar, and Crites to these claims. *Id.* at 66–78.

Patent Owner relies on the same arguments made in connection with claim 1 and does not separately address claims 5, 6, 10, and 13, other than to argue that Wilson, Salazar, and Crites are not analogous art and, thus, cannot be considered in Petitioner’s obviousness challenges in Grounds 2–4. PO Resp. 35–40. We address Patent Owner’s analogous art arguments below.

First, Patent Owner argues that Petitioner does not address whether Wilson, Salazar, and Crites are analogous art in the Petition. *See* PO Resp. 35–37. Petitioner does not establish that these references are analogous art in the Petition but Petitioner may address whether prior art is analogous art in its Reply. *Sanofi-Aventis v. Mylan*, 66 F.4th at 1379.

Second, Patent Owner argues that Wilson is not analogous art because the ’937 Patent’s field of endeavor is “wireless communication between wireless mobile devices and networks” whereas Wilson focuses on “monitoring and controlling peripheral devices.” PO Resp. 37–38 (citing Ex. 1008, 1:36–51; Ex. 2031 ¶ 94). Patent Owner also argues that Wilson also is not reasonably pertinent to the particular problem of the ’937 Patent

because the '937 Patent is directed towards “the problem of configuring a single wireless mobile device to communicate with and adapt to multiple networks to avoid a ‘proliferation of mobile devices’” (Ex. 2031 ¶ 95 (citing Ex. 1001, 1:19–42)), whereas Wilson seeks “to overcome problems with peripheral-device control systems that have limited monitoring abilities and undesirably require specialized knowledge for programming, operating, testing, and reconfiguring the system” (Ex. 2031 ¶ 95 (citing Ex. 1006, 1:64–3:42)). PO Resp. 38. We do not agree.

We agree with Petitioner that Wilson is analogous art to the '937 Patent because it is in the wireless networking field. Ex. 1066 ¶ 20. Wilson describes a home automation system where the communication network between a user's personal computer, such as a “MACINTOSH Portable” laptop, includes “a wireless or AC power-line transmission media, such as an infrared (I/R) [or] radio frequency (RF).” Ex. 1008, 8:41, 6:57–60. Wilson is also pertinent to the problem addressed by the '937 Patent because it teaches the same solution recited in claims 5–6—that is, remotely controlling a television and managing appliance power settings. *Id.* at Fig. 11, 5:42–44, 6:57–60, 7:6–10, 8:18–19, 27:68–28:1, 31:13–25, 32:16–22. Wilson is also pertinent to the '937 Patent's problem as described by Patent Owner, describing a laptop serving as a remote control device that controls a TV over multiple networks via a modem connection. *Id.* at Fig. 11, 32:16–22.

Third, we do not agree with Patent Owner's argument that Salazar is not analogous art. PO Resp. 35. We agree with Petitioner that Salazar is analogous art to the '937 Patent. Ex. 1066 ¶ 21. Salazar is in the same field of endeavor, describing a “wireless communication device” using “radio and

infra-red frequency communication links,” i.e., wireless networking.

Ex. 1009, Abstract. Salazar is also pertinent to the problem addressed by the ’937 Patent because it teaches the same solution recited in claim 10—that is, remotely controlling a garage door opener. *Id.* at Abstract, 23:17–18, 20:31–33. Further, Salazar describes that the wireless device connects over multiple networks (e.g., radio or IR) and obviates the need for multiple devices by performing the functions of a “garage door opener” remote control device using a laptop instead. *Id.*

Fourth, Patent Owner argues that Crites is not analogous art because it “relates to computer and network systems that render continuous media information such as audio and video information from sources such as network servers and analog tuners.” PO Resp. 38–39 (citing Ex. 1010, 1:3–7). Patent Owner also argues that Crites also is not reasonably pertinent to the ’937 Patent problem of “configuring a single wireless mobile device to communicate with and adapt to multiple networks to avoid a ‘proliferation of mobile devices’” and, instead, “Crites aims to reduce complexity for programmers that ‘is a result primarily of the different ways in which application programs must interact with different computer and network elements to render information of various kinds from different sources.’” *Id.* at 39 (citing Ex. 1010, 1:22–26). We do not agree with Patent Owner.

We agree with Petitioner that Crites is also analogous art to the ’937 Patent. Ex. 1066 ¶ 22. Crites is in the same field of endeavor, describing “laptop computers” connecting to internet sources, which the skilled artisan would have known included wireless network connections, i.e., wireless networking. Ex. 1010, 1:5–6, 4:19, 4:45–47; Ex. 1066 ¶ 22. Crites is also pertinent to the problem addressed by the ’937 Patent because it teaches the

same solution recited in claim 13—that is, streaming content to a handheld computer via a server on the internet. Ex. 1010, Abstract, 1:5–6, 1:20, 4:19, 4:45–47. Further, Crites describes the laptop streaming media content from an internet server, which could include the laptop accessing the server using multiple different networks, obviating the need for multiple devices (e.g., such as a laptop computer and a separate media server computer) by streaming the media content over the internet so it is accessible by the laptop. *Id.* at Abstract, 1:5–6, 1:20, 4:19, 4:45–47.

After considering Petitioner’s and Patent Owner’s evidence and arguments, we determine that Petitioner has proven, by a preponderance of the evidence, that claims 5, 6, 10, and 13 are unpatentable.

F. Ground 5: Asserted Obviousness of Claims 1, 2, 5, 10, and 17 Over Grube and Gillig

Petitioner asserts that claims 1, 2, 5, 6, 10, and 17 are unpatentable under 35 U.S.C. § 103 as being obvious over Grube and Gillig. Pet. 79–99.

Because we have determined claims 1–3, 5, 6, 10, 13, and 16–18 are unpatentable as obvious over Rautiola, Regnier, Sainton, Wilson, Salazar, and/or Crites, and therefore dispositive as to all challenged claims, we need not reach the grounds over Grube and Gillig for purposes of our Decision. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F.App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to

decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

IV. CONCLUSION¹⁴

For the reasons discussed above, we determine Petitioner has proven, by a preponderance of the evidence, that all of the challenged claims are unpatentable, as summarized in the following table:

Claim(s)	35 U.S.C. §	Reference(s) /Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–3, 16–18	103	Rautiola, Regnier, Sainton	1–3, 16–18	
5, 6	103	Rautiola, Regnier, Sainton, Wilson	5, 6	
10	103	Rautiola, Regnier, Sainton, Salazar	10	
13	103	Rautiola, Regnier, Sainton, Crites	13	
1, 2, 5, 6, 10, 17	103	Grube, Gillig ¹⁵		
Overall Outcome			1–3, 5, 6, 10, 13, 16–18	

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

¹⁵ As explained above, we need not reach the ground involving Grube and Gillig because the grounds over Rautiola, Regnier, Sainton, Wilson, Salazar, and/or Crites are dispositive of all challenged claims.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–3, 5, 6, 10, 13, and 16–18 of U.S. Patent No. 8,472,937 B1 have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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