

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CARDIOCOM, LLC,
Petitioner,

v.

ROBERT BOSCH HEALTHCARE SYSTEMS, INC.,
Patent Owner.

Case IPR2013-00451
Patent 7,587,469 B2

Before MIRIAM L. QUINN, STEPHEN C. SIU, and JUSTIN T. ARBES,
Administrative Patent Judges.

QUINN, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Cardiocom, LLC (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–22 of U.S. Patent No. 7,587,469 B2 (“the ’469 patent”) pursuant to 35 U.S.C. §§ 311–319. Paper 1 (“Pet”). We instituted trial (Paper 23, “Dec. on Inst.”) as to claims 1, 2, and 5–10 as follows:

- a) Obviousness of claims 1, 2, and 5–10 over Cohen¹ and Wahlquist;² and
- b) Obviousness of claims 1, 2, and 5–10 over Cohen, Wahlquist, Neumann,³ and Jacobs.⁴

Robert Bosch Healthcare Systems, Inc. (“Patent Owner”) filed a Patent Owner Response (Paper 40 (“PO Resp.”)) addressing the above-referenced obviousness grounds. Patent Owner relies on a Declaration of Dr. Yadin David to support the rebuttal to Petitioner’s challenges of unpatentability. *See* Ex. 2009. Petitioner filed a Reply to Patent Owner’s Response. Paper 43 (“Pet. Reply”). As scheduled, an oral hearing was held on September 9, 2014, and a transcript of that hearing is part of the record. Paper 64 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

¹ U.S. Patent No. 6,014,626 (Ex. 1002) (“Cohen”).

² U.S. Patent No. 5,367,667 (Ex. 1003) (“Wahlquist”).

³ European Patent Application Publication No. EP 0505627A2 (Ex. 1004) (“Neumann”).

⁴ U.S. Patent No. 5,956,683 (Ex. 1005) (“Jacobs”).

For the reasons that follow, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, and 5–10 of the '469 patent are unpatentable.

A. THE '469 PATENT (EX. 1001)

The '469 patent, titled “Audio Instructions for Appliances,” issued on September 8, 2009. The '469 patent relates to a networked system for remotely monitoring individuals and for communicating information to the individuals through the use of script programs. Ex. 1001, 1:39–41.

The patent describes the need for remote monitoring of patients in out-patient or home healthcare programs. *Id.* at 1:45–50, 2:33–37. According to the patent, the use of personal computers, medical monitoring devices, and interactive telephone or video response systems for remote monitoring have proved inadequate because of their expense, limited multimedia capability, and the complexity of managing non-compliant patients. *Id.* at 1:65–2:32.

One embodiment of the '469 patent, shown in Figure 1, reproduced below, is networked system 16 with server 18 connected to the Internet (communication network 24), where server 18 sends script programs to each remotely programmable apparatus 26. *Id.* at 4:18–35.

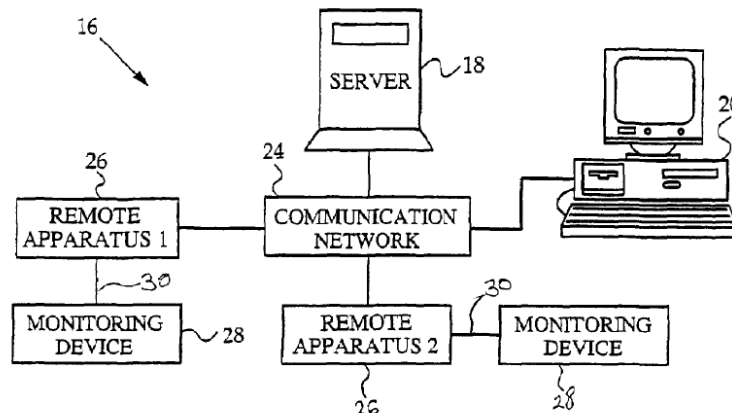


FIG. 1

Figure 1 illustrates that system 16 may include any number of remotely programmable apparatuses 26 (two are shown, above) for monitoring any number of patients. *Id.* at 4:42–44. In one preferred embodiment, each patient is provided with monitoring device 28 (such as a blood glucose meter). *Id.* at 4:45–61. That device produces measurements of a physiological condition of the patient (such as blood glucose concentrations in the blood of the patient) and transmits those measurements to the patient’s remote apparatus 26 via standard cable 30. *Id.* at 4:45–61. Remotely programmable apparatus 26 executes a script program received from server 18. *Id.* at 5:7–9. That script program includes “queries, reminder messages, information statements, useful quotations, or other information of benefit to the patient.” *Id.* at 5: 9–11.

The ’469 patent further describes an embodiment where remotely programmable apparatus 26 includes speech recognition and speech synthesis functionality. *Id.* at 11:50–54. Audible queries, prompts, and response choices are communicated to the user through a speaker in apparatus 26, and a microphone receives the responses from the user. *Id.* at 12:40–48.

In further embodiments, remotely programmable apparatus 26 is an interactive television system. *Id.* at 16:19–26. Furthermore, the ’469 patent describes collecting data from smart appliances, such as a “refrigerator, telephone, stove, clock radio, VCR, or any other electrical or non-electrical device including the monitoring device 28.” *Id.* at 20:36–38.

B. ILLUSTRATIVE CLAIM

Of the claims-at-issue in trial, claim 1 is independent and is reproduced below:

1. A communications network comprising:
 - a communications channel;
 - a server;
 - a primary device in communication with said server through said communications channel, wherein (A) said primary device comprises a component adapted to (i) receive one or more computer programs including one or more queries, instructions or messages as a first digital file from said server, (ii) convert the first digital file into synthesized audio transmissions, (iii) present said synthesized audio transmissions to an individual through a speaker and (iv) receive audible responses from said individual and (B) said primary device comprises a processor adapted to collect data relating to said primary device, and execute said computer programs to provide a diagnosis of a performance of said primary device; and
 - a secondary device operatively connected to said primary device, wherein said secondary device (i) is adapted to be operated by said individual in response to said synthesized audio transmissions and (ii) comprises a user interface adapted to receive input responses from said individual and convert said input responses to a second digital file through speech recognition.

II. ANALYSIS

A. CLAIM INTERPRETATION

The Board interprets claims using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.”) (citation and internal quotation marks omitted).

In our Decision on Institution, we construed the following claim term:

Term	Interpretation
“execute said computer programs to provide a diagnosis of a performance of said primary device”	execute said computer programs to provide data or information of a performed operation by the primary device

See Dec. on Inst. 9–12. We do not perceive any reason or evidence that now compels deviation from the above interpretation.

With regard to “script program,” recited only in claim 10, we discuss here the construction by the panel in *Cardiocom LLC v. Robert Bosch Healthcare Sys, Inc.*, Case IPR2013-00431 (PTAB) [hereinafter “431 Case”], which has reached a final written decision concurrently with the instant proceeding. *See* 431 Case, slip op. at 6–7 (PTAB Jan. 16, 2015) (Paper 22). As stated in the 431 Case, the specification of the ’469 patent discloses a microprocessor that stores firmware in memory, where the firmware includes a script interpreter used by the microprocessor to execute script programs. *See* Ex. 1001, 5:53–57. Furthermore, according to the

Microsoft Dictionary, a “script” is “a program consisting of a set of instruction to an application of utility program.” Ex. 1009, 422. This is consistent with the ordinary and customary meaning of the term in light of the specification of the ’469 patent. Accordingly, and for the same reasons stated in our Decision on Institution in Case IPR2013-00431, we construe “script program” to mean “a program that contains a set of instructions capable of being executed and interpreted.” *See id.*

B. RELEVANT LEGAL PRINCIPLES

To prevail in its challenges to the patentability of claims, the Petitioner must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of 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 skill in the art; and (4) where in evidence, so-called secondary considerations including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (“the *Graham* factors”). The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

For an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418.

C. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner asserts that the level of ordinary skill in the art has the following education and experience: Bachelor’s degree in Electrical Engineering or Computer Science, or its equivalent, and at least 2 years of experience with the design and programming of patient monitoring systems and at least 1 year of experience with the design or programming of networked systems. Ex. 1008 ¶ 22. Patent Owner’s declarant, Dr. David, disagrees with the above assertion in that a person of ordinary skill in the art would not have the 1 year of experience with the design and programming of networked systems. Ex. 2009 ¶ 26. The disagreement appears to be immaterial to the arguments presented by Patent Owner, however, because Dr. David declares that this additional experience would not affect his opinions. *Id.* Accordingly, we need not determine which of the alleged education and experience proffered by the parties is correct.

We determine the obviousness issues guided by the evidence of the

level of ordinary skill in the art presented by the references themselves. *See Okajima*, 261 F.3d at 1355. From the Cohen reference, which Patent Owner agrees is in the field of endeavor of the invention in question (Tr. 29:21–30:2), we understand that the level of ordinary skill in the art, at a minimum, requires some amount of experience with the configuration of telecommunications hardware systems, such as telephone and personal computer systems, for communicating with a central monitoring system, which is computer-implemented technology. *See* Ex. 1002, 3:17–24; *see also* 3:43–57 (describing the features of the computer-implemented technology at-issue in Cohen: computer processor and software, telecommunication lines, voice signal interpretation, database and report generation, voice generation, speech recognition, speech and digit recognizer, printer, and local area network (LAN)). With this level of ordinary skill in mind, we now turn to the analysis of the differences between the asserted prior art references and the subject matter recited in the claims-at-issue.

D. ASSERTED GROUND BASED ON COHEN AND WAHLQUIST

Petitioner presents claim charts that identify the disclosures in Cohen and Wahlquist alleged to render unpatentable the subject matter claimed in claims 1, 2, and 5–10. Pet. 20–31. Petitioner further relies on a declaration of Dr. Robert Stone (Ex. 1008) to support the analysis advocated in the Petition. A summary of Cohen and Wahlquist is in order.

1. Overview of Cohen (Exhibit 1002)

Cohen is directed to a patient monitoring system, and, in particular, to using a telephone to monitor the health status of outpatients. Ex. 1002,

Abstract, col. 1:14–16. The Cohen central monitoring system generates questions concerning a health condition of a patient, questions which the patient answers using the keys of a telephone, by speaking the response, or in electronic form, such as by a computer-to-computer communication. *Id.* at Abstract, 16:7–12. One embodiment of Cohen’s system is depicted in Figure 2A, reproduced below.

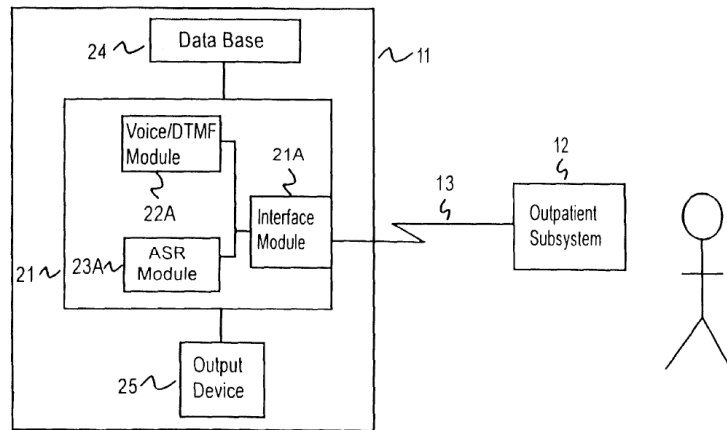


Figure 2A

Figure 2A depicts central monitoring subsystem 11 coupled to outpatient subsystem 12 via telecommunications system 13 (for example, a public telephone network or the Internet). *Id.* at 7:53–56, 9:2–19. The central monitoring subsystem 11 includes computer processor 21 with automatic speech recognition (“ASR”) module 23A that decodes the voice commands in the patient’s response received through outpatient subsystem 12. *Id.* at 9:8–32.

Cohen further describes database 24 that provides the ability for the provider to configure personalized “walkthroughs.” *Id.* at 8:44–48. A “walkthrough” is a session with a patient who answers questions about a

health issue, such as the patient taking medication for depression. *Id.* at 10:13–40. A walkthrough flowchart defines what questions will be asked of a patient. *Id.* at 10:40–42. Voice generator 22 translates the computer questions in the walkthrough into voice that the patient can hear. *Id.* at 11:56–59, 12:49–52. After voice/dual tone multifrequency (DTMF) module 22A and/or ASR module 23A translate the patient’s answer into a form recognizable by computer processor 21, the answer received from the patient can be stored in the patient’s record in the database. *Id.* at 17:32–34.

Another embodiment of Cohen is depicted in Figure 5, reproduced below.

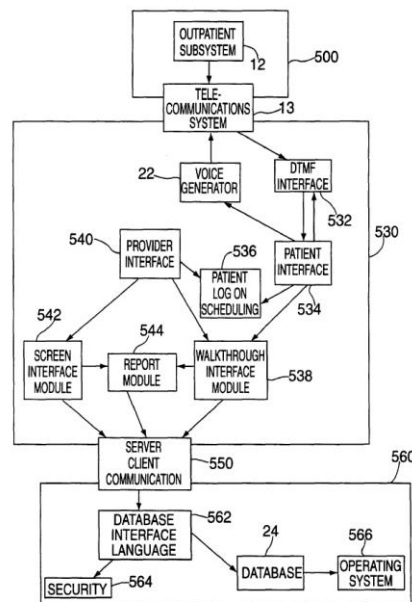


FIG. 5

Figure 5 illustrates that the Cohen system may be divided into three parts: patient system 500, interface server 530, and database server 560. *Id.* at 11:31–33. Patient system 500 incorporates outpatient subsystem 12 described above with reference to Figure 2A. *See id.* at 11:33–37. Interface server 530 handles the process of getting answers from patients, *id.*, and it

allows health care providers access to database 24. *Id.* at 11:37–39. Cohen describes interface server 530 and database server 560 as comprising central monitoring subsystem 11 described above with reference to Figure 2A. *Id.* at 11:40–42.

2. Overview of Wahlquist (Exhibit 1003)

Wahlquist is directed to remote diagnostics on a personal computer system, where the user calls a help desk representative who selects specific diagnostic tests, resident on the user's diagnostic disk, to be run on the user's computer. Ex. 1003, Abstract. The user's computer is instructed to run the selected diagnostic tests. *Id.* Upon completion of the tests, the user's computer reconnects with the help desk computer and reports the result of the tests. *Id.* A script file also may instruct the user's computer to send copies of various computer system files, such as network or configuration system files, to a link manager computer. *Id.* at 6:33–36. In one embodiment of a remote diagnostic method, Wahlquist describes that the link manager computer interrogates the user's computer to determine and provide its corresponding computer identification code. *Id.* at 5:52–56.

3. Analysis of Evidence Presented Regarding Claim 1

We have reviewed Petitioner's arguments and evidence presented in the Petition. Petitioner has presented evidence showing that Cohen discloses the following recited structures:

- a. "communications channel" (Cohen's phone lines 13 and LAN) (Pet. 20 (citing Ex. 1002, 3:18–23));
- b. "server" (Cohen's database server 560) (Pet. 20–21 (citing Ex. 1002, 11:43–49, Fig. 5));

- c. “primary device” (Cohen’s interface server 530) (Pet. 21 (citing Ex. 1002, 14:35–38)), where the “primary device” includes a “component” (Cohen’s computer processor 21)⁵ adapted to:
 - i. “receive . . . computer programs . . . as a first digital file” (Cohen’s retrieval of records from database 24 to select questions for the patient) (Pet. 22 (citing Ex. 1002, 16:35–38));
 - ii. “convert the first digital file into synthesized audio transmissions” (Cohen’s voice generator 22 translates the computer questions into voice) (Pet. 22 (citing Ex. 1002, 11:56–59));
 - iii. “present said synthesized audio transmissions to an individual through a speaker” (Cohen’s voice signals from voice generator 22 are sent to outpatient subsystem 12 for delivery through speaker) (Pet. 23 (citing Ex. 1002, 11:56–59, 4:16–18)); and
 - iv. “receive audible responses from said individual” (Cohen’s interface module 21A digitizes voice response from patient) (Pet. 23 (citing Ex. 1002, 9:17–24); and
- d. “secondary device” (Cohen’s outpatient subsystem 12, which Cohen describes as either a telephone or computer with a modem) (Pet. 24 (citing Ex. 1002, 9:17–24, 4:16–26)), where this secondary device:

⁵ Pet. 21–22 (citing Ex. 1002, 9:8–16, 11:9–21, Figs. 2, 2A, 5, 5A)).

- i. “is adapted to be operated by said individual in response to said synthesized audio transmissions” (Cohen’s computer processor asks the patient to identify himself or herself and the patient presses keys on the keypad in response) (Pet. 24–25 (citing Ex. 1002, 4:59–64));
- ii. “comprises a user interface adapted to receive input responses from said individual” (Cohen’s telephone or user computer for interfacing with the user) (Pet. 25 (citing Ex. 1002, 4:16–26)); and
- iii. “convert[s] said input responses to a second digital file through speech recognition” (Cohen’s user computer would be known to include speech recognition software and functionality) (Pet. 25 (citing Ex. 1002, 4:16–26, Fig. 5A)).

Petitioner further relies on Wahlquist as teaching or suggesting that the “primary device comprises a processor adapted to collect data relating to said primary device, and execute said computer programs to provide a diagnosis of a performance of said primary device.” Pet. 23 (citing Ex. 1003, 5:52–56, 2:38–43, 4:65–67, 6:33–36)). According to Petitioner, Wahlquist teaches that user computer 70 includes a processor that collects data relating to the user computer because user computer 70 interrogates itself to determine its identification code in response to a link manager’s requests. *Id.* Furthermore, Petitioner asserts that Wahlquist teaches execution of computer programs to provide a diagnosis as claimed because Wahlquist’s user computer 70 downloads script files from the link manager, and the diagnostic program running in user computer 70 executes the downloaded script files. *Id.* Wahlquist’s script file instructs user computer

70 to send copies of system files to the link manager computer. *Id.* at 24 (citing Ex. 1003, 6:33–36).

Patent Owner contends that the asserted prior art does not render claim 1 unpatentable because: (1) Wahlquist is not “analogous art”; (2) a person of ordinary skill in the art would not have been motivated to combine the asserted references; and (3) Petitioner has not shown that the asserted references or the combinations teach all of the recited elements. PO Resp. 20. We do not agree with Patent Owner’s contentions for the reasons that follow.

a. Whether Wahlquist is analogous art

Patent Owner argues that Wahlquist is neither from the same field of endeavor nor reasonably pertinent to the problems addressed by the ’469 patent. PO Resp. 21. A reference is analogous art to the claimed invention if: (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention). *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). “A reference is reasonably pertinent if . . . it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.” *Innovation Toys, LLC v. MGA Entm’t, Inc.*, 637 F.3d 1314, 1321 (Fed. Cir. 2011).

With regard to being reasonably pertinent, Patent Owner contends that the objective of the script programs in the ’469 patent is to facilitate the monitoring of and communications with individuals. PO Resp. 26. Wahlquist’s objective, on the other hand, is to eliminate communications

with users. *Id.* According to Patent Owner, Wahlquist teaches that the user is the problem, and, thus, the solution is to eliminate the user from the process of diagnosing the user's computer. *Id.* at 26–27.

The arguments presented by Patent Owner characterize very narrowly the teachings of Wahlquist and the '469 patent regarding the pertinent problems. First, the '469 patent describes that the inventors faced the problem of the difficulty in identifying each patient uniquely using the known systems, and that the systems were incapable of collecting medical data from monitoring devices. Ex. 1001, 2:28–32. Furthermore, there was a problem of intrusive monitoring in the patient's life, which could result in resistance to monitoring over time. *Id.* at 2:26–28. Thus, the '469 patent addresses the intrusiveness of a communication and unique identification of users in a system where a central facility collects data from the devices.

Therefore, although making communication with users easier may have been one of the problems addressed by the '469 patent, we do not ignore the further problems of reducing intrusiveness, unique identification, and collection of data from the devices. Consequently, we find Patent Owner's argument unpersuasive because those arguments characterize the '469 patent as addressing only “increas[ing] communications with users and mak[ing] those communications easier.” *See* PO Resp. 27.

Considering Wahlquist, we agree with Patent Owner that Wahlquist teaches some automation of the diagnosis process of a user computer. *See id.* We do not agree with Patent Owner, however, in its characterization of Wahlquist as eliminating user participation. *See id.* (asserting that “[t]he entire diagnosis process itself is completely divorced from any participation by the user, much less any communications to the user”). Patent Owner

does not demonstrate persuasively that Wahlquist seeks to eliminate all communications with users, rather than merely to simplify such communications. *Id.* at 26. Rather, Wahlquist discloses a system and method in which “a user calls the customer service help desk” and “is then asked to identify the general nature of the problem.” Ex. 1003, 2:7–16. The representative then “instructs the user” as to what actions to take. *Id.* at 2:6–7, 15–16, 26. One of ordinary skill in the art would have understood that a user calling a help desk and identifying a problem to the representative, as well as the representative instructing the user, would have constituted “communication” between the user and the representative. The system of Wahlquist depends on “communications with a user” because without such “communication,” the representative would not be apprised of the user’s issues and would be unable to instruct the user as to the proper action to take.

Instead, Petitioner argues, and we agree, that Wahlquist teaches various embodiments, including one in which a help desk representative communicates with individuals during the diagnostic process. Pet. Reply 2 (citing Ex. 1041, 261:2–262:7 (during the testing, in Wahlquist, the user can be prompted to reply); *see also* Ex. 1003, 9:61–10:5 (describing interactivity or user intervention during the diagnostic tests)).

Further, we find that Wahlquist is pertinent to reducing complex information presented to a computer user and reducing the time consuming process of communications with users to diagnose the computer. *See* Ex. 1003, 1:24–68. Wahlquist also deals with providing a level of service to users during a computer diagnosis. *Id.* Wahlquist addresses these issues by providing script files tailored to a specific user’s computer and running those

script files with minimal complexity for the user. That is, Wahlquist discloses that when a user “calls the help desk” for the creation of “a computerized case file,” the file is associated with “a unique case identification number [and] the user’s identification.” Ex. 1003, 4:36, 42, 45–46. Based on this information, the selection of “specific diagnostic tests” is performed. *Id.* at 4:58–60. These tests are performed using script files that guide the user’s computer through the collection of data and the diagnosis process. *Id.* at 2:32–60. It follows from Wahlquist’s description of this process that the use of the script programs reduces the time spent and complexity of the interaction between a user and a help desk technician, and is reasonably pertinent to making easier the interaction between a patient and the monitoring devices known at the time of invention of the ’469 patent. *See also* Pet. Reply 2 (arguing that Wahlquist’s system saves time for help desk representatives, just as the ’469 patent’s communication systems save time for health care professionals). Furthermore, Wahlquist’s script files collect the diagnostic information, which is pertinent to the problem of collecting data from those known monitoring devices. Finally, we also find that Wahlquist’s reduction of complexity and user involvement in the diagnostic process is pertinent to the problems, addressed by the ’469 patent inventor, of intrusiveness into a patient’s life and making less complex the interface of the user with the monitoring devices.

Accordingly, we determine that Wahlquist is reasonably pertinent to the problems faced by the inventor of the ’469 patent, and, therefore, we do not agree with Patent Owner that Wahlquist is not analogous art.

With regard to the field of endeavor, Patent Owner contends that the language of the ’469 claims identifies the proper field of endeavor. PO

Resp. 22. Thus, according to Patent Owner, the field of endeavor is “remote monitoring of individuals and the communication of information to the individuals.” PO Resp. 22–24 (citing Ex. 2009 ¶¶ 70–73). Wahlquist, therefore, is not analogous art, according to Patent Owner, because Wahlquist is directed to gathering information about *computer* functions, not individuals. *Id.* at 24–25. We need not reach this determination of whether Wahlquist is outside the proper field of endeavor, however, because we have determined, as stated above, that Wahlquist is analogous art.

b. Combinability of Cohen and Wahlquist

Patent Owner contends that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of Cohen and Wahlquist. PO Resp. 29–39. The arguments allegedly supporting this contention are that: (1) the art provides no instruction, suggestion, or teaching to combine Cohen with other references; (2) Cohen and Wahlquist are in different fields and address different problems; and (3) Cohen teaches away from the combination with Wahlquist. *Id.* We are not persuaded by these arguments for the following reasons.

First, an obviousness “analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. It is, therefore, unpersuasive for Patent Owner to argue that Petitioner’s proffered rationales for the combination fail because neither Cohen nor Wahlquist teaches explicitly that they could be combined with other teachings. *See* PO

Resp. 31, 37–38 (arguing the lack of evidence that Cohen is “incomplete” and that nothing in Wahlquist would teach the combination).⁶ Further, Patent Owner narrowly focuses on Wahlquist being directed solely to eliminating slow and unsatisfactory communications with users. PO Resp. 31. As stated above in the analogous art analysis, Wahlquist is directed to more than just eliminating communications with users. The alleged “elimination” is not supported by a thorough reading of Wahlquist. We find, instead, that Wahlquist teaches prompting users with keystrokes during the diagnosis of their computer, a process that, from the standpoint of the user, is greatly simplified compared to the prior art systems described by Wahlquist, and consistent with the problems described in Cohen and the ’469 patent of simplifying user interactions with user devices.

Second, we do not agree with Patent Owner that Cohen and Wahlquist address different problems and solutions such that one of ordinary skill in the art would not have been motivated to combine their teachings. *See* PO Resp. 32–38. Patent Owner’s arguments focus on the characterization of Wahlquist as eliminating communications with users. *See, e.g., id.* at 33–34 (arguing that Wahlquist eliminates user communications while Cohen increases communications with the user). We have rejected this characterization, above, as unsupported and contrary to the teachings in Wahlquist.

Further, we are not persuaded by the argument that because

⁶ Patent Owner does not identify any authority (and we are aware of none) for the proposition that a reference somehow must be incomplete to be combinable with another reference under 35 U.S.C. § 103(a).

Wahlquist's diagnosis occurs after a problem occurs, a person of ordinary skill in the art would have had no reason to combine the disclosed diagnosis system with Cohen's system of regular patient monitoring. *See* PO Resp. 35. That argument is not commensurate with the scope of the claims and is contrary to the teachings of Cohen. Patent Owner does not point to any claim language directed to "regular" versus event-driven communications. Nor do we see such features implicated, and such features actually are contradicted, by the broad description of the invention. *See, e.g.,* Ex. 1001, 20:9–12 (describing that the system of the '469 patent may be used to provide service of "panic systems, sleep surveillance, specific monitoring of disease conditions, etc."). Moreover, Cohen teaches a central monitoring subsystem 11 that passively waits until the patient decides to initiate a session, including when a family member becomes sick. *See* Ex. 1002, 19:29–36, 19:51–55. We find that, contradicting Patent Owner's characterization of Cohen, the disclosed session would not be "regular," and is instead "event-driven," when the user initiates a session based on an event, such as a sudden sickness of a family member.

Further to the second point of different solutions, Patent Owner directs our attention to the alleged complexity of Wahlquist as being incompatible with Cohen's reduction of complexity. PO Resp. 35–37. We are not persuaded that the alleged simplicity in Cohen, however, would have caused a person of ordinary skill in the art to reject Wahlquist's teachings of the use of script files or computer programs for diagnosing Cohen's user device or computer. The teaching in Cohen of providing the user with a familiar device is directed at simplifying the user interface, not necessarily simplifying the implementation of the system. *See* PO Resp. 37 (arguing

that Cohen teaches away because adding computer diagnostic functionality of Wahlquist is contrary to the teachings of using equipment that the patient already has in the home). Patent Owner's argument ignores the application of the level of ordinary skill in the art to the claim as a whole, which includes knowledge of the configuration of telecommunications hardware systems, such as telephone and personal computer systems for communicating with a central monitoring system, which is computer-implemented technology. *See supra* Section II.C. The Wahlquist computer is a personal computer, the same type of device that Cohen teaches may be used to interface with the user. *See* Ex. 1003, Abstract; Ex. 1002, 15:9–13. Therefore, the complexity of Cohen's user device, from the user's standpoint, is not affected by the implementation of Wahlquist's script files or computer programs. And Patent Owner has failed to show that the alleged complexity of implementing in Cohen the Wahlquist script files would have been uniquely challenging or beyond the level of ordinary skill. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

Third, Patent Owner asserts that Cohen teaches away from the solution provided by the '469 patent. PO Resp. 38–39. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). According to Patent Owner, Cohen criticized monitoring devices that were complex and expensive, opting instead to provide the functionality with equipment already in the home. PO Resp. 38. This is contrasted with the

'469 patent's alleged solution of providing a patient with a device for dedicated use and with a unique patient identification code. *Id.* at 38–39. We do not agree with Patent Owner's argument that Cohen teaches away from the claimed invention.

Patent Owner's argument ignores that Cohen, although addressing the use of equipment found in the home, teaches the use of a computer. Ex. 1002, 3:18–23. Patent Owner fails to show how the use of a computer would be a departure from the challenged claims. Nor do we find that the claims require that the recited primary device is a dedicated device provided to the user or cannot be a device the user has in his/her home. Indeed, we find that such a reading of the claims would be contrary to the teachings of the '469 patent, which describes embodiments where the users interact with appliances found in the home of a patient, such as an interactive television, refrigerator, telephone, clock radio, etc. Ex. 1001, 16:19–29, 20:32–64.

c. Whether Cohen and Wahlquist Teach or Suggest the Limitations of Claim 1

Patent Owner contends that the combination of Cohen and Wahlquist fails to teach the primary device and the secondary device. PO Resp. 44–51.

i. *Primary Device Limitation*

Claim 1 recites that the component of the primary device “receive[s] one or more computer programs . . . as a first digital file from said server.” Patent Owner challenges Petitioner's assertion that Cohen's interface server 530 meets the primary device limitation and that Cohen's database server 560 meets the server limitation. *Id.* at 46–48. In summary, Patent Owner asserts that the combination does not teach or suggest the recited computer programs received by the primary device from the server. We do not agree

with Patent Owner's contention because Petitioner has shown that database server 560 sends instructions or questions from the database of database server 560 to present to the patient. *See* Pet. 22 (asserting that the processor is configured to consult database 24 in database server 560 to select one or more appropriate questions for the patient and supporting the assertion with Ex. 1002, 16:35–38); *see also* Pet. Reply 7–9 (arguing that Cohen's central monitoring system includes a processor, controlled by software, that sends information, such as instructions or questions, to the patient). Petitioner asserts that Cohen teaches all of the recited structures of the system as shown in the annotated Figure 5, reproduced below. Pet. Reply 5.

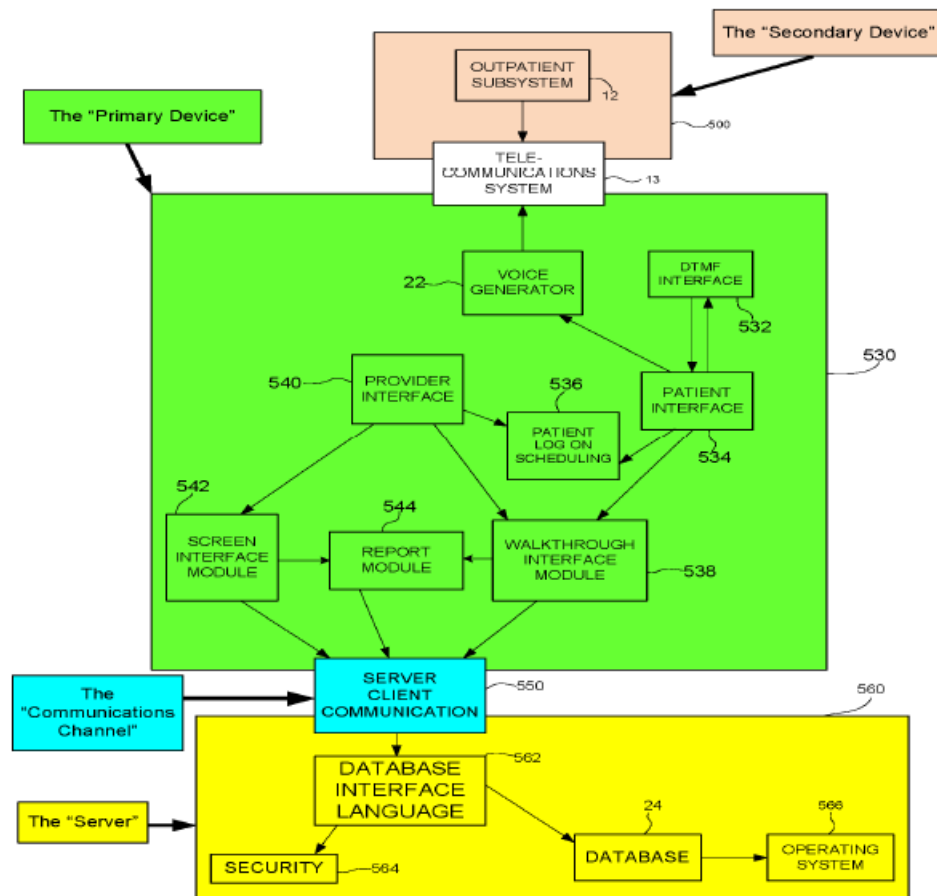


FIG. 5

According to the annotated Figure 5, above, database server 560 (highlighted in yellow) teaches the recited “server” and interface server 530 (highlighted in green) teaches the recited “primary device.” *Id.* at 4–5.

Unquestionably, Cohen’s database server 560 sends a digital file to interface server 530, where the data includes a query or instruction to ask the patient. Tr. 45:6–11. The issue, as framed by Patent Owner, focuses on whether Cohen’s digital file necessarily would comprise a computer program, and not merely queries or instructions. *Id.* at 45:12–46:9. We are not persuaded that such a strict disclosure is needed in order for a person of ordinary skill in the art to appreciate that Cohen’s teaching of a digital file that includes queries and instructions would suggest transmitting computer programs. After all, Cohen is a computer-implemented system with a processor executing the various software modules identified in Figures 5 and 5A. And Petitioner’s case relies also on the teaching of Wahlquist of transmitting a script program from the link manager computer to the user’s computer. Pet. 22. Indeed, Petitioner asserts that sending computer programs, and particularly script programs, over a network, was just as common at the time of the invention as sending instructions over a network connection (as disclosed in Cohen). Pet. 16; Ex. 1008 ¶ 62 (opining that writing queries into a script program was a common and routine task for one of ordinary skill in the art, and sending the script program from a central computer to a remote home device was also routine). We are, therefore, persuaded that the teaching of Cohen’s processor selecting the queries from the database in combination with the knowledge of sending script programs that include queries such as those disclosed in Cohen is no more than the combination of known elements according to known methods and yielding

no more than predictable results. *See KSR*, 550 U.S. at 416.

Patent Owner's arguments are insufficient to overcome this finding. For example, Patent Owner identifies no evidence that improving the digital files in Cohen by including script programs with the queries or instructions was beyond the level of an ordinarily skilled artisan. *See Leapfrog*, 485 F.3d at 1162. Nor has Patent Owner shown evidence that including script programs was not known or unpredictable.

ii. Secondary Device Limitation

Patent Owner contends that Cohen does not teach "speech recognition" at the "secondary device." PO Resp. 49. According to Patent Owner, the speech recognition disclosed in Cohen is located within interface server 530, which corresponds to the primary device, not the secondary device. *Id.* Furthermore, Patent Owner challenges Petitioner's assertion that the user's computer in Cohen would include speech recognition because Cohen teaches away from localizing speech recognition at the user's computer. *Id.* at 49–50.

First, the claim does not require that the speech recognition functionality be located in the secondary device. Claim 1 recites that the secondary device comprises a "user interface." Ex. 1001, 21:27–30. The recited "user interface" is "adapted to receive input responses from said individual and convert said input responses . . . *through* speech recognition." *Id.* (emphasis added). The speech recognition process, however, does not have to be performed entirely by the "user interface"; the user interface only needs to be adapted to convert input responses "through" speech recognition.

The claim language is broad, but reasonably interpreted to encompass a computer process,⁷ running elsewhere, that recognizes the spoken words such that the user interface may use the data representing those words to convert the response into a digital file. Neither the secondary device nor the user interface is tasked explicitly with the speech recognition functionality. This interpretation is confirmed by the written description of the '469 patent, which describes an embodiment in which voice responses are sent to the server, which includes a “voice recognition component” for interpreting the verbal responses. *See* Ex. 1001, 20:47–56; *see also* *EPOS Techs. Ltd., et al., v. Pegasus Techs. Ltd.*, 766 F.3d 1338, 1343 (Fed. Cir. 2014) (concluding that the district court erred in importing limitations unsupported by the broader claim language and a variety of embodiments described in the specification). We are persuaded that the “convert . . . through speech recognition” language in the claim, when given its broadest reasonable interpretation, encompasses the second embodiment described in the specification of the '469 patent. Accordingly, we are not persuaded by Patent Owner’s contention that Cohen does not teach the secondary device because it discloses speech recognition being performed at interface server 530.

Furthermore, we do not agree with Patent Owner’s contention that Cohen teaches away from speech recognition at the user’s computer. To be

⁷ *See* *Definition “speech recognition,”* ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY, 1992 (Ex. 3001); *see also* Ex. 1001, 12:18–29 (“audio processor chip 120 further has built in speech recognition functionality for recognizing responses spoken into the microphone”).

sure, we find no evidence or argument by Patent Owner that a person of ordinary skill would not have known the technique of locating speech recognition functionality at a personal computer or that the use of that technique would yield unpredictable results. The arguments for Cohen teaching away from the use of the technique are directed, instead, to two wholly unpersuasive assertions: (1) that speech recognition at the user's computer would increase costs and alter the principle of operation; and (2) that Cohen teaches the personal computer use for hearing impaired patients, and, thus, that patients would not use a speech synthesis program. *Id.* at 50–51.

As to increasing costs, Patent Owner relies on the Declaration of Dr. David, who asserts that costs would increase. PO Resp. 50 (citing Ex. 2009 ¶ 115). There is no corroborating factual support for this assertion and no explanation as to the magnitude of such costs such that a person of ordinary skill in the art would be deterred from making the speech recognition functionality available at the user's computer. *See* 37 C.F.R. § 42.65(a) (unsupported expert testimony may be given little to no weight). In any event, we find Patent Owner's argument of increased cost unpersuasive because whether such costs actually would occur is irrelevant to the analysis of whether a person of ordinary skill in the art would have implemented the known technique of locating speech recognition functionality at the user's computer with predictable results. *See, e.g., KSR*, 550 U.S. at 417 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill”); *Orthopedic Equip. Co. v. United States*, 702 F.2d

1005, 1013 (Fed. Cir. 1983) (“[T]he fact that the [prior art] would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination. Only the latter fact is telling on the issue of nonobviousness.”).

Regarding whether the principle of operation would change, Patent Owner again relies on the Declaration of Dr. David, who asserts conclusorily and without any corroborating factual support that Cohen teaches that speech recognition “should not be located at the secondary device.” PO Resp. 50 (citing Ex. 2009 ¶ 115). The cited paragraph of the Declaration of Dr. David does not cite any passage in Cohen or offer any explanation as to how the basic principle of operation of Cohen would be altered. We are, therefore, not persuaded that Patent Owner has shown sufficiently how Cohen’s principle of operation would be altered by providing a known technique of speech recognition at the user’s computer (rather than a central server).

Finally, Patent Owner argues that the characterization of Cohen’s user computer teaches away from that computer incorporating speech recognition functionality. PO Resp. 51. In particular, Patent Owner argues that because Cohen discloses that such a computer would be “reserved for patients with ‘hearing problem[s],’” the use of a speech synthesis program would be unlikely. *Id.* We do not agree with this characterization of Cohen’s teachings. First, Cohen explicitly allocates the use of a personal computer to a broader category of users (e.g., “more sophisticated patients”). Ex. 1002, 4:16–26. Second, Cohen states that the personal computer embodiment is “particularly useful for patients having a hearing problem.” *Id.* at 15:8–13.

This statement in Cohen in no way limits the embodiment to patients with hearing problems. Furthermore, that the personal computer would be useful for those patients does not negate the use of speech recognition functionality. There is no distinction in Cohen between hearing difficulty and speech difficulty. The speech recognition functionality would be less useful for the latter, but not necessarily the former. The argument of unlikely speech synthesis seems illogical, and, in any event, is not commensurate with the scope of the claims, which recites speech recognition, not speech synthesis.

4. *Conclusion of Unpatentability Regarding Claim 1*

Having considered the evidence and arguments presented regarding Petitioner's assertion of unpatentability of independent claim 1, together with the evidence and arguments presented by Patent Owner to challenge the assertion, we conclude that Petitioner has proven by a preponderance of the evidence that claim 1 is unpatentable over Cohen and Wahlquist.

5. *Analysis of Evidence and Arguments Presented Regarding Claims 2 and 5–10*

Petitioner has shown that Cohen discloses the further limitations recited in claims 2 and 5–10. For example, Petitioner has shown sufficiently that Cohen teaches: a voice generator 22 (corresponding to the “audio processor” recited in claim 2); interface module 21A (corresponding to the “audio processor” recited in claim 5); server client communication 550 (corresponding to the “transmitter” recited in claim 6); database server 560 (corresponding to the “server” recited in claim 7); and outpatient subsystem 12, such as a telephone or personal computer (corresponding to the “secondary device” recited in claim 8 and the “output” and “input” of claim

9). Pet. 25–30.

Petitioner also has shown that the combination of Cohen and Wahlquist shows sufficiently the limitations recited in claims 7 and 10. Specifically, Wahlquist has been shown to teach that the server is adapted to generate computer programs as required by claim 7 and that the computer programs comprise script programs as required by claim 10. Pet. 28, 30–31.

Patent Owner did not challenge Petitioner’s assertions of unpatentability with regard to the additional limitations found in dependent claims 2 and 5–10. Having reviewed Petitioner’s evidence of unpatentability for these dependent claims, we conclude that Petitioner has proven by a preponderance of the evidence that claims 2 and 5–10 are unpatentable over Cohen and Wahlquist.

E. ASSERTED GROUND BASED ON COHEN, WAHLQUIST, NEUMANN, AND JACOBS

The second challenge in the Petition maintains that the “secondary device” is taught by Neumann and Jacobs. *See, e.g.*, Pet. 24 (identifying bedside station 12 of Neumann and the cellular telephone of Jacobs as disclosing the “secondary device”). In particular, Petitioner highlights the evidentiary value of Neumann and Jacobs in showing that although Cohen describes the speech recognition and synthesis functions at a central computer, Neumann and Jacobs are evidence that it was known at the time of the invention to include these functions at a user computer or interface. Pet. 13–14. Neumann, for example, describes including a speaker and microphone at a bedside station to communicate with a remote central station (Pet. 13; Ex. 1008 ¶ 74), while Jacobs describes including a feature extraction at a cellphone (Pet. 14).

1. Additional Arguments Regarding the Combination of Cohen, Wahlquist, Neumann, and Jacobs

Patent Owner argues that the combination of Cohen, Wahlquist, Neumann, and Jacobs does not teach or suggest the “primary device” and “secondary device” limitations recited in claim 1. PO Resp. 51–55. As for the “primary device,” Patent Owner repeats the same arguments and evidence presented with regards to the Cohen and Wahlquist combination, discussed above. PO Resp. 52. For the same above-stated reasons, we are not persuaded by Patent Owner’s arguments that the combination of Cohen, Wahlquist, Neumann, and Jacobs does not disclose the “primary device.”

Regarding the “secondary device,” we agree with Patent Owner that Neumann does not teach “speech recognition.” PO Resp. 53 (citing Ex. 2011, 304:11–16 (Dr. Stone admitting that Neumann does not disclose speech recognition functionality)). Petitioner’s arguments and evidence that Neumann teaches one of the first steps involved in speech recognition are insufficient to show that Neumann teaches or suggests the speech recognition functionality. Pet. Reply 12. Petitioner presents no argument or evidence for how disclosing the first step of speech recognition teaches or suggests the *whole* of the functionality, particularly where Neumann’s audio is used for two-way communications without Petitioner pointing out how Neumann’s system involves speech recognition anywhere or in any way. At best, Neumann suggests that the audio is digitized so that it can be transmitted over the same communication network as data and video. See Ex. 1004, 2:35–42.

As to whether Jacobs also fails to teach the “secondary device,” we do not agree with Patent Owner. The issue here focuses on whether the

location of the Jacobs word decoder at the central communications center defeats Petitioner's contention that Jacobs teaches or suggests speech recognition functionality, which Patent Owner argues must occur at the secondary device. *See* PO Resp. 54–55 (arguing that feature extraction element 22, identified in the Petition, does not perform, alone, speech recognition because it does not have any word decoding capabilities). Again, we do not find persuasive the argument that under the broad, but reasonable interpretation of the claim language, claim 1 requires that the speech recognition functionality be located at the secondary device. We incorporate here the reasons explained above with regard to Cohen's disclosure of speech recognition.

Moreover, Petitioner points out, and we agree, that Jacobs discloses an embodiment in which the speech recognition functionality is implemented at the handset. Pet. Reply 13 (citing Ex. 1005, 8:32–45). Although this embodiment is identified for use with a “relatively small vocabulary size” (*id.*), we find no claim limitation requiring any specific size of vocabulary. Accordingly, we are not persuaded by Patent Owner's arguments that Jacobs fails to teach or suggest the “secondary device,” as recited in claim 1.

Patent Owner does not argue any further limitations or evidence presented with regards to the asserted combination of Cohen, Wahlquist, Neumann, and Jacobs. Having reviewed the Petition, Patent Owner Response, and Reply, together with the supporting evidence, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is obvious over the combination of Cohen, Wahlquist, and Jacobs.

With regard to the dependent claims, Petitioner does not rely on

Neumann and Jacobs as teaching or suggesting any of the additional limitations recited in dependent claims 2 and 5–10. Patent Owner does not argue separately these dependent claims concerning the combination of Cohen, Wahlquist, and Jacobs. Having reviewed the evidence presented by Petitioner regarding these dependent claims, as addressed previously, we conclude that Petitioner has proven by a preponderance of the evidence that dependent claims 2 and 5–10 are obvious over the combination of Cohen, Wahlquist, and Jacobs.

F. CHALLENGE OF DECLARANT’S TESTIMONY

Finally, Patent Owner argues that Petitioner’s declarant (Dr. Robert Stone) performed an obviousness analysis improperly by “us[ing] the claims of the Bosch patents as a template to try and fit combinations of references into the claims” and “improperly used the teachings of the Bosch specifications to identify the goals and motivations for combining the prior art.” PO Resp. 19 (citing Ex. 2011, 314:5–20, 256:25–257:11, 313:1–20). Hence, Patent Owner argues that Dr. Stone’s analysis is improperly based on hindsight reasoning. However,

[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.

In re McLaughlin, 443 F.2d 1392, 1395 (CCPA 1971).

Patent Owner does not indicate how Dr. Stone’s analysis relies on knowledge that was beyond the level of ordinary skill in the art at the time

the claimed invention was made. Furthermore, Dr. Stone opines regarding reasonable rationales for the asserted combinations. We have analyzed above, and determined to be unpersuasive, Patent Owner's challenges to the asserted motivation to combine Cohen and Wahlquist, and we need not repeat our determination. We do not see evidence that the proffered rationale for the combination of the references or the knowledge applied in implementing the teachings of Cohen, Wahlquist and Jacobs were gleaned only from the disclosure of the '469 patent or were outside of the level of ordinary skill in the art. Accordingly, we decline to disregard Dr. Stone's opinions on this basis, and, instead, we have determined the weight to give the proffered testimony on an issue-by-issue basis.

G. MOTIONS TO EXCLUDE

Patent Owner seeks to exclude paragraphs 51–62 of Exhibit 1022 (testimony from Dr. Stone regarding whether Wahlquist is analogous art). Paper 54, 1. We do not rely on the disputed evidence in rendering our Decision. Therefore, Patent Owner's motion to exclude is dismissed as moot.

H. MOTION FOR OBSERVATION

Patent Owner's observations are directed to the cross-examination testimony of Dr. Stone (Ex. 2011), who was cross-examined after Petitioner filed its Reply. We have considered Patent Owner's observations and Petitioner's responses in rendering our decision, and have accorded the testimony the appropriate weight as explained above. *See* Paper 53, 1–8.

III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 2, and 5–10 are unpatentable:

- a) under 35 U.S.C. § 103 over Cohen and Wahlquist; and
- b) under 35 U.S.C. § 103 over Cohen, Wahlquist, and Jacobs.

This is a final written decision of the Board under 35 U.S.C. § 318(a). Parties to the proceeding seeking judicial review of this decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IV. ORDER

Accordingly, it is hereby:

ORDERED that, as set forth in Section II above, claims 1, 2, and 5–10 of the '469 patent have been shown to be *unpatentable*.

FURTHER ORDERED, that Patent Owner's Motion to Exclude is *dismissed* as moot.

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

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Patent 7,587,469 B2

PETITIONER:

Daniel W. McDonald
Andrew J. Lagatta
William Schultz
Jeffrey Blake
MERCHANT & GOULD, P.C.
80 South 7th St., Suite 320
Minneapolis, MN 55402
dmcDonald@merchantgould.com
alagatta@merchantgould.com
wschultz@merchantgould.com
jblake@merchantgould.com

PATENT OWNER:

Don Daybell
Davin M. Stockwell
ORRICK, HERRINGTON & SUTCLIFFE LLP
2050 Main St., Suite 1100
Irvine, CA 92614
ddaybell@orrick.com
dstockwell@orrick.com