

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MYCROFT AI INC.,
Petitioner,

v.

VOICE TECH CORPORATION,
Patent Owner.

IPR2020-01739
Patent 9,794,348 B2

Before GEORGIANNA W. BRADEN, JOHN F. HORVATH, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

HORVATH, *Administrative Patent Judge*.

JUDGMENT
FINAL WRITTEN DECISION
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Mycroft AI Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 2, 3, 6, 7, 11–14, 18, 19, 23–26, 30, and 31 (“the challenged claims”) of U.S. Patent No. 9,794,348 B2 (Ex. 1001, “the ’348 patent”). Paper 1 (“Pet.”), 2. Voice Tech Corporation (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Upon consideration of the Petition and Preliminary Response, we instituted *inter partes* review of all challenged claims on all grounds raised. Paper 7 (“Dec. Inst.”). Patent Owner filed a Response to the Petition (Paper 9, “PO Resp.”), Petitioner filed a Reply (Paper 10, “Pet. Reply”), and Patent Owner filed a Sur-Reply (Paper 11, “PO Sur-Reply”). An oral hearing was held on February 4, 2022, and the hearing transcript is included in the record. *See* Paper 18 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(b). This is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, we find Petitioner has demonstrated by a preponderance of evidence that claims 2, 3, 6, 7, 11–14, 18, 19, 23–26, 30, and 31 of the ’348 patent are unpatentable.

B. Real Parties-in-Interest

Petitioner and Patent Owner identify themselves, respectively, as the only real parties-in-interest. Pet. 74; Paper 4, 2.

C. Related Matters

Petitioner and Patent Owner identify the following as matters that can affect or be affected by this proceeding: *Voice Tech Corp. v. Mycroft AI*

Inc., 4:20-cv-00111 (W.D. Mo.); *Mycroft AI Inc. v. Voice Tech Corp.*, 4:20-cv-00662 (W.D. Mo.); *Unified Patents v. Voice Tech Corp.*, IPR2020-01018 (PTAB Dec. 13, 2020) (“the ’1018 IPR”) (challenging claims of related U.S. Patent No. 10,491,679). Pet. 74; Prelim. Resp. 1. In addition, Petitioner and Patent Owner identify the following U.S. Patent Application Nos. as pending applications that can affect or be affected by this proceeding: 15/704,871; 16/655,047; 16/655,054; 16/655,061; 16/677,351; 16/677,332; 16/677,369; 16/710,539; 16/710,692; 16/896,673; 16/896,693; and 16/896,743. Pet. 74; Prelim. Resp. 1.

D. Evidence of Record¹

Reference		Effective Date	Exhibit
McConnell	WO 2005/074634 A2	Aug. 18, 2005	1004
Roese	WO 03/075125 A2	Sep. 12, 2003	1005
Balakrishnan	US 6,233,559 B1	May 15, 2001	1006
Wong	US 2006/0235700 A1	Oct. 19, 2006	1007

E. Instituted Challenges to Patentability

We instituted review on the following challenges:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
3, 7, 13, 14, 19, 25, 26, 31	102(b) or 103(a)	McConnell
2, 6, 11, 12, 18, 23, 24, 30	103(a)	McConnell, Roese
3, 7, 13, 14, 19, 25, 26, 31	103(a)	Balakrishnan, Wong

¹ Petitioner also relies on the Declarations of Bruce McNair (Exs. 1003, 1013). Patent Owner relies on the Declaration of Michael Caloyannides, Ph.D. (Ex. 2002).

F. The '348 Patent

The '348 patent is directed to a system and method “for using voice commands from a mobile device to remotely access and control a computer.” Ex. 1001, 1:8–11. The mobile device can be “a cellular phone, smart phone, touch-screen device, personal digital assistant, tablet device, notebook device, laptop device, or other suitable mobile device.” *Id.* at 2:41–45. The system includes general purpose computer 104 having “mobile device interface 106, audio command interface 108, operating system interface 110, and native applications 112.” *Id.* at 2:48–53.

“Mobile device interface 106 receives voice or data information from mobile device 102” by “monitor[ing] communications medium 114,” such as a public switched telephone network (PSTN) or local area network, using a digital subscriber line (DSL) modem, cable modem, or other suitable network connection, and “determin[ing] whether mobile device 102 has transmitted data to general purpose computer 104.” *Id.* at 3:23–42. Mobile device interface 106 “perform[s] voice recognition and other suitable processing” and “provide[s] voice data to audio command interface 108.” *Id.* at 3:61–64.

Audio command interface 108 “receive[s] data from mobile device interface 106 and detect[s] audio commands in the data.” *Id.* at 3:55–58. Audio command interface 108 can “provide a list of available commands to the person using mobile device 102,” “determine whether voice data corresponds to one of two or more predetermined audio commands,” and execute detected commands. *Id.* at 3:65–4:5. Audio command interface 108 can be implemented as a state machine having “one or more states, such that certain audio commands are available depending upon the state of audio command interface 108.” *Id.* at 4:8–11.

“Operating system interface 110 allows audio command interface 108 to activate various operating system commands” such as “a search command, a run command, [or] a program list command.” *Id.* at 4:17–19, 6:44–48. Native applications 112 are applications that can be “accessed and controlled at general purpose computer 104,” and can interface with audio command interface 108 “by installing an applications program interface (API) or other suitable data into audio command interface 108 that identifies native applications 112 and provides available commands for audio command interface 108 to interface with native applications 112.” *Id.* at 4:36–44. Figure 4 of the ’348 patent is reproduced below.

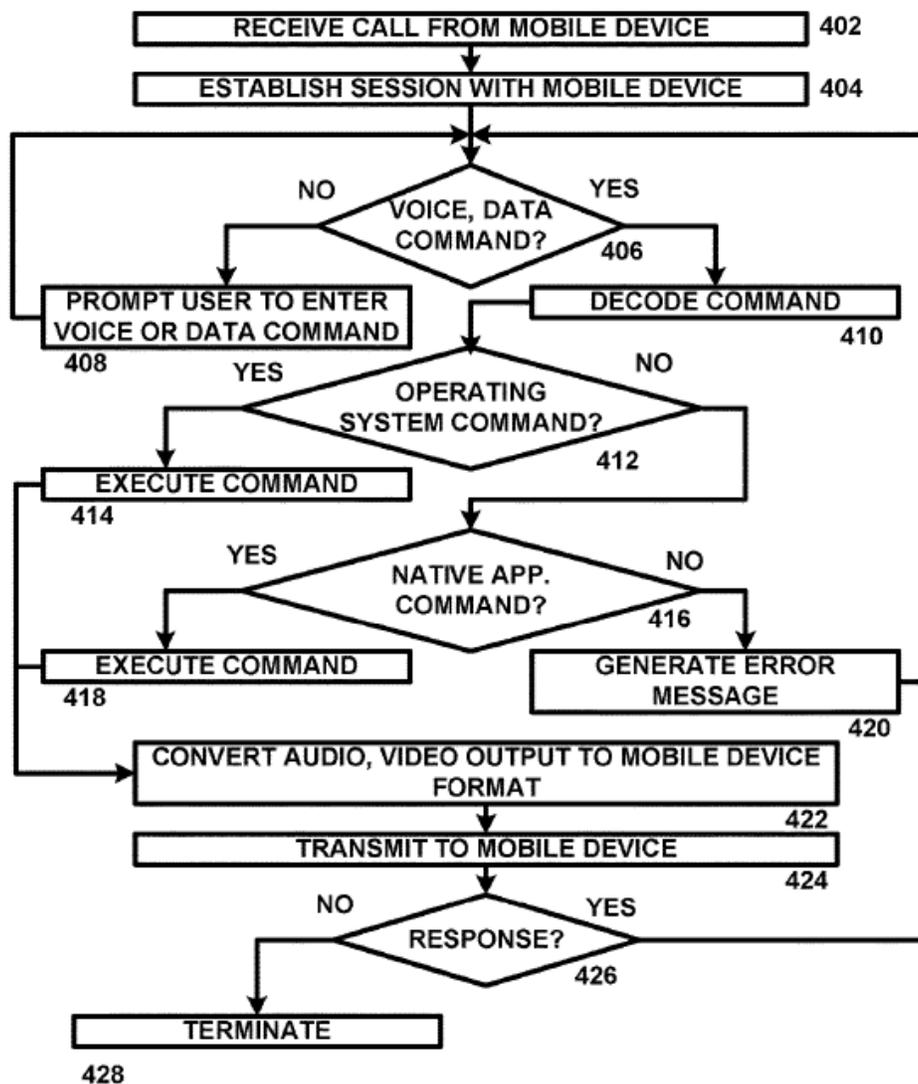


Figure 4 of the '348 patent is a flow chart “for using voice commands from a mobile device to remotely access and control a general purpose computer.” *Id.* at 7:60–63. The method begins at 402/404 “where a call is received from a mobile device” and “a session is established with the mobile device.” *Id.* at 7:63–65, 8:4. “At 406, it is determined whether a voice or data command has been received,” and if so, at 410 “the voice or data command is decoded.” *Id.* at 8:20–21, 8:33–35. “At 412, it is determined whether the command is an operating system command,” and if so, at 414 “the operating

system command is executed.” *Id.* at 8:42–46. If the received command is not an operating system command, at 416 “it is determined whether a native application command has been received,” and if so, at 418 “the command is executed.” *Id.* at 9:49–52, 9:56–59. Otherwise, “the method proceeds to 420 where an error message is generated.” *Id.* at 9:60–62.

Regardless of whether an operating system or native application command is executed at steps 414 or 418, respectively, “[a]t 422, the audio output data, video output data, or audio and video output data, generated at the computer is converted to a mobile device format.” *Id.* at 9:4–6. At 424, the converted data is “transmitted to the mobile device.” *Id.* at 9:21–23. “The method then proceeds to 426,” where “it is determined whether a response has been received from the mobile device.” *Id.* at 9:36–39. “If no response has been received, the method proceeds to 428 and terminates.” *Id.* at 9:39–40. Conversely, if a response is received, “the method then returns to 406.” *Id.* at 9:47–48.

G. Illustrative Claim

All of the claims of the ’348 patent are independent claims. We select claim 3 as a representative claim, and reproduce it below.

3. A method of remotely accessing and controlling a computer from a mobile device, comprising:
 - receiving audio data from the mobile device, at the computer, at an audio command interface;
 - the audio command interface decodes the audio data into a command;
 - the audio command interface selects, from two or more applications, one application the audio command interface decides is the appropriate application to execute at least one process in response to the command, wherein in deciding which application to select the audio command interface

remembers at least one process that was executed by at least one application;

executing with the selected application the at least one process in response to the command;

generating output data in response to the selected application executing the at least one process; and

transmitting the output data to the mobile device.

Ex. 1001, 10:50–67.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In our Institution Decision, we preliminarily identified a person of ordinary skill in the art as someone with a bachelor’s degree in electrical engineering, computer science, or a related field, and approximately three years of experience working in the field of voice activated computing. Dec. Inst. 8.

Petitioner identifies a person of skill in the art as someone that would have had “a bachelor’s degree or a more advanced degree in electrical engineering, computer science, or a related field, and one or more years of experience with computer audio input systems.” Pet. 9 (citing Ex. 1003 ¶¶ 31–34). Although Petitioner continues to advocate for that definition, Petitioner agrees that the preliminary definition we provided in our Institution Decision is “appropriate.” Pet. Reply 1. Patent Owner does not. Although Patent Owner does not dispute the technical education required by a person of ordinary skill in the art, Patent Owner argues such a person would have needed at least 5 years of experience in a different field, namely, the field of “using voice commands from a mobile device to remotely access

and control a computer.” PO Resp. 5 (citing Ex. 1001, 1:8–13; Ex. 2002 ¶ 41).

The field of endeavor is determined “by reference to explanations of the invention’s subject matter in the patent application, including the embodiments, function, and structure of the claimed invention.” *In re Bigio*, 381 F.3d 1320, 1325–26 (Fed. Cir. 2004). The field, however, “is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field.” *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016). The ’348 patent broadly identifies its field of invention as “computer operating systems” and narrowly as “using voice commands from a mobile device to remotely access and control a computer.” Ex. 1001, 1:8–13. But the patent discloses the mobile device can be a “laptop” connected to the remote computer via a *wired* communication medium 114 and a cable or DSL modem. *Id.* at 2:41–47, 3:5–8, 5:7–28, 7:60–9:67. We discern no difference between controlling a remote computer using voice commands received from a laptop connected to the remote computer via a modem and wired communications network or using voice commands received from a similarly connected and non-mobile desktop computer. Thus, we find the field of endeavor to be voice activated computing rather than voice activated computing using a mobile device.

Given that field of endeavor and the level of skill in the art illustrated in the ’348 patent and the prior art of record, we find a person of ordinary skill in the art would have had a bachelor’s degree in electrical engineering, computer science, or a related field and approximately three years of work experience in voice activated computing. That said, our findings below do not depend on a precise definition of either the field of invention or the required level of experience in that field and would not have changed had we

adopted either Petitioner's or Patent Owner's definition of a person of ordinary skill in the art.

B. Claim Construction

In *inter partes* reviews, we interpret a claim “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).” 37 C.F.R. § 42.100(b) (2020). Under that standard, the “words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citation omitted). Moreover, that meaning applies “unless the patentee demonstrated an intent to deviate from [it] . . . by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *Teleflex, Inc. v. Ficosa N. America Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002); *see also Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). Only those claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

1. Command

In our Institution Decision, we questioned Petitioner's ability to demonstrate the unpatentability of certain claims over Balakrishnan and Wong because we questioned whether “Balakrishnan's audio command interface decodes audio data into a command by outputting a phoneme network” as Petitioner contends. Dec. Inst. 38. Petitioner argues the term “command” has its plain and ordinary meaning and does not require express construction and that Balakrishnan's “phoneme network is a command” under the plain and ordinary meaning of that term. Pet. Reply 3, 19. Patent

Owner argues the term “command” means “a signal that initiates a predetermined type of computer operation that is defined by an instruction,” and Balakrishnan’s “phoneme network . . . does not disclose or teach a command.” PO Resp. 16, 43.

We need not resolve this dispute or construe the meaning of the term “command” because we determine that all challenged claims are unpatentable over McConnell, either alone or in combination with Roesse, and that determination does not depend on the meaning of the term “command.” *See Nidec*, 868 F.3d at 1017.

2. *audio command interface (ACI)*

In our Institution Decision, we made a preliminary finding that this term has its plain and ordinary meaning and does not require express construction. Dec. Inst. 9–12. We made a similar finding in the ’1018 IPR. *See Unified Patents, LLC v. Voice Tech. Corp.*, IPR2020-01018, Paper 46, 13–15 (PTAB, Dec. 13, 2021).

Patent Owner disagrees with that preliminary construction, and argues the term should be construed to mean:

a functional component of a computer, which may be implemented in hardware, software, or a suitable combination of hardware and software, that enables a mobile device to access and control one or more operating systems and/or one or more applications at the computer without requiring voice command interoperability between the mobile device and each separate operating system or application; *wherein any such combination of hardware and/or software must be contiguous.*

PO Resp. 9 (emphasis added). Patent Owner argues this construction, which adds the “wherein” clause to the construction Patent Owner proposed in its Preliminary Response and in the ’1018 IPR, is supported by the claim language, Specification, prosecution history, and dictionary definition of

“interface.” *Id.* at 9–13 (quoting Ex. 1001, 2:48–55, 4:55–67, 7:46–56; Ex. 1002, 379–380; Ex. 2002 ¶ 47); *see also* Prelim. Resp. 8; the ’1018 IPR, Paper 46 at 13.

Petitioner agrees with our preliminary finding that this term does not require express construction. Pet. Reply 1–2. Petitioner also argues that Patent Owner added the “wherein” clause “[t]o escape prior art” and that the hardware and/or software that makes up the audio command interface need not be contiguous because the Specification discloses that “‘hardware’ can include a combination of discrete components” and “‘software’ can include . . . software structures operating in two or more software applications or on two or more processors.” *Id.* at 3 (quoting Ex. 1001, 2:50–65).

Upon consideration of all of the arguments and evidence provided by the parties, we maintain our preliminary finding that the term “audio command interface” has its plain and ordinary meaning and does not require express construction. We reject Patent Owner’s construction because neither the Specification nor prosecution history define or limit the meaning of an audio command interface. The Specification discloses audio command interface 108 is a component of “general purpose computer 104” that can be implemented as a combination of hardware and/or software, however, all components of a general-purpose computer can be implemented as a combination of hardware and/or software. Ex. 1001, 2:31–34, 2:48–55, Fig. 1. Thus, this portion of Patent Owner’s construction does not limit the plain and ordinary meaning of the term “audio command interface.”

The Specification does not limit the audio command interface to one that enables a *mobile* device to control a computer. Although the Specification discloses “system 300 provides an audio command interface that allows a person to use voice commands from mobile device 102 to

access and control native applications or operating system functions,” system 300 is an “exemplary” embodiment. Ex. 1001, 6:4–6, 7:46–59. Moreover, all of the claims *expressly* require the audio command interface to receive commands from a mobile device. *See, e.g., id.* at 10:18–21 (claim 1), 10:35–38 (claim 2), 10:52–55 (claim 3), 11:3–6 (claim 4), 11:25–29 (claim 5), 11:39–43 (claim 6). This strongly suggests the audio command interface is not *limited* to receiving commands from a mobile device. *See Phillips*, 415 F.3d at 1314 (explaining that “the context in which a term is used in the asserted claim can be highly instructive,” for example, a claim referring to steel baffles “strongly implies that the term ‘baffles’ does not inherently mean objects made of steel”); *see also Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). Lastly, the Specification discloses audio command interface 108 “receives data from mobile device interface 106,” which includes network interface 202, which “can monitor a modem, such as a PSTN modem, cable modem, DSL modem, or other suitable modems for incoming data traffic that indicates mobile device 102 *or other suitable devices* are attempting to interface with general purpose computer 104.” Ex. 1001, 3:54–55, 5:7–10, 5:18–23, Figs. 1, 2 (emphasis added). Thus, the audio command interface can receive commands from devices other than mobile device 102.

Finally, neither the Specification nor prosecution history limits the audio command interface to one that controls a computer without voice-command interoperability. Although the Specification distinguishes system 100 over prior art systems that require “voice command interoperability,” system 100 is an “exemplary” embodiment and the Specification does not

identify audio command interface 108 as the component that distinguishes system 100 over the prior art. *Id.* at 2:31–34, 4:55–67. Moreover, although the applicant argued during prosecution that the then pending claims distinguished over the prior art because they recited an audio command interface that eliminated the need for “voice command interoperability,” those claims were subsequently abandoned after further rejection by the Examiner. *See* Ex. 1002, 477–481 (claims 1–8 reciting an audio command interface), 416 (continued rejection of claims 1–8), (cancellation of claims 1–8).

Accordingly, for all of the reasons discussed above, we find the term “audio command interface” has its plain and ordinary meaning and does not require express construction.

3. *The selecting/deciding limitation*

This limitation comes in two variations and requires the audio command interface to select an application or operating system (OS) that the audio command interface decides is the appropriate application or operating system to execute at least one process in response to a command. *See, e.g.*, Ex. 1001, 10:39–42, 13:37–42. The parties’ dispute does not depend on the different variations of this limitation but on what it means for the audio command interface to “decide” what is an appropriate application or operating system to execute a process in response to a command. *See* PO Resp. 22–23; Pet. Reply 6–8; PO Sur-Reply 3–6.

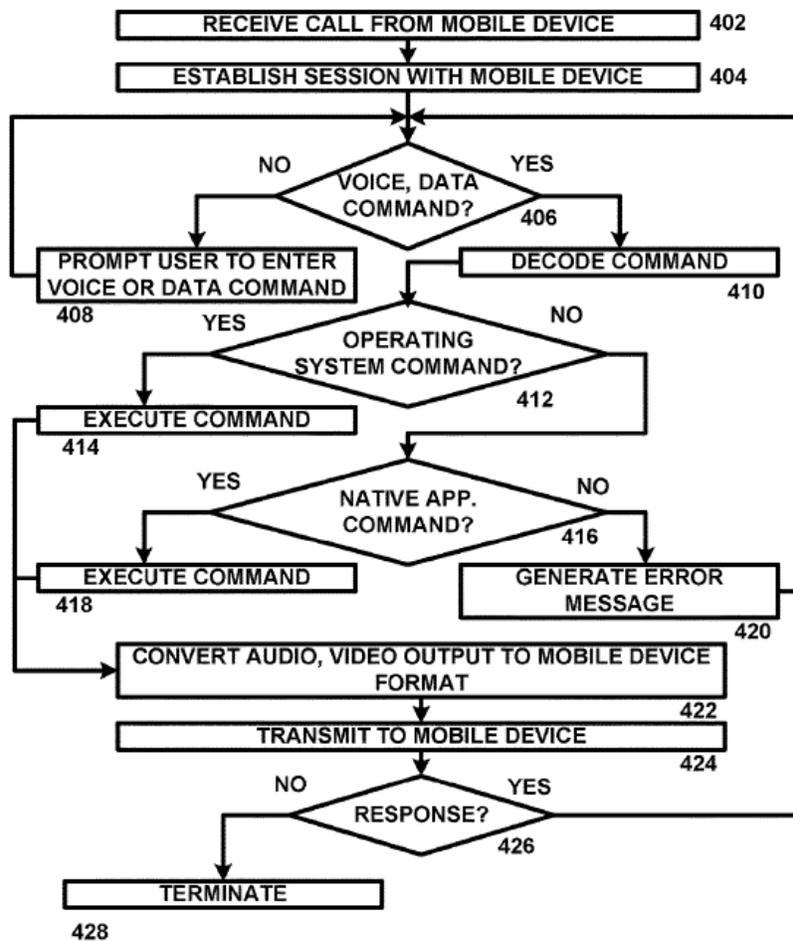
Petitioner argues this limitation means the audio command interface “accesses an appropriate (OS or other) application from two or more applications based on user-configured matching instructions.” Pet. Reply 7 (citing Ex. 1013 ¶ 22). Petitioner argues the audio command interface “can only make decisions based on parameters preconfigured by a human” and

the Specification supports this notion because it “repeatedly explains the ACI ‘match[es]’ voice data with ‘predetermined commands.’” *Id.* at 6–7 (quoting Ex. 1001, 3:65–4:2, 4:19–25, 6:17–19). Petitioner argues the prosecution history also supports this notion because (a) the Applicant indicated during prosecution that the selecting/deciding limitation is supported by paragraph 39 of the application, (b) paragraph 39 discloses using a spreadsheet “to find and view/play a document, spreadsheet, photographic image, audio recording, video recording, web page or other suitable data,” and (c) nothing in the application suggests that that spreadsheet contains “anything other than commands preconfigured by a user for matching with audio data.” *Id.* at 7 (citing/quoting Ex. 1002, 309, 931).

Patent Owner does not expressly construe the selecting/deciding limitation. *See* PO Sur-Reply 3–6. Instead, Patent Owner argues “the term ‘decides’ should be given its plain and customary meaning.” *Id.* at 6. However, Patent Owner implicitly construes the limitation by arguing that a prior art audio command interface “does not *decide* which operating system or application is the appropriate operating system or application to execute at least one process in response to the command” because it “is provided with specific instructions on what application will be used.” PO Resp. 22–23. Patent Owner argues the claimed “audio command interface decides what will be the appropriate operating system or application . . . and then . . . selects the appropriate operating system or application,” whereas the prior art interface “makes the decision by preconfiguring what application will be employed in response to a particular command.” *Id.* at 23.

The term “decide” does not appear in the Specification of the ’348 patent. The claims that recite the selecting/deciding limitation were added

during prosecution, and the applicant indicated both the “selecting” and “deciding” portions of the limitation were supported by, *inter alia*, paragraph 39 and Figures 3 and 4 of the application. Ex. 1002, 304, 309.² Figure 4 of the application is reproduced below.



The figure above is Figure 4 of the '348 patent. It discloses that when voice data representing a command is received (step 406) it is decoded to

² Figures 3 and 4 of the application are the same as Figures 3 and 4 of the '348 patent, and the disclosure in paragraph 39 of the application is the same as the disclosure in column 8, line 42 through column 9, line 3 of the '348 patent. Compare Ex. 1002, 930–931, 940–941, with Ex. 1001, 8:42–9:3, Figs. 3, 4.

recognize the command (step 410). Ex. 1001, 8:20–21, 8:35. Next, the audio command interface determines whether the command is an operating system command (step 412) or a native application command (step 416). *Id.* at 8:42–43, 9:49–52. If the command is an operating system command (e.g., a command to play a movie) it is executed. *Id.* at 8:43–50. This can be done because “a document [or] spreadsheet . . . can be used to find and view/play a . . . video recording.” *Id.* at 8:60–65.

The description of Figure 4 is consistent with other descriptions in the '348 patent indicating how a command is identified and executed. For example, the '348 patent discloses that when a user “state[s] the command ‘search,’” the audio command interface can “cause the search functionality of operating system interface 110 to be activated.” *Id.* at 4:25–32. The audio command interface knows to select the operating system to execute the search command because the audio command interface “can include a file of available operating system commands that can be matched with voice data.” *Id.* at 4:19–28. This is done by voice-to-command conversion module 302, which “receives voice data and determines whether the voice data matches one or more predetermined commands.” *Id.* at 6:16–19, Fig. 3.

Patent Owner provided a similar understanding of what it means for the audio command interface to “decide” which application or operating system to select during a discussion at the oral hearing. Patent Owner agreed that the Specification indicates that “comparing a list of available native commands to a received command” would be considered “a very basic decision.” Tr. 47:3–48:16. That colloquy involved a discussion of Figure 4 of the '348 patent, which describes determining whether a received command is an operating system or native application command and generating an error message when it is “not recognized as an available

operating system or native application command.” *Id.*; Ex. 1001, 9:49–66, Fig. 4.

For the reasons discussed above, we construe the selecting/deciding limitation to include “an audio command interface using instructions, which may be preconfigured, to identify and select the appropriate operating system or application to execute at least one process in response to a command.”

4. *The remembering limitation*

This limitation also comes in two variations and requires the audio command interface, in deciding which application or operating system to select, to remember at least one process that was executed by at least one application or operating system. *See, e.g.*, Ex. 1001, 10:59–61, 13:42–45. The parties’ dispute does not depend on the different variations but on what it means for the audio command interface to “remember” a process executed by an application or operating system in deciding which application or operating system to select to execute a process in response to a command. *See* Pet. 28–29; Pet. Reply 8; PO Resp. 16–18; PO Sur-Reply 6–7.

In our Institution Decision, we preliminarily construed this limitation to have its plain and ordinary meaning, and found that meaning included the audio command interface selecting an OS or application upon (1) recognizing a command in a command set that had been limited to the command set of the OS or application, (2) generating and/or displaying a list of the most recently run OS or applications, and (3) considering an OS or application stored in memory. Dec. Inst. 11–13. Petitioner agrees with that preliminary construction. Pet. Reply 8 (citing Ex. 1013 ¶ 33). Patent Owner argues the plain and ordinary meaning is limited to selecting an OS or application upon “consider[ing] at least one process in memory.” PO Resp.

16. Patent Owner argues this narrower construction is supported by the claims, Specification and prosecution history. *Id.* at 16–18 (quoting/citing Ex. 1001, 6:10–57, 10:56–62; Ex. 1002, 221–222, 266–267, 303–325; Ex. 2002 ¶ 49).³

Upon consideration of all of the evidence and argument submitted by the parties, we provide a slightly modified version of our preliminary construction. We start by noting that neither the term “remember” nor the remembering limitation appears in the Specification. When the limitation was added to new claims during prosecution, the Examiner rejected the new claims for lack of written description. Ex. 1002, 283–285, 305, 309. The applicant argued the remembering limitation was supported by paragraph 29 of the application, which discloses the audio command interface “can include one or more states, such as states based on an operating system function, native application, or other function being accessed and controlled.” *Id.* at 221–222 (quoting Ex. 1001, 6:24–28); *see also* Fig. 1. The applicant further argued that a person skilled in the art would have known from that disclosure that “because, in one embodiment, the audio command interface would have access to multiple states of application processes in memory . . . the audio command interface would consider at least one of those application processes when deciding which application to select.” *Id.* at 222. Finding this argument persuasive, the Examiner withdrew the written description rejection. *Id.* at 179–182. For this reason, we agree with Patent Owner that the audio command interface “remembers” at least one process that was executed by at least one application or OS when

³ Patent Owner quotes or cites paragraphs 29 and 30 of the application. These disclosures appear in column 6, lines 10–62 of the Specification. *Compare* Ex. 1001, 6:10–57, *with* Ex. 1002, 925–926.

deciding which application or OS to select by “consider[ing] at least one process stored in memory.” PO Resp. 18.

However, the audio command interface is not limited to that consideration because paragraphs 29 and 30 of the Specification support other ways the audio command interface can “remember” at least one process that was executed by at least one OS or application when deciding which OS or application to select. For example, paragraph 29 discloses the audio command interface can “limit the number of commands to a predetermined set of commands relevant to the operating system function or native application” that a user is currently accessing or controlling. Ex. 1001, 6:28–35. To do that, the audio command interface would need to “remember” not only which OS or application the user is currently accessing or controlling, but the previously executed process that limited the command set to commands for accessing or controlling that OS or application. Similarly, paragraph 30 of the Specification discloses the audio command interface can generate a list of recently run applications. *Id.* at 6:48–52. To do that, the audio command interface would have to “remember” the most recently run applications.

Accordingly, for the reasons discussed above, we construe the remembering limitation to mean the audio command interface selects an operating system (OS) or application to execute a process in response to a command by (1) recognizing the command in a limited command set for the OS or application, (2) generating a list of the most recently executed applications or OS commands, or (3) considering an OS or application stored in memory.

5. The location data limitation

This limitation also comes in two variations and requires the audio command interface to use location data in deciding which application or operating system to select. *See, e.g.*, Ex. 1001, 10:43–44, 16:32–34. In our Institution Decision, we preliminarily construed this limitation to mean “the audio command interface uses location data to determine whether an application can be selected for execution in response to a command.” Dec. Inst. 13–14. We did so because that is the meaning the applicant ascribed to the limitation during prosecution. *See* Ex. 1002, 305, 309 (adding claims containing the location data limitation), 283–285 (rejection of added claims for lack of written description), 221 (applicant argument that a person skilled in the art would have understood paragraph 32⁴ of the application to disclose the audio command interface decides which application to select by “us[ing] location data to decide if a particular application is allowed to be accessed at a particular location”), 179–182 (withdrawal of written description rejection). Neither party disputes our preliminary construction, which we maintain here.

C. Challenges Based on McConnell

Petitioner argues claims 3, 7, 13, 14, 19, 25, 26, and 31 are anticipated by or obvious over McConnell. Pet. 11–37; Pet. Reply 8–14. Patent Owner disagrees. PO Resp. 21–28; PO Sur-Reply 7–13. For the reasons discussed below, notwithstanding Patent Owner’s arguments to the contrary, we find Petitioner has established by a preponderance of evidence that claims 3, 7,

⁴ This paragraph corresponds to the disclosure in column 7, lines 10–29 of the ’348 patent. *Compare* Ex. 1001, 7:10–29, *with* Ex. 1002, 927.

13, 14, 19, 25, 26, and 31 are unpatentable as anticipated by or obvious over McConnell.

1. McConnell

McConnell discloses systems and methods “for operatively connecting a remote communications device with a computer by way of audio commands.” Ex. 1004 ¶ 23. McConnell’s computer 100 is configured via software and/or hardware as shown in Figure 3, which is reproduced below.

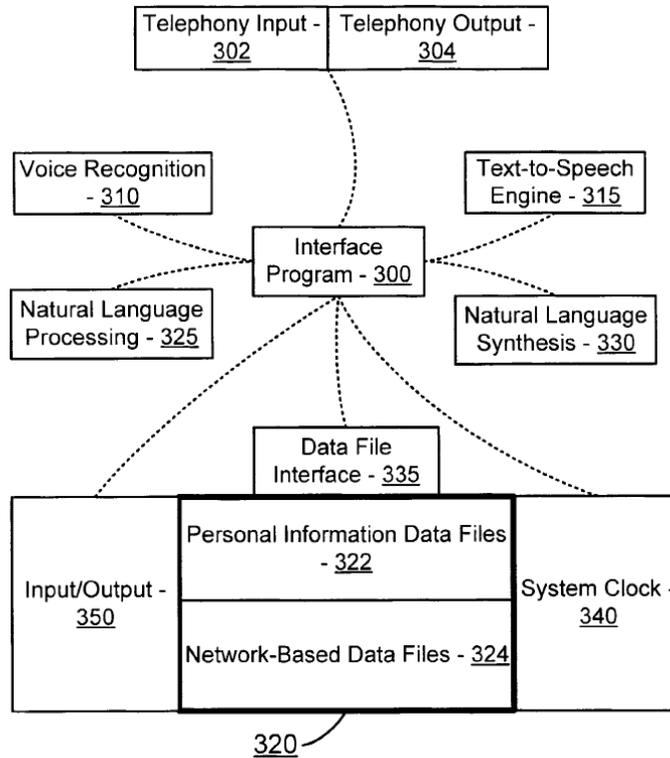
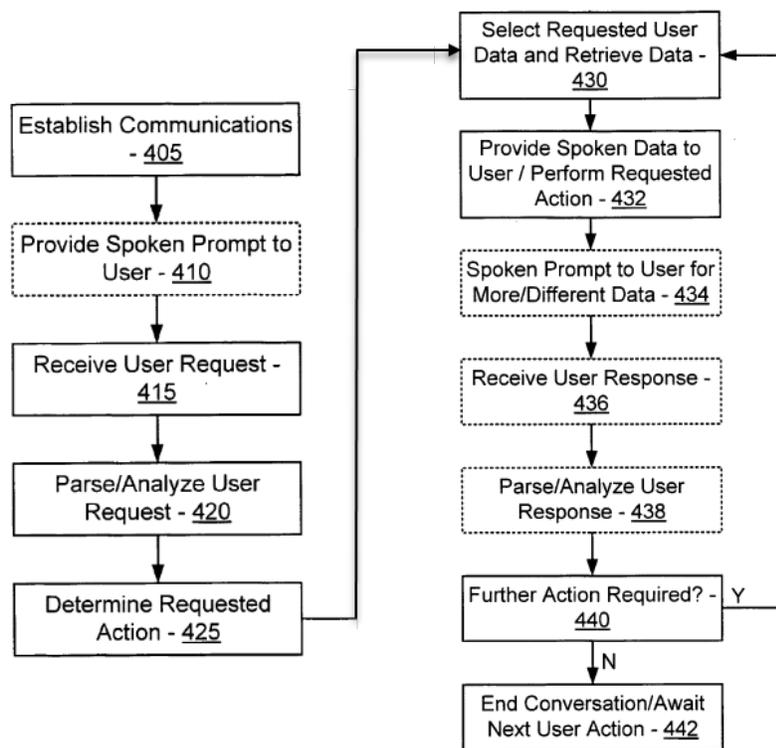


Figure 3 of McConnell illustrates the software and/or hardware configuration of McConnell’s computer 100. *Id.* ¶ 42. The configuration includes interface program 300 connected to telephony input 302, voice recognition 310, natural language processing 325, data interface 335, input/output (“I/O”) 350, natural language synthesis 330, text-to-speech engine 315, and telephony output 304. *Id.* ¶ 44. Telephony input 302 allows

“a user to communicate by way of spoken utterances or audio commands,” and telephony output 304 “output[s] electrical signals as sound for a user to hear.” *Id.* Voice recognition software 310 is used to decipher utterances received from telephony input 302. *Id.* ¶ 45. Text-to-speech engine 315 uses natural language synthesis module 330 to “generate[] spoken statements from electronic data[] that are then transmitted to the user.” *Id.*

“User data 320 comprises any kind of information that is stored or accessible to computer 100,” including data files 322 such as spreadsheets, databases, documents, and emails. *Id.* ¶ 46. Data files 322 may be accessible via telephony input 302 and output 304. *Id.* Interface program 300 may “be used in any computer 100 that is running any type of software components,” including “preexisting software applications that are part of, or accessible to, an operating system of computer 100.” *Id.* ¶ 50. Interface program 300 can be “modified and updated independently of any user data 320 or other software components.” *Id.*

Figures 4A–4C of McConnell “are flowcharts of an example method of user-initiated transaction[s].” *Id.* ¶ 16. Figures 4A and 4B, modified to show their connectedness, are reproduced below.



The figure above illustrates Figures 4A (left) and 4B (right) of McConnell, modified to show the connection between them. *Id.* Figs. 4A, 4B. At step 405, a user calls computer 100 using cellular telephone 208. *Id.* ¶ 72. At step 410, computer 100 optionally sends a spoken “prompt” to the user. *Id.* At step 415, computer 100 receives a user request. *Id.* ¶ 73. At steps 420 and 425, the user request is parsed and the required action is determined. *Id.* If the request is for existing information, interface program 300 selects and retrieves the information at step 430, and at step 432 either outputs a spoken answer via text-to-speech engine 315 or causes a desired action to occur. *Id.* ¶¶ 74–75. Steps 434–438 are “optional” steps that are only taken when a user response is needed based on the action taken or answer provided at step 432. *Id.* At step 442, computer 100 is placed in standby mode to await further user input. *Id.*

2. *Limitation by limitation analysis*

As discussed in § I.G, *supra*, all of the claims of the '348 patent are independent. Claims 3, 7, 13, 14, 19, 25, 26, and 31 are all challenged as unpatentable over McConnell and share many of the same limitations. Consequently, Petitioner analyzes these claims on a limitation-by-limitation rather than a claim-by-claim basis. *See* Pet. 16–37. We follow Petitioner's convention here.

a) *a system/method for accessing and controlling
a computer from a mobile device*

This limitation appears in all of claims 3, 7, 13, 14, 19, 25, 26, and 31. Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 16 (quoting Ex. 1004 ¶ 23). McConnell discloses or teaches a “system and method for operatively connecting a remote communications device with a computer,” where the remote communications device can be “a cellular telephone, wireless transceiver, microphone, wired telephone or the like [that] is used to transmit an audio or spoken command to a user's computer.” Ex. 1004 ¶ 23. Patent Owner does not dispute that McConnell discloses this limitation. *See* PO Resp. 21–28.

b) *a communications medium that couples
the mobile device to the computer*

This limitation appears only in claims 7, 25, 26, and 31. Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 17–18 (quoting Ex. 1004 ¶ 35). McConnell discloses or teaches “computer 100 is operatively connected to remote telephone 204 and/or cellular telephone 208 by way of network 120,” which is a communications medium. Ex. 1004 ¶ 35, Fig. 2C. Patent Owner does not dispute that McConnell discloses this limitation. *See* PO Resp. 21–28.

*c) receiving audio data from the mobile device,
at the computer, at an audio command interface*

This limitation appears in all of claims 3, 7, 13, 14, 19, 25, 26, and 31. Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 18–19 (citing Ex. 1004 ¶¶ 44, 73, Fig. 3). Petitioner identifies McConnell’s interface program 300, together with telephony input/output 302/304, voice recognition software 310, text-to-speech engine 315, natural language processing/synthesis modules 325/330, and data file interface 335 as an audio command interface. *Id.* (citing Ex. 1004, Fig. 3). McConnell discloses or teaches telephony input 302 “permits a user to communicate by way of spoken utterances or audio commands . . . with the computer 100.” Ex. 1004 ¶ 44, Fig. 3. Patent Owner does not dispute that McConnell discloses this limitation. *See* PO Resp. 21–28.

*d) the audio command interface decodes
the audio data into a command*

This limitation appears in all of claims 3, 7, 13, 14, 19, 25, 26, and 31. Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 19–21 (citing/quoting Ex. 1004 ¶¶ 73–74, Fig. 4A). McConnell discloses or teaches a received user request (step 415) “is parsed and/or analyzed to determine the content of the request” and to determine “the desired function corresponding to the user’s request” (steps 420/425). Ex. 1004 ¶ 73, Fig. 4A. These steps are performed by “the voice recognition module 310 and/or the natural language processing module 325.” *Id.* As noted above, Petitioner identifies these components as part of McConnell’s audio command interface. Pet. 18–19. Patent Owner does not dispute that McConnell discloses this limitation. *See* PO Resp. 21–28.

e) the audio command interface selects, from two or more applications, one application the audio command interface decides is the appropriate application to execute at least one process in response to the command

This is the first of two variations of the selecting/deciding limitation, discussed in § II.B.3, *supra*, and is recited in claims 3, 7, 19, and 31.

Notwithstanding Patent Owner's arguments to the contrary, discussed *infra*, Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 21–25 (citing Ex. 1004 ¶¶ 46–48, 50, 52, 59, 73, 75).

McConnell parses and analyzes a user's spoken request "to determine the content of the request" and "the desired function corresponding to the user's request." Ex. 1004 ¶ 73, Fig. 4A (steps 415–425). If the request is for "existing information," that information "is selected and retrieved by interface program 300." *Id.* ¶¶ 74–75, Fig. 4B (steps 425–430). The requested information can be "any kind of information that is stored or accessible to computer 100," including "a spreadsheet, database, document file, [or] email" that is "used in conjunction with programs such as Microsoft Outlook or Lotus Notes." *Id.* ¶¶ 46–47. We agree with Mr. McNair that a person skilled in the art would have known that to have been able to retrieve such disparate types of information, interface program 300 would have to have been able to select one application (e.g., Microsoft Word) among two or more applications. *See* Ex. 1003 ¶ 93.

Patent Owner argues McConnell does not disclose or teach this limitation because "the user preconfigures the data files 322–324 so that when a match is found . . . the interface program 300 is provided with specific instructions on what application will be used." PO Resp. 22–23 (citing Ex. 1004 ¶ 75) (emphasis omitted). Thus, Patent Owner argues, McConnell's interface program 300 "never makes a decision. . . . It simply

follows the instructions preconfigured by the user.” *Id.* at 23; PO Sur-Reply 7–11. We disagree with Patent Owner’s contentions, which implicitly construe the selecting/deciding limitation to exclude audio command interfaces that are programmed to identify which applications or operating systems to select in response to received commands, for the reasons discussed in § II.B.3, *supra*.

Moreover, we note that McConnell’s interface program 300 decides which application to select in the same manner as the audio command interface disclosed in the ’348 patent. For example, McConnell can use a command file to “stor[e] and access[] data,” where a command file is “a spreadsheet that allows a user to input commands to the computer 100 and to cause the interface program 300 to interface with an appropriate component to carry out the command.” Ex. 1004 ¶¶ 52, 57. The command file can be created using “a wizard, API or the like . . . to fill, for example, a standard template file.” *Id.* ¶ 60. The ’348 patent, similarly, teaches “installing an application program interface (API) or other suitable data into audio command interface 108 that identifies native applications 112 and provides available commands for audio command interface 108 to interface with native applications 112.” Ex. 1001, 4:38–44. This allows “certain predetermined commands for native applications 112 [to] be provided.” *Id.* at 4:44–46.

McConnell also discloses or teaches that its interface program 300 or portions of it can be implemented as an API. *See* Ex. 1004 ¶ 43 (disclosing “the software components illustrated in Fig. 3 may be stand-alone programs, application program interfaces (APIs), or the like”). The ’348 patent similarly discloses audio command interface 108 includes native application command system 306 that “can include one or more application

programming interfaces having a predetermined set of commands that can be used to operate a native application.” Ex. 1001, 6:61–65, Fig. 3.

f) the audio command interface selects, from at least one operating system and at least one application, one operating system or application the audio command interface decides is the appropriate operating system or application to execute at least one process in response to the command

This is the second of two variations of the selecting/deciding limitation, discussed in § II.B.3, *supra*, and is recited in claims 13, 14, 25, and 26. Notwithstanding Patent Owner’s arguments to the contrary, discussed *infra*, Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 25–27 (quoting Ex. 1004 ¶ 50). As discussed above, McConnell interprets voice data as a command, and selects from among two or more applications to execute the command. *See* Ex. 1004 ¶¶ 46, 47, 73–75, Figs. 4A, 4B; Ex. 1003 ¶¶ 93, 94 (cited at Pet. 23–24). McConnell further discloses or teaches the selected applications can be “*part of . . . an operating system of computer 100.*” Ex. 1004 ¶ 50 (emphases added).

Patent Owner contends, as it did in § II.C.2.e, that McConnell’s interface program 300 does not *decide* which is the appropriate operating system or application to select to execute a command because it is programmed with instructions identifying which operating system or application to select. PO Resp. 22–23; PO Sur-Reply 7–11. We disagree for the reasons stated in §§ II.B.3 and II.C.2.e.

Patent Owner also argues that McConnell does not disclose or teach selecting an operating system because “[t]he fact that an application may be part of or accessible to an operating system does not disclose an audio command interface selecting an operating system.” PO Resp. 24. Petitioner disagrees, arguing the ’348 patent discloses selecting operating system

commands rather than operating systems and “selects an appropriate operating system where it recognizes the audio command is an operating system command.” Pet. 26 n.4; Pet. Reply 10 (citing Ex. 1001, 8:46–50). Patent Owner argues the claim language requires selecting an operating system not selecting an operating system command. PO Sur-Reply 11.

We agree with Petitioner that McConnell discloses or teaches the selecting/deciding limitation by selecting either an OS command (i.e., an application that is part of the OS) or an application (i.e., an application that is accessible to the OS). The limitation requires the audio command interface to select, from *at least one operating system* and *at least one application*, one operating system or one application to execute a process in response to a received command. That is, it requires the audio command interface to select either (a) an operating system or (b) an application to execute a process. When the audio command interface selects and executes an operating system command, it selects at least one operating system (the current operating system) to execute a process (the operating system command) in response to the received audio command. This is all the limitation requires and is how the ’348 patent discloses selecting an operating system. *See* Ex. 1001, 2:34–37 (allowing a user “to use voice commands . . . to remotely access and control a computer, whereby the person can operate the operating system”), 4:17–19 (allowing “audio command interface 108 to activate various operating system commands”), 4:57–59 (allowing a mobile device “to remotely access and control . . . operating system functions”), 6:6–9 (allowing “voice commands to be provided to the operating system”), 6:41–44 (allowing “voice commands . . . to remotely access and control the operating system”), 7:46–50 (allowing “a person to use voice commands . . . to access and control . . . operating

system functions”), 8:43–46 (disclosing that when “an operating system command has been received . . . the operating system command is executed.”).

g) in deciding which application to select the audio command interface remembers at least one process that was executed by at least one application

This is the first of two variations of the remembering limitation, discussed in § II.B.4, and is recited in claims 3, 7, 14, 19, 26, and 31. Notwithstanding Patent Owner’s arguments to the contrary, discussed *infra*, Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 28–34 (citing/quoting Ex. 1004 ¶¶ 47, 76, 79–81; Ex. 1003 ¶¶ 100–109).

(1) Claims 3, 7, 14, 19, 26, and 31

As discussed in § II.B.4, we interpret this limitation to include an audio command interface that selects an OS or application upon recognizing a command in a command set that has been limited to the command set of an OS or application.

Petitioner argues that McConnell discloses or teaches the remembering limitation by limiting the grammar that is used to recognize commands to a particular context because McConnell “remembers” the process that limited the grammar to that context when selecting an application in response to a received audio command. Pet. 29–30 (citing Ex. 1004 ¶ 79; Ex. 1003 ¶¶ 100–105). Patent Owner argues McConnell’s grammar is selected “based on [a] user profile” in order to “improve performance of the voice recognition system” and “to match the deciphered user request with one of the data files 322–324 stored in the database” and, therefore, McConnell’s interface program 300 makes no decision “based on

the grammar(s) selected.” PO Resp. 26 (citing Ex. 1004 ¶¶ 74, 79; Ex. 2002 ¶ 66); PO Sur-Reply 12–13. Petitioner replies that McConnell’s interface program 300 selects an application or OS based on “the remembered process determining the grammar” because the “grammars dictate whether a user’s voice command is recognized, and the ACI decides which application or OS to select based on this recognition.” Pet. Reply, 13 (citing Ex. 1004 ¶¶ 79–82; Ex. 1013 ¶ 42).

We agree with Petitioner. McConnell discloses or teaches using a command file to “allow[] a user to input commands to the computer 100 and to cause the interface program 300 to interface with an appropriate component to carry out the command.” Ex. 1004 ¶ 57. The command file can link to a “grammar” containing commands that “the voice recognition software 310 should recognize.” *Id.* Interface program 300 can control which “grammars” are listened for and limit them to “a particular context in which the user is expected to issue a spoken command.” *Id.* ¶¶ 49, 79. We agree with Mr. McNair that to limit selected grammars to a particular context, such as a particular application, interface program 300 would have to remember a process executed by that application. Ex. 1003 ¶ 105.

Moreover, we agree with Petitioner’s example showing how McConnell discloses or teaches the remembering limitation by selecting a grammar based on weather conditions. *See* Pet. 31; Pet. Reply 12–13. For example, McConnell obtains weather reports from the Internet and selects a grammar based on weather conditions. Ex. 1004 ¶¶ 47, 79. We agree with Mr. McNair that interface program 300 can use the selected grammar to recognize an audio command and select an application to execute a process in response to the command. Ex. 1003 ¶ 107. In recognizing the command, interface program 300 would have “remembered” the process that obtained

the weather report because that process was used to select the grammar that was used to recognize the audio command.

(2) Claims 14 and 26

Petitioner argues the “remembering” limitation is a conditional limitation in claims 14 and 26 because these claims allow the audio command interface to select an operating system rather than an application. *See* Pet. 33–34. Therefore, Petitioner argues, because the “remembering” limitation requires selecting an application, it need not be met because McConnell’s audio command interface can select an operating system in response to an audio command. *Id.* We agree.

Claims 14 and 26 allow the audio command interface to select “one operating system or one application,” thus, they do not require “in deciding *the application to select* the audio command interface remembers at least one process that was executed by at least one application” when an operating system is selected. Ex. 1001, 13:59–67, 17:4–14 (emphasis added). *See Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (“When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.”). Here, because Petitioner has demonstrated that McConnell discloses or teaches selecting an operating system to execute a process in response to a command (*see* § II.C.2.f, *supra*), Petitioner need not show that McConnell discloses or teaches the conditional remembering limitation for claims 14 and 26. Patent Owner does not dispute this contention. *See* PO Resp. 25–28; PO Sur-Reply 12–13.

*h) in deciding which operating system to select
the audio command interface remembers at least one process
that was executed by at least one operating system*

This is the second of two variations of the “remembering” limitation, discussed in § II.B.4, *supra*, and is recited in claims 13 and 25. Petitioner argues that this limitation is a conditional limitation because claims 13 and 25 allow the audio command interface to select an application rather than an operating system. Pet. 34. Therefore, Petitioner argues, because this variation of the “remembering” limitation requires selecting an operating system, it need not be met because McConnell’s audio command interface can select an application in response to an audio command. *Id.* We agree for the reasons discussed in § II.C.2.g(2). *See Brown*, 265 F.3d at 1351–53.

Claims 13 and 25 allow the audio command interface to select “one operating system or one application,” thus, they do not require “in deciding *the operating system to select* the audio command interface remembers at least one process that was executed by at least one operating system” when an application is selected. Ex. 1001, 13:36–45, 15:55–65 (emphasis added). Here, because Petitioner has demonstrated that McConnell discloses or teaches selecting an application to execute a process in response to a command (*see* § II.C.2.e, *supra*), Petitioner need not show that McConnell discloses or teaches the conditional remembering limitation for claims 13 and 25. Patent Owner does not dispute this contention. *See* PO Resp. 25–28; PO Sur-Reply 12–13.

*i) executing with the selected application or operating system
the at least one process in response to the command*

This limitation also comes in two variations and appears in claims 3, 13, 14, and 19. For claims 3 and 19, it requires a selected application to execute the at least one process. Ex. 1001, 10:63–64. 15:34–35. For

claims 13 and 14, it requires a selected operating system or application to execute the at least one process. *Id.* at 13:46–48, 14:1–3.

Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 35–36 (quoting Ex. 1004 ¶ 75). For example, McConnell discloses or teaches selecting and retrieving user data 320 in response to a command requesting that data. Ex. 1004 ¶¶ 73–75, Fig. 4B, step 430. The user data can be retrieved by a stand-alone application or an application that is part of the operating system, i.e., by an application that is “part of, or accessible to, an operating system of computer 100.” *Id.* ¶ 50.

Patent Owner argues, with respect to claims 13 and 14, that McConnell fails to disclose or teach this limitation because “McConnell’s alleged audio command interface never selects an operating system.” PO Resp. 25. We disagree that McConnell fails to disclose or teach selecting an operating system for the reasons discussed in § II.C.2.f, *supra*. Moreover, even if McConnell does fail to disclose or teach selecting an operating system, McConnell discloses or teaches this limitation by disclosing or teaching selecting an application in response to the command because this limitation can be met by selecting an application instead of an operating system to execute the at least one process in response to the command. *See* Ex. 1001, 13:36–41, 13:46–48, 13:59–64, 14:1–3.

j) generating output data in response to the selected application or operating system executing the at least one process; and transmitting the output data to the mobile device

This limitation also comes in two variations and appears in claims 3, 13, 14, and 19. For claims 3 and 19, it requires generating output data in response to the selected application executing the at least one process. Ex. 1001, 10:65–66; 15:18–19. For claims 13 and 14, it requires generating

output data in response to the selected operating system or application executing the at least one process. *Id.* at 13:49–51, 14:4–6.

Petitioner demonstrates how McConnell discloses or teaches this limitation. *See* Pet. 36–37 (quoting Ex. 1004 ¶¶ 74–75). For example, after retrieving user data 320 in response to a command, McConnell discloses or teaches “generat[ing] a spoken answer based on the information retrieved.” Ex. 1004 ¶ 75, Fig. 4B, step 432. The user data can be retrieved by a stand-alone application or an application that is part of the operating system, i.e., by an application that is “part of, or accessible to, an operating system of computer 100.” *Id.* ¶ 50.

Patent Owner argues, with respect to claims 13 and 14, that McConnell fails to disclose or teach this limitation because “McConnell’s alleged audio command interface never selects an operating system.” PO Resp. 25. We disagree that McConnell fails to disclose or teach selecting an operating system for the reasons discussed in § II.C.2.f, *supra*. Moreover, even if McConnell does fail to disclose or teach selecting an operating system, McConnell discloses or teaches this limitation by disclosing or teaching selecting an application in response to the command because this limitation can be met by generating output data in response to the selected application executing the at least one process. *See* Ex. 1001, 13:36–41, 13:49–51, 13:59–64, 14:4–6.

3. *Conclusion for the challenges based on McConnell*

The claims challenged as unpatentable as anticipated by or obvious over McConnell require the following limitations:

Claim 3 limitations a, c, d, e, g, i, j,

Claim 7 limitations a, b, c, d, e, g,

- Claim 13 limitations a, c, d, f, h, i, j,
- Claim 14 limitations a, c, d, f, g, i, j,
- Claim 19 limitations a, c, d, e, g, i, j,
- Claim 25 limitations a, b, c, d, f, h,
- Claim 26 limitations a, b, c, d, f, g,
- Claim 31 limitations a, b, c, d, e, g.

See Ex. 1001, 10:50–67, 11:48–62, 13:30–14:7, 15:21–38, 16:50–17:14, and 18:22–36. For the reasons discussed in §§ II.C.2.a–j, *supra*, Petitioner demonstrates by a preponderance of evidence how McConnell discloses or teaches each of the limitations recited in claims 3, 7, 13, 14, 19, 25, 26, and 31. Accordingly, Petitioner demonstrates by a preponderance of evidence that these claims are unpatentable as anticipated by or obvious over McConnell.

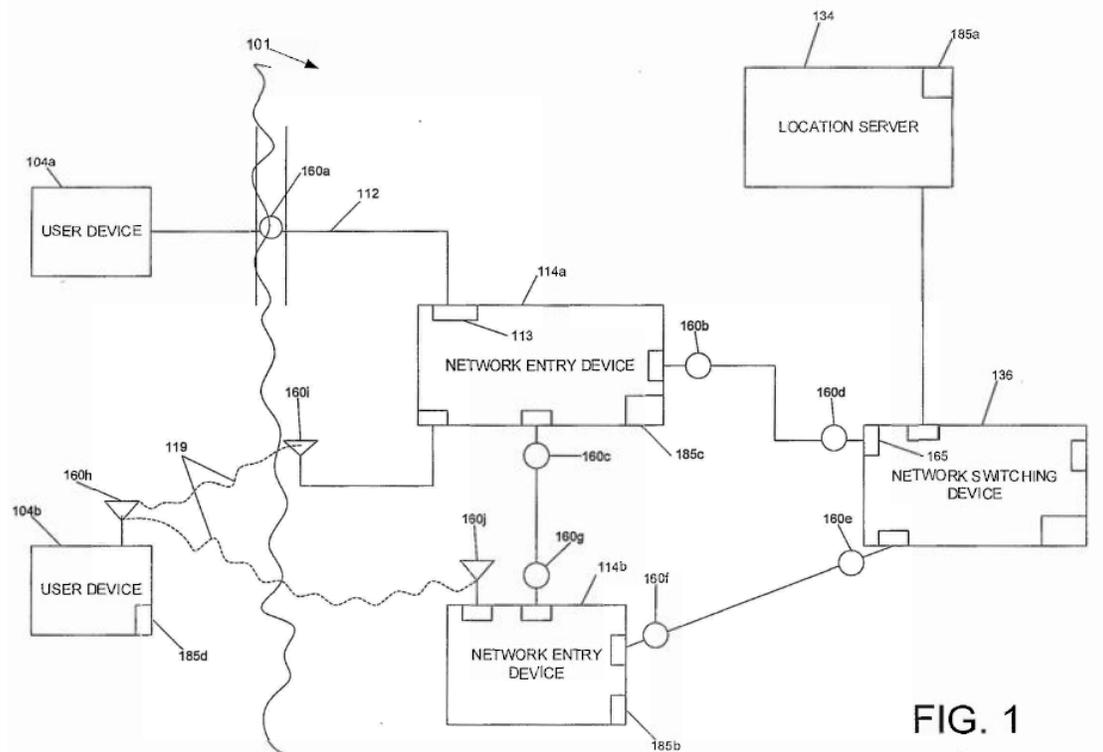
D. Challenges based on McConnell and Roese

Petitioner argues claims 2, 6, 11, 12, 18, 23, 24, and 30 are unpatentable as obvious over McConnell and Roese. Pet. 37–52; Pet. Reply 14–18. Patent Owner disagrees. PO Resp. 28–34; PO Sur-Reply 13–14. For the reasons discussed below, notwithstanding Patent Owner’s arguments to the contrary, we find Petitioner has established by a preponderance of evidence that claims 2, 6, 11, 12, 18, 23, 24, and 30 are unpatentable as obvious over McConnell and Roese.

I. Roese

Roese relates to systems and methods for the “determination and use of location information within a data network.” Ex. 1005, 3:15–16.⁵

Roese’s system 100 is shown in Figure 1, which is reproduced below.



The figure above is a block diagram of Roese’s location-based system 100. *Id.* at 15:11. System 100 includes network entry devices 114a/b that allow mobile user device 104b to access a network via connection points 160i/j. *Id.* at Fig. 1. Roese can “enforce certain restrictions, on an initial and continual basis, based on locations of devices.” *Id.* at 18:30–31. For example, Roese can “restrict access to the network or data stored on the network based on the location of user device 104” and can “allow or restrict access to certain devices, information, applications . . . and the like.” *Id.*

⁵ Petitioner cites to the page number of Exhibit 1005 rather than to the page number of Roese’s application. We follow that convention here.

at 18:31–19:1, 39:22–40:1. Roese “receives (step 415) the device location before allowing [a] requested access” by determining “that the physical location of the client device is in a permitted and authorized location for access to the requested network resources.” *Id.* at 42:17–19, 42:22–24, Fig. 4, steps 415–440. The requested access can be “a request for a certain database of information, a request for a certain application, and the like.” *Id.* at 44:13–15. Roese’s access limitations can be enforced by “particular software applications executing on the devices” or by “the operating system of any of the devices.” *Id.* at 16:18–22. Roese’s access limitation techniques enable “system 100 to restrict access to data, applications, specific networked devices . . . and the like, based on the user and/or the location of the device associated with the user.” *Id.* at 46:7–10.

2. *Reasons to Combine McConnell and Roese*

Petitioner argues McConnell discloses an audio command interface that selects an application or operating system in response to an audio command, but does not disclose the selection can be based on location data. Pet. 42. Petitioner argues both McConnell and Roese teach restricting computer access to authenticated users. *Id.* at 43 (citing Ex. 1004 ¶¶ 67, 72; Ex. 1005, 42:11–12). Moreover, Petitioner argues, Roese further teaches restricting computer access, including access to computer files and applications, based on other criteria such as device location. *Id.* (citing Ex. 1005, 19:1–3, 40:15–17, 41:28–30). Therefore, Petitioner contends, a person skilled in the art would have incorporated Roese’s teachings into McConnell to “improve McConnell[’s] security features by taking location of the accessing device into account.” *Id.* at 44 (citing Ex. 1003 ¶ 131). Petitioner reasons that a person skilled in the art would have known that McConnell’s interface program 300 could be modified to enforce Roese’s

location-based restrictions because Roesse teaches the restrictions can be provided/enforced by particular applications or the operating system. *Id.* at 44–45 (citing Ex. 1003 ¶ 132). Petitioner argues the proposed modification does no more than “apply[] the known Roesse technique . . . to the known rudimentary access control mechanism of McConnell that is ready for improvement” and “combin[es] prior art elements . . . using known methods.” *Id.* at 45–46 (citing Ex. 1003 ¶ 134). Patent Owner does not dispute these contentions. *See* PO Resp. 28–34.

We find Petitioner has articulated sufficient reasoning with rational underpinning to combine the teachings of McConnell and Roesse. Both references teach the importance of computer security, and Roesse teaches a location-based security protocol that can improve McConnell’s security posture. *See* Ex. 1004 ¶ 67 (McConnell’s disclosure that “interface program 300 may permit only a ‘secure’ remote user to access the computer 100”); Ex. 1005, 19:1–3 (Roesse’s disclosure to “restrict[] access to accounting databases to only user devices 104 located within the accounting department offices”). Thus, the combination would have been one of familiar elements according to known methods to achieve a predictable result. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

3. *Limitation by limitation analysis*

As discussed in § I.G, *supra*, all of the claims of the ’348 patent are independent. Claims 2, 6, 11, 12, 18, 23, 24, and 30 are challenged as unpatentable over McConnell and Roesse and contain many of the same limitations required by claims 3, 7, 13, 14, 19, 25, 26, and 31 discussed in §§ II.C.2.a–j. Consequently, Petitioner’s analysis of these limitations refers back to its analysis of the same limitations required by claims 3, 7, 13, 14, 19, 25, 26, and 31. *See* Pet. 47–50; Pet. Reply 14. Patent Owner argues the

combination of McConnell and Roese fails to teach at least some of these limitations for the same reasons discussed in §§ II.C.2.e, f, i, and j. *See* PO Resp. 28–32. We disagree for the reasons discussed in §§ II.C.2.e, f, i, and j. The remaining limitations required by claims 2, 6, 11, 12, 18, 23, 24, and 30 are discussed below.

*k) the audio command interface uses
location data in deciding which application to select*

This is the first of two variations of the location data limitation, discussed in § II.B.5, *supra*, and appears in claims 2, 6, 12, 18, 24, and 30. Notwithstanding Patent Owner’s arguments to the contrary, discussed *infra*, Petitioner demonstrates how McConnell, modified by Roese, teaches this limitation. *See* Pet. 50–51 (citing/quoting Ex. 1005, 39:22–40:1, 44:16–19, 46:7–10; Ex. 1003 ¶¶ 143–144).

(1) Claims 2, 6, 12, 18, 24, and 30

As discussed in § II.B.5, we interpret this limitation to mean “the audio command interface uses location data to determine whether an application can be selected for execution in response to a command.” Petitioner argues the combination of McConnell and Roese teaches this limitation because McConnell’s interface program 300 can be modified to use “location data in deciding whether a particular application may be accessed” based on Roese’s teaching of determining “whether the device used by the user is in a location approved or otherwise permitted to receive the requested . . . application.” Pet. 50–51 (quoting Ex. 1005, 44:16–19; citing Ex. 1003 ¶ 143).

Patent Owner argues Roese uses location data to tag location sensitive information that is being used by applications that have already been selected. PO Resp. 33 (citing Ex. 1005, 47–48; Ex. 1002 ¶ 80); PO Sur-

Reply 13–14. Therefore, Patent Owner argues, “Roese does not disclose or teach using location data to decide which application, or operating system, to select.” *Id.* Patent Owner further argues that Roese teaches using location data to “allow or deny access to [a] system as a whole,” not to “decide what application, or operating system, to select.” PO Resp. 33 (citing Ex. 1005, 39, 40, 44, 46; Ex. 1002 ¶ 81); PO Sur-Reply 14. Petitioner replies that “Roese expressly teaches location data is used to control access to applications (as opposed to only controlling access to the system as a whole).” Pet. Reply 15 (quoting Ex. 1005, 39:23–40:1).

We agree with Petitioner. Roese teaches receiving (step 410), from a user that has already been authenticated to access a network (step 405), a request to access an application on the network. Ex. 1005, 44:10–12, Fig. 4. Roese then determines (step 415) and authenticates (step 420) the user’s device location and also authenticates (step 425) the user’s authority to access the requested application. *Id.* at 44:12–15, Fig. 4. If the user has the authority to request access to the application, Roese “determines (step 430) whether the device used by the user is in a location approved or otherwise permitted to receive the requested . . . application.” *Id.* at 44:16–19, Fig. 4. Thus, Roese uses location data to do more than simply grant/deny access to the network as a whole or to tag location sensitive data using an application that has already been selected as Patent Owner contends. Roese also uses location data to grant/deny access to particular applications based on the user’s location as Petitioner contends.

Accordingly, for the reasons discussed in § II.D.2, we find that McConnell’s interface program 300, modified to incorporate the teachings of Roese, would have used location data to decide if a particular application is allowed to be accessed at a particular location.

(2) Claims 12 and 24

Petitioner argues the location data limitation is a conditional limitation in claims 12 and 24 because these claims allow the audio command interface to select an operating system rather than an application. *See* Pet. 51. Therefore, Petitioner argues, because the location data limitation requires selecting an application and McConnell’s audio command system can select an operating system, the location data limitation need not be met. *Id.*

We agree with Petitioner. Claims 12 and 24 allow the audio command interface to select “one operating system or one application,” thus, they do not require “in deciding *the application to select* the audio command interface uses location data” when an operating system is selected. Ex. 1001, 13:14–21, 16:40–49 (emphasis added). *See Brown*, 265 F.3d at 1351–53. Here, because Petitioner has demonstrated that McConnell discloses or teaches selecting an operating system to execute a process in response to a command (*see* § II.C.2.f, *supra*), Petitioner need not show that McConnell discloses or teaches the conditional location data limitation for claims 12 and 24. Patent Owner does not dispute this contention. *See* PO Resp. 28–33; PO Sur-Reply 13–14.

*l) the audio command interface uses location data
in deciding the operating system to select*

This is the second of two variations of the location data limitation, discussed in § II.B.5, *supra*, and appears in claims 11 and 23. Petitioner argues that this limitation is a conditional limitation because claims 11 and 23 allow the audio command interface to select an application rather an operating system. Pet. 52. Therefore, Petitioner argues, because the location data limitation requires selecting an operating system and McConnell discloses the audio command system can select an application,

the location data limitation need not be met. *Id.* We agree for the reasons discussed in § II.D.3.k(2). *See Brown*, 265 F.3d at 1351–53.

Claims 11 and 23 allow the audio command interface to select “one operating system or one application,” thus, they do not require “in deciding *the operating system to select* the audio command interface uses location data” when an application is selected. Ex. 1001, 12:60–67, 16:25–34 (emphasis added). Here, because Petitioner has demonstrated that McConnell discloses or teaches selecting an application to execute a process in response to a command (*see* § II.C.2.e, *supra*), Petitioner need not show that McConnell discloses or teaches the conditional location data limitation for claims 11 and 23. Patent Owner does not dispute this contention. *See* PO Resp. 28–33; PO Sur-Reply 13–14.

Regardless, Petitioner argues the combination of McConnell and Roese teaches this limitation because McConnell’s audio command interface can be modified to consider “location data in the selection of operating system functions” based on Roese’s teaching that “location restrictions can be enforced at the operating system level.” Pet. 52 (citing Ex. 1005, 14:19–20; Ex. 1003 ¶ 146). Patent Owner argues these limitations are not met for the reasons discussed in § II.D.3.k(1). PO Resp. 33; PO Sur-Reply 13–14. We disagree for the reasons discussed there. *See* § II.D.3.k(1), *supra*.

Roese teaches its location-based restrictions can be provided or enforced by the applications or operating systems of the devices subject to the restrictions. Ex. 1005, 16:19–21. We agree with Mr. McNair that a person skilled in the art would have found it obvious to modify McConnell’s interface program 300 to “consider location data in the selection of operating system functions” in order to “ensure names of sensitive files are not displayed in response to [an OS] search command when the McConnell

laptop and/or mobile device is in an authorized [sic, unauthorized] location.”
Ex. 1003 ¶ 146.

4. *Conclusion for the claims challenged over McConnell and Roesse*

The claims challenged as unpatentable over the combination of
McConnell and Roesse require the following limitations:

- Claim 2 limitations a, c, d, e, k, i, j,
- Claim 6 limitations a, b, c, d, e, k,
- Claim 11 limitations a, c, d, f, l, i, j,
- Claim 12 limitations a, c, d, f, k, i, j,
- Claim 18 limitations a, c, d, e, k, i, j,
- Claim 23 limitations a, b, c, d, f, l,
- Claim 24 limitations a, b, c, d, f, k,
- Claim 30 limitations a, b, c, d, e, k,

See Ex. 1001, 10:33–49, 11:34–47, 12:54–13:29, 15:4–20, 16:20–49, and 18:10–21. For the reasons discussed in §§ II.C.2.a–f, II.C.2i–j, II.D.2, and II.D.3.k–l, *supra*, Petitioner articulates sufficient reasoning with a rational underpinning to combine the teachings of McConnell and Roesse and demonstrates by a preponderance of evidence how the combination of McConnell and Roesse teaches or suggests all of the limitations recited in claims 2, 6, 11, 12, 18, 23, 24, and 30. Accordingly, Petitioner demonstrates by a preponderance of evidence that these claims are unpatentable as obvious over McConnell and Roesse.

E. Challenges based on Balakrishnan, Wong

Petitioner argues claims 3, 7, 13, 14, 19, 25, 26, and 31 are unpatentable as obvious over Balakrishnan and Wong. Pet. 53–74. Patent Owner disagrees. PO Resp. 34–62. For the reasons discussed in § II.C, *supra*, Petitioner has demonstrated by a preponderance of evidence that

these claims are unpatentable as anticipated or obvious over McConnell. Therefore, we need not consider whether Petitioner has also demonstrated that these claims are unpatentable as obvious over Balakrishnan and Wong. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (finding an administrative agency is at liberty to reach a decision based on a single dispositive issue).

III. CONCLUSION

We have reviewed the Petition, Patent Owner Response, Petitioner Reply, and Patent Owner Sur-Reply. We have considered all of the evidence and arguments presented by Petitioner and Patent Owner. We find, on this record, Petitioner has demonstrated by a preponderance of evidence that claims 2, 3, 6, 7, 11–14, 18, 19, 23–26, 30, and 31 of the '348 patent are

unpatentable.⁶

Claims	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
3, 7, 13, 14, 19, 25, 26, 31	102(b) or 103(a)	McConnell	3, 7, 13, 14, 19, 25, 26, 31	
2, 6, 11, 12, 18, 23, 24, 30	103(a)	McConnell, Roese	2, 6, 11, 12, 18, 23, 24, 30	
3, 7, 13, 14, 19, 25, 26, 31	103(a)	Balakrishnan, Wong ⁷		
Overall Outcome			2, 3, 6, 7, 11– 14, 18, 19, 23–26, 30, 31	

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has shown on this record that claims 2, 3, 6, 7, 11–14, 18, 19, 23–26, 30, 31 of the '348 patent are unpatentable; and

⁶ 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).

⁷ Because we find all challenged claims unpatentable on other grounds, we do not consider the patentability of these claims over Balakrishnan and Wong.

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FURTHER ORDERED that this Decision is final, and a party to this 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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