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Paper 38
Entered: April 12, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

HAMMOND DEVELOPMENT INTERNATIONAL, INC.,
Patent Owner.

IPR2020-00020
Patent 9,264,483 B2

Before MICHELLE N. WORMMEESTER, AMBER L. HAGY, and KRISTI L. R. SAWERT, *Administrative Patent Judges.*

HAGY, *Administrative Patent Judge*.

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

I. INTRODUCTION

Google LLC ("Petitioner") filed a petition for *inter partes* review (Paper 2 ("Pet.")) challenging claims 1–10, 12–18, and 20–28 of U.S. Patent No. 9,264,483 B2 (Ex. 1001, the "'483 patent"). *See* 35 U.S.C. § 311 (2018). Hammond Development International, Inc. ("Patent Owner") timely filed a Preliminary Response. Paper 7 ("Prelim. Resp."). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of all challenged claims on all grounds presented in the Petition. Paper 8 ("Institution Decision" or "Dec."). Patent Owner filed a Patent Owner Response (Paper 22, "PO Resp."), Petitioner filed a Reply (Paper 25, "Reply"), and Patent Owner filed a Sur-reply (Paper 29, "Sur-reply").

On January 29, 2021, we conducted an oral hearing jointly with co-pending *inter partes* review IPR2020-00080, which was also filed by Petitioner and involves claims of related U.S. Patent 10,264,032 B1. A copy of the transcript (Paper 37, "Tr.") is included in the record.

We have jurisdiction under 35 U.S.C. § 6(b). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–10, 12–18, and 20–28 of the '483 patent are unpatentable. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a).

II. BACKGROUND

A. Related Matters

Petitioner and Patent Owner both state the '483 patent has been asserted by Patent Owner in *Hammond Development International, Inc. v. Google LLC*, No. 6:19-cv-00356 (W.D. Tex.); and in *Hammond*

Development International, Inc. v. Amazon.com, Inc., No. 6:19-cv-00355 (W.D. Tex.). Pet. 78; Paper 5, 2.

Petitioner identifies several patents as members of "the '483 patent family": U.S. Patent Nos. 9,420,011; 9,456,040; 9,705,937; 9,716,732; 10,193,935; 10,264,032; and 10,270,816. Paper 6, 2–3. Petitioner also states that pending U.S. Application No. 16/389,170 "claims priority to the '483 patent." *Id.* at 3.

In addition to the present proceeding, currently pending before the Board are *inter partes* reviews of the '483 patent (IPR2020-00460 (Petitioner Amazon.com, Inc. ("Amazon"))); U.S. Patent 10,264,032 (IPR2020-00080 (Petitioner Google); IPR2020-01029 (Petitioner Amazon)); and U.S. Patent 10,270,816 (IPR2020-00081 (Petitioner Google); IPR2020-01067 (Petitioner Amazon)).

B. The '483 Patent (Ex. 1001)

The '483 patent, titled "Method and System for Enabling a Communication Device to Remotely Execute an Application," issued February 16, 2016, based on an application filed July 18, 2007. Ex. 1001, codes (22), (45), (54). The '483 patent describes a communication system that establishes a communication session between a client device and a remote application server, which executes an application for the client, e.g., the remote application server "execut[es] an application for a thin-client

device." *Id.* at 1:63–2:7, 2:30–31. Figure 1D of the '483 patent shows an embodiment of a communication system and is reproduced below.

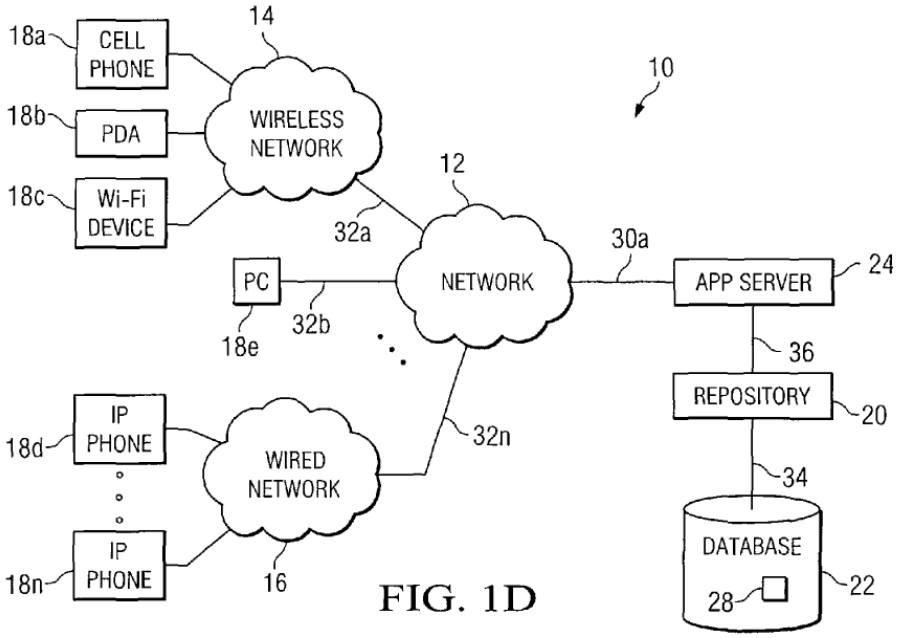

Figure 1D shows a block diagram of a communications system and associated components. Ex. 1001, 3:4–6.

As shown in Figure 1D, "clients 18*a*–18*n* . . . couple to network 12 through one or more communications links 32 and/or one or more networks 14, 16." *Id.* at 3:54–56.[1] Additionally, "application servers 24 couple to network 12 through one or more communications links 30." *Id.* at 3:37–38. Repository 20 and application server 24 are connected via "a direct communication link 36." *Id.* at 10:40–43.

The communication system of the '483 patent "enables a client 18 to have one or more applications 28 executed remotely" by the application server 24. *Id.* at 5:57–59. A user of the client "initiates an information collection and/or retrieval process by communicating a request to application

[1] All bolding of reference numbers has been omitted in material quoted herein from the '483 patent and the prior art references.

server 24." *Id.* at 5:59–62; *see also id.* at 5:27–30 ("In some embodiments, clients 18 can be configured to initiate a connection with repositories 20 and/or application servers 24."), 1:67–2:3 ("At least one of the one or more communication devices is operable to communicate a request to establish a communication session."). After that, "application server 24 notifies repository 20 that a communication session with client 18 has been requested." *Id.* at 6:17–19. "Repository 20 . . . operates to identify a desired application 28 and to communicate application 28, or portions thereof, to application server 24 for execution." *Id.* at 6:19–22. Further, "[u]pon receipt of application 28, application server 24 executes application 28 and begins a communication session with client 18*a*." *Id.* at 6:22–24. In particular, "application server 24 begins the process of communicating information to and/or retrieving information from client 18*a*" by "requesting that the user of client 18*a* respond to a series of queries associated with application 28." *Id.* at 6:24–26, 49–51. For example, "application server 24 executes a Voice XML-based application that enables application server 24 to interact with and collect information from client 18*a*." *Id.* at 6:26–29.

C. Illustrative Claims

Of the challenged claims, claims 1, 10, and 22 are independent claims. Claims 2–9 depend, directly or indirectly, from claim 1; claims 12–18, 20 and 21 depend, directly or indirectly, from claim 10; and claims 23–28 depend, directly or indirectly, from claim 22.

Claims 1, 10, and 22, reproduced below, illustrate the claimed subject matter (formatting and labeling added):[2]

[2] We have added formatting and labeling (numbering / lettering) to the elements in keeping with the labeling used by the parties. *See* Pet. ii–v; Ex. 2001 (App. of Challenged Claims).

1. [1pre] A communication system capable of enabling one or more communication devices to remotely execute one or more applications, comprising:

[1a1] one or more communication devices coupled to a first communication link, at least one of the one or more communication devices adapted to communicate a request to establish a communication session over the first communication link,

[1a2] the at least one communication device comprising a thin-client software program that provides processing services to an application substantially executed at a location remote from the at least one communication device,

[1a3] wherein the first communication link comprises a data connection;

[1b] one or more application servers coupled to the first communication link and operable to receive the request communicated over the first communication link; and

[1c1] one or more repositories coupled to at least one of the one or more application servers and operable to communicate with the one or more application servers,

[1c2] at least one of the one or more repositories having access to one or more applications maintained in a database coupled to the at least one repository,

[1c3] the at least one repository adapted to communicate the identified application over a second communication link to the at least one application server;

[1d] wherein the at least one application server is adapted to execute the identified application remote from the at least one communication device and to establish the communication session with the at least one communication device,

[1e] wherein the at least one application server communicates a request for processing service to the at least one communication device,

[1f] wherein the request for processing service is communicated to the at least one communication device over the data connection, and

[1g] wherein the request for processing service comprises one or more queries for information from a user.

Ex. 1001, 13:2–38.

10. [10pre] A communication system capable of enabling one or more communication devices to remotely execute one or more applications, comprising:

[10a] one or more application servers coupled to a first communication link, the first communication link comprising a data connection,

[10b] at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session,

[10c] the at least one application server residing at a location remote from the at least one communication device;

[10d] wherein the at least one application server is operable to receive over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository,

[10e] wherein the at least one application server is further operable to execute the received application remote from the at least one communication device and to establish the communication session with the at least one communication device,

[10f] wherein the at least one application server is operable to communicate a request for processing service to the at least one communication device, and

[10g] wherein the request for processing service is communicated to the at least one communication device over the data connection, and

[10h] wherein the request for processing service comprises one or more queries for information from a user.

Id. at 14:3–32.

22. [22pre] A method for enabling one or more communication devices to remotely execute one or more applications, comprising:

[22a] receiving a request to establish a communication session from at least one communication device over a first communication link comprising a data connection;

[22b] receiving over a second communication link an application from a repository having access to one or more applications maintained in a database coupled to the at least one repository;

[22c] executing the application to establish the requested communication session over the data connection, wherein the application is executed remotely from the at least one communication device;

[22d] communicating a request for processing service to the at least one communication device, wherein the request for processing service is communicated to the at least one communication device over the data connection,

[22e] the request for processing service comprising one or more queries for information from a user.

Id. at 15:10–29.

D. Instituted Grounds of Unpatentability

We instituted *inter partes* review of all challenged claims based on all grounds of unpatentability asserted in the Petition, which are as follows:

Claims Challenged	35 U.S.C. §	References/Basis
1, 3, 4, 6–10, 12, 14, 15, 17, 18, 20–28	103(a)[3]	Gilmore,[4] Dodrill[5]
2, 5, 13, 16	103(a)	Gilmore, Dodrill, Patel[6]

Dec. 8, 42; Pet. 2.

III. ANALYSIS

A. Principles of Law

A patent 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 Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended several provisions of 35 U.S.C., including §§ 102 and 103. Because the '483 patent has an effective filing date prior to the effective date of the applicable AIA amendments, we refer herein to the pre-AIA version of the statute.

[4] Gilmore, et al., U.S. Pat. App. No. 2003/0216923 A1, published Nov. 20, 2003 (Ex. 1005, "Gilmore").

[5] Dodrill, et al., U.S. Pat. No. 6,766,298 B1, issued July 20, 2004 (Ex. 1006, "Dodrill").

[6] Patel, et al., U.S. Pat. App. No. 2006/0256950 Al, published Nov. 16, 2006 (Ex. 1007, "Patel").

(3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.[7] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

B. Level of Ordinary Skill in the Art

The level of skill in the art is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham*, 383 U.S. at 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)).

Petitioner asserts a "person of ordinary skill in the art of the '483 patent would have at least a bachelor's degree in Computer or Electrical Engineering, Computer Science, or equivalent engineering discipline, and approximately three years of experience working on remotely-processed

[7] The parties do not direct our attention to any evidence of objective indicia of nonobviousness.

applications and data networking, including voice-related applications and voice-over packet technologies." Pet. 5; *see* Ex. 1021 ¶ 50.[8]

Patent Owner disagrees with Petitioner's definition and asserts "a person of ordinary skill in the art of the '483 patent at the time of invention would have had at least a bachelor's degree in Computer or Electrical Engineering, Computer Science, or equivalent discipline, and approximately one to two years of work experience in data networking." PO Resp. 23. Patent Owner further contends "the level of ordinary skill in the art relative to the '483 patent is not a rigid formula. More education with less experience or more experience with less formal education could equally qualify an individual as a [person of ordinary skill in the art (POSITA)]." *Id.* at 23–24. Patent Owner's proposed level of skill thus includes fewer years of work experience, but in only "data networking" (as opposed to Petitioner's definition, which requires work experience on both remotely-processed applications and data networking), and Patent Owner urges a less rigid requirement.

To the extent necessary herein, we apply Patent Owner's definition of the level of ordinary skill in the art, as we did in the Institution Decision. We determine the definition offered by Patent Owner is consistent with the teachings of the '483 patent and the prior art of record. *Cf. Okajima v.*

[8] With the Board's approval and subsequent to our Institution Decision, Petitioner substituted the Declaration of Stuart J. Lipoff (Ex. 1021) for the declaration of Petitioner's original expert (Ex. 1003), while maintaining the identical substantive content of the original declaration. Per our Order granting authorization for the substitution, we consider cites to the original declaration in the Petition and other filed documents to refer to the substitute declaration. *See* Paper 18, 5. Therefore, we refer herein to Ex. 1021 instead of to Ex. 1003 as originally cited in the Petition.

Bourdeau, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (noting that the prior art itself may reflect an appropriate level of skill in the art). We note, however, that neither party explains how the differences in the parties' competing proposals are material to the issues before us. We further note that our adoption of Patent Owner's proposed definition does not reflect a view that adopting Petitioner's competing definition of the level of ordinary skill in the art would have any impact on the outcome of this proceeding. To the contrary, our fact findings would be the same under either party's definition.

C. Claim Construction

In interpreting the claims of the '483 patent, we "us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b)." *See* 37 C.F.R. § 42.100(b) (2019). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

We did not expressly construe any terms in our Institution Decision, in part because neither party presented any terms expressly for construction. Dec. 11; *see* Pet. 5; Prelim. Resp. 28. We did, however, address, within the context of our obviousness analysis, the parties' apparent dispute regarding the term "establish the communication session." *See* Dec. 12, 21–25. We advised that "the parties may wish to develop the record further at trial as to how an ordinarily skilled artisan, at the time of the invention, would have interpreted 'communication session' and would have understood when a 'communication session' is 'established,' in light of the disclosure of the '483 patent." *Id.* at 25.

Patent Owner now takes issue with Petitioner's position that no claim terms need to be construed. PO Resp. 17; *see* Pet. 5. Specifically, Patent Owner argues that Petitioner "sought specific constructions for *eight* terms" from the '483 patent in the co-pending district court litigation, but none in this proceeding, and suggests that Petitioner's failure to offer the same constructions here means that Petitioner has failed to satisfy its obligations in this proceeding. *See* PO Resp. 17. We disagree. Although Patent Owner is correct that the same claim construction standards apply to this proceeding as to the district court proceeding, the common standard does not mandate that all claim construction disputes submitted to the district court must also be aired here. Rather, "only those terms need be construed that are in controversy, 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) (*citing Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Patent Owner then contends the Board should adopt the same constructions adopted by the district court as to three terms of the '483 patent. PO Resp. 18. We address each of those terms below.

1. "request . . . to establish [a/the] communication session"

Independent claims 1, 10, and 22 recite that a communication device communicates a "request" "to establish [a/the] communication session." Ex. 1001, 13:8, 14:9–13, 15:13–15. In our Institution Decision, we noted an apparent dispute between the parties over whether a telephone call to a host system was a "request" to "establish the communication session," as Petitioner asserted, or was itself sufficient to actually establish such a session, as Patent Owner asserted in its Preliminary Response. Dec. 20–25 (citing Pet. 15 (asserting that the phone call in Gilmore is merely a request,

and the communication session is thereafter established by the gateway executing an interactive voice application), Prelim. Resp. 35 (asserting, in describing Gilmore's teachings, that "dialing a telephone number is not a request to establish a communication session; rather, it *is itself* the establishment of a call session")[9]). We preliminarily determined, for purposes of our Institution Decision, that "the ordinarily skilled artisan would have understood that a communication device placing a telephone call to a voice response system does not itself 'establish' a communication session, but rather is a request to establish such a session." *Id.* at 25. We further noted that "the parties may wish to further develop the record at trial as to how an ordinarily skilled artisan, at the time of the invention, would have interpreted 'communication session' and would have understood when a 'communication session' is 'established,' in light of the disclosure of the '483 patent." *Id.*

In its Response, Patent Owner states the district court determined the phrase "request . . . to establish [a/the] communication session" should be "given its plain and ordinary meaning," but "the request must occur *before* the establishment of the communication session." PO Resp. 19 (emphasis added) (quoting Ex. 2009, 1) (alteration in original). Patent Owner does not, however, further address the construction of this entire term. Instead, Patent Owner focuses its evidence and arguments on what it deems the characteristics of a "communication session," while acknowledging that

[9] Patent Owner now asserts that we misunderstood Patent Owner's arguments from the Preliminary Response, and that what Patent Owner argued was that "a phone call (or 'call session') is not a communication session." PO Resp. 44 (emphasis omitted).

neither party requested the district court to construe "communication session." *Id.* at 19–20.

Patent Owner contends, relying on the testimony of its expert, Dr. Rhyne (Ex. 2007), that the ordinarily skilled artisan would have understood that a "communication session" in the context of the '483 patent "has certain characteristics"; namely it "(a) is a 'session' with a beginning and an end (b) that is the result of a *processed request* and (c) that includes an exchange of information (d) between an application server and (e) a client device (f) *over a data connection*." PO Resp. 19–20 (emphases added) (footnotes omitted) (citing Ex. 2007 ¶ 42). Patent Owner further asserts that, "[a]t its most essential, the 'communication session' of the '483 Patent is a temporary information exchange between computing devices over a data connection in response to a request from a client device." *Id.* at 20. Patent Owner then contends that, accordingly, a "communication session" as claimed by the '483 patent "is not satisfied by a mere telephone call." *Id.* (citing Ex. 2007 ¶ 43).

Petitioner responds that Patent Owner "does not argue that its narrower construction or additional requirements are material to patentability, . . . so the Board need not address them." Reply 6. Petitioner then counters Patent Owner's asserted characteristics of a communication session, contending, among other things: (1) a "computing device" is not required for the client device because the '483 patent describes communication sessions over a telephone network (*id.* (citing Ex. 1001, 3:41–53, 5:40–41)); and (2) construing a "communication session" as being "in response to a request from a client device" would be redundant of other limitations in the claims (*id.* at 7). Petitioner then notes the '483 patent describes a "communication session" as "the process of communicating

information to and/or retrieving information from client 18a," and "enabl[ing] application server 24 to interact with and collect information from client 18a" through, for example, queries to and responses from a user. *Id.* at 8 (quoting Ex. 1001, 6:22–29, 6:49–62; citing *id.* at 5:35–40) (alteration in original).

In its Sur-reply, Patent Owner asserts that it proposed to the district court, and now advocates here, that the "communication session" terms carry their "plain and ordinary meaning." Sur-reply 8. Patent Owner then reiterates its position that "the telephone call of *Gilmore* cannot be a communication session" because a "computing device" is required for the client device, as illustrated by the district court's construction of a different term—"request for processing service." *Id.* at 8–10. Patent Owner further contends that because a request to establish a communication session must occur *before* the communication session is established, a session cannot be established *until the request is processed*. *Id.* at 10.

The parties' arguments post-institution do not reveal a material dispute over the construction of the term "communication session" itself. Rather, the parties' disputes hinge on different claim terms, including "request for processing service." *See, e.g.*, PO Resp. 20–21; Reply 9–12; Sur-reply 11–14. We address that construction below. To the extent necessary, we construe a "communication session," consistent with the disclosure of the '483 patent, as the process of a communication device communicating information to, and/or retrieving information from, another communication device. *See* Ex. 1001, 6:22–26.

We determine that we need not further construe this term to resolve the parties' disputes herein; rather, as noted, the parties' disputes invoke additional terms, which we address below.

2. "request for processing service"

Independent claims 1, 10, and 22 recite that the application server communicates a "request for processing service" to the communication device, and further recite "wherein the request for processing service comprises one or more queries for information from a user." Ex. 1001, 13:33–38, 14:26–32, 15:24–29. We first summarize the parties' positions, then turn to our analysis of this term.

a) Parties' Positions

Patent Owner addresses "request" separately from "processing service." *See* PO Resp. 20–21 ("processing service" terms), 22–23 ("request"). With regard to the term "request," Patent Owner acknowledges that the parties did not ask the district court to construe that term, but asserts that it should be afforded its "plain and ordinary meaning." *Id.* at 22. According to Patent Owner, the plain and ordinary meaning of "request" in the context of the '483 patent is "an action at the computer-code-instruction level." *Id.* As support, Patent Owner quotes several passages from the Specification that Patent Owner contends "make[] clear that the 'requests' in the '483 Patent are instructions that must be processed or handled by system components." *Id.* at 22–23 (citing Ex. 1001, 5:60–62, 7:23–25, 7:42–47, 8:6–8, 8:42–44, 12:31–36; Ex. 2007 ¶ 44).

In its Reply, Petitioner points out that, although Patent Owner did not seek to construe "request" separately before the district court, Patent Owner did propose to construe "request for [a] processing service" such that the "request" portion requires "computer-code-instruction[s]." Reply 9–10; *see* Ex. 2011, 11. This contention is borne out by Patent Owner's briefing to the district court, wherein Patent Owner argued, as it does here, that the '483 patent "consistently describe[s] 'request' as being at the computer-code-

instruction level." Ex. 2011, 11. Petitioner asserts that the district court rejected that construction when it construed "request for processing service" to have its plain and ordinary meaning. Reply 9–10 (citing Ex. 2009, 1–2).

With regard to "processing service," Patent Owner asserts that the district court construed that term as "a computing process performed by a communication device for all or part of the application." PO Resp. 20 (quoting Ex. 2009, 2). Patent Owner contends "[t]his is an important construction because it recognizes that the '483 Patent facilitates the sending of instructions from an application server to a communication device to be processed on the device." *Id.* at 20–21. Petitioner, on the other hand, "maintains that claim construction is not necessary," but asserts that "the Petition shows unpatentability under [Patent Owner's] and the district court's constructions." Reply 12.

b) Arguments and Construction in District Court

The district court's order on claim construction does not provide reasoning behind the constructions adopted therein. *See* Ex. 2009. However, we find instructive that the district court, in construing "processing service(s)," essentially adopted the construction proposed by Petitioner (but excluding the negative limitation at the end of Petitioner's proposal). Specifically, Petitioner proposed construing "request for processing service" as a "request for a communication device to perform a computing process for the application *that constitutes more than acting as a speaker or input device*." Ex. 2012, 24 (emphasis added). Petitioner similarly proposed construing "processing service" as "a computing process performed by a communication device for the application *that constitutes more than acting as a speaker or input device*." *Id.* (emphasis added). The district court adopted Petitioner's proposed construction for "processing

service(s)" except for the italicized portion quoted above, and determined that "request for [a] processing service" should be afforded its "[p]lain and ordinary meaning." See Ex. 2009, 2.

In support of these proposed constructions, Petitioner argued to the district court:

> The specification confirms that the "services" are provided to the "application." It describes that the application server executes an application and sends a "request for processing service" to the communication device. ['483 patent] at 1:53–60. The communication device performs the "processing service" for the application to assist with the interaction between the communication device and the remotely executed application. [*Id.*] at 6:5–10. The claims also all recite that a "request for processing service" is sent to a communication device after the step wherein the application is executed. *See, e.g.*, [*id.* at] Cl. 1, 10, 22 . . . .

Ex. 2012, 26.

Patent Owner, on the other hand, proposed construing "processing service(s)" as "automated operation of a hardware component on [a]/[the] [communication device]/[client device]." Ex. 2011, 14 (alterations in original). Patent Owner argued that the "processing service(s)" are "'automated' at least because they are controlled by computer code instructions." *Id.*

Petitioner argued that Patent Owner's proposed construction for "processing service(s)" was under-inclusive in requiring "automated operation," reasoning that "the specification gives examples of 'processing services' that are not 'automated' and instead require user input to the processing service." Ex. 2012, 27. "For instance," Petitioner continued, "the application server may communicate a 'voice recognition software program' to 'assist client 18a in executing one or more queries associated

with the VoiceXML-based application.' . . . To perform the 'processing service,' the communication device needs user input. This processing service is thus not an 'automated operation.'" *Id.*

Patent Owner responded by characterizing Petitioner's argument as "conflat[ing] the *processing service* (i.e., the activity performed by the device) with the *user's interaction with the device* (i.e., the user's spoken response to the microphone in the communication device)." Ex. 2014, 18–19. Patent Owner then asserted that human interaction does not provide the automated processing that Patent Owner asserts is required by the '483 patent claims:

> Humans do not process computer code instructions the same way a communication device does. This is the same mistake [Petitioner] makes in every one of its IPR Petitions, where it argues that playing an audio prompt on the host side of the system for the user to listen to on a telephone call is a "request for processing service." It is not, because it does not provide for any processing of instructions on the client device—it solicits only a spoken or touchtone response from the user, which is processed on the host side. In contrast, in the ['483 patent] . . . the application server transmits executable instructions to the communication device. Contrary to [Petitioner's] under-inclusive argument, this processing is "automated" (as in [Patent Owner's] construction) because it results from the automatic processing of instructions on the communication device. For example, if the instruction to the communication device is to activate a microphone and listen for a spoken response, that instruction is executed whether the user gives a spoken response or not. [Petitioner's] example therefore fails.

Id. at 19.

c) Analysis

Turning first to the term "request," we note that the '483 patent uses this term broadly, spanning different contexts beyond those described in the

excerpts quoted by Patent Owner. *See* PO Resp. 22–23. For example, in describing Figure 1A, the '483 patent describes client 18a as initiating "an information collection and/or retrieval process by communicating a request to application server 24." Ex. 1001, 5:60–62. The '483 patent further states that "any of clients 18*a*–18*n* could initiate the communication session with application server 24 . . . ." *Id.* at 5:64–65. As illustrated in Figure 1, clients 18*a*–18*n* include cell phones, personal digital assistants (PDAs), Wi-Fi devices, and IP phones. *Id.* at Fig. 1A; *see also id.* at 4:2–7. The '483 patent further states that "[l]andline phones and/or IP phones can also communicate with repository 20 and/or application server 24 in the same manner as mobile phones . . . ." *Id.* at 5:49–51. Thus, by describing that a "request" may be sent by a landline phone, and not just by a cell phone or computer, the '483 patent uses the term "request" without limiting it to "an action at the computer-code-instruction level," as Patent Owner argues. *See* PO Resp. 22. We, therefore, do not adopt Patent Owner's proposed construction of "request." We do not need to further construe that term to resolve the parties' disputes herein.

Turning next to "processing services," we note that the '483 patent describes "processing services" in the context of a "thin-client" as the client device. *See, e.g.*, Ex. 1001, 3:65–4:1. The '483 patent states that such a client "may include, for example, a wireless device, a voice over IP device, a desktop computer, a laptop computer, a personal digital assistant, a cell-phone, a Wi-Fi device, a work station, a mainframe computer, a mini-frame computer, a web server, or any other computing and/or communicating device." *Id.* at 4:2–7. The '483 patent further describes the processing services provided by a thin-client as "execut[ing] portions of code to assist with the interaction with remotely executed application 28." *Id.* at 6:7–11.

By way of example, the '483 patent describes the application server as executing "a VoiceXML-based application" that enables the application server to interact with and collect information from the client. *Id.* at 6:26–29. In that example, the application server communicates a voice recognition software program to the client, which the client then uses to convert a user's spoken responses to a series of queries into data that is packetized and communicated, in a packet-based communication, back to the application server. *Id.* at 6:44–65. The application server then "receives and decodes the user's responses to each of the queries associated with the Voice XML-based application." *Id.* at 7:1–3.

Thus, in the context of the '483 patent, a "request for processing service" comes from, e.g., a server, and encompasses a request for a client device to process a user's spoken responses into, e.g., packetized data that can then be returned to the server for use in executing the application. This description is consistent with the construction of "processing service" adopted by the district court, as "a computing process performed by a communication device for all or part of the application" (Ex. 2009, 2), which, as noted above, is a broader version of what Petitioner advocated before the district court (Ex. 2012, 24) and is the same as what Patent Owner advocates here (PO Resp. 20–21).

We, therefore, construe "processing service" as "a computing process performed by a communication device for all or part of the application."

3. "application"

Independent claims 1, 10, and 22 recite, essentially, an "application" that is executed by an application server that is remote from a communication device (e.g., client device). Ex. 1001, 13:11–13, 14:22–23, 15:20–23.

Patent Owner states that the district court construed the term "application[]" according to "its plain and ordinary meaning." PO Resp. 21. Patent Owner purportedly agrees with the district court's approach, but further contends that, consistent with the use of the term in the '483 patent and in the cited prior art, the ordinarily skilled artisan "would understand that an application is not merely a script or variable *used by an application* to interact with a user or communication device." *Id.* at 22.

Petitioner did not propose a construction in the Petition. Pet. 5. In response to Patent Owner's proposal, Petitioner asserts that "[t]he plain meaning of 'application' in the '483 patent is 'functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients . . . or users of [the] system.'" Reply 5 (quoting Ex. 1001, 4:24–28) (second two alterations in original).

As discussed in more depth below, the parties' dispute regarding the meaning of "application" is material to whether Gilmore's VoiceXML scripts are excluded from the scope of "application(s)" as recited in the '483 patent claims, as Patent Owner contends. *See* PO Resp. 33–36 (arguing that VoiceXML scripts are not applications but are scripts used by an application); *but see* Reply 13–14 (arguing that VoiceXML scripts provide the functionality of an application as described in the '483 patent). We preview that dispute here to provide context for the parties' competing constructions.

The '483 patent provides an explicit description of the term "application," stating:

> As used throughout this document, the term "application" *refers to functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients 18 or users of system 10.* In one particular non-

> limiting example, application 28 comprises a series of queries requesting information from and/or presenting information to a user of client 18. In some cases, applications 28 may include, for example, a Voice XML-based application, an HTML-based application, an XML-based application, an XIVR-based application, or a combination of these or other application formats. Applications 28 may comprise, for example, software, firmware, code, portions of code, a program, a web-page, information compilations, and/or a combination of these or any other types of utilities. In other embodiments, database 22 may be capable of storing, for example, one or more functions and/or other information.

Ex. 1001, 4:24–40 (emphasis added). This broad description includes not just "software" and "program(s)," but also includes, e.g., "a series of queries requesting information" as well as "information compilations." *Id.* As such, this definition is broader than Patent Owner's apparent contention that the "plain and ordinary meaning" of the term "application" is an executable program, which does not encompass merely a "script" that may be "used by an application." *See* PO Resp. 22; Sur-reply 4 ("While there may be a voice application that is executed in *Gilmore*, it is not the script files Petitioner consistently relies on in its Petition.").

At oral argument, Patent Owner argued that the Specification's use of the term "comprises" in describing the above-quoted example of an application that "comprises a series of queries requesting information from and/or presenting information to a user of client 18" means that a "series of queries requesting information" is *not* sufficient to constitute an "application." Tr. 54:2–7. That is, Patent Owner argued that use of the open-ended term "comprises" means that *more is required* for an application than the listed items, and thus the above-quoted description means only that, for example, a "series of queries" could be "*part of* an application or a piece

of an application," but is not an "application in and of itself." *Id.* at 55:12–17 (emphasis added).

Patent Owner's argument is unavailing. From a logical standpoint, if the Specification were listing items that are merely a *portion* of some larger (albeit undefined) "application" entity, it would not list both "code" as well as "portions of code," much less include broader categories of "software" and "program[s]" in the same list. The more logical reading of the quoted passage is that any one of the listed items is an example of an "application," as long as it provides "functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients 18 or users of system 10." *See* Ex. 1001, 4:24–28.

Consistent with the description provided in the '483 patent, we construe the term "application" as "functionality that is capable of facilitating the ability to collect information from, and/or present information to, one or more client devices or users."

4. Other Terms

We determine that we do not otherwise need to expressly construe any other terms for purposes of this Decision. *See Nidec Motor Corp.*, 868 F.3d at 1017.

D. Ground 1: Asserted Obviousness over Gilmore and Dodrill

In Ground 1, Petitioner contends claims 1, 3, 4, 6–10, 12, 14, 15, 17, 18, and 20–28 are unpatentable under 35 U.S.C. § 103(a) over the combination of Gilmore and Dodrill. Pet. 6–70.

1. Overview of Cited References

a) Gilmore (Ex. 1005)

Gilmore is a published U.S. Patent Application entitled "Dynamic Content Generation for Voice Messages." Ex. 1005, code (54). Gilmore

was published on November 20, 2003 (*id.* at code (43)), and is thus prior art under 35 U.S.C. § 102(b). Pet. 1. Patent Owner does not dispute the prior-art status of Gilmore.

Gilmore's method "simulate[s] a conversation with the caller" using an automated voice response system having a voice gateway that presents a generated voice message to a telephone caller. Ex. 1005 ¶¶ 10, 39; *see also id.* ¶ 3. Figure 2 shows such a voice response system and is reproduced below.

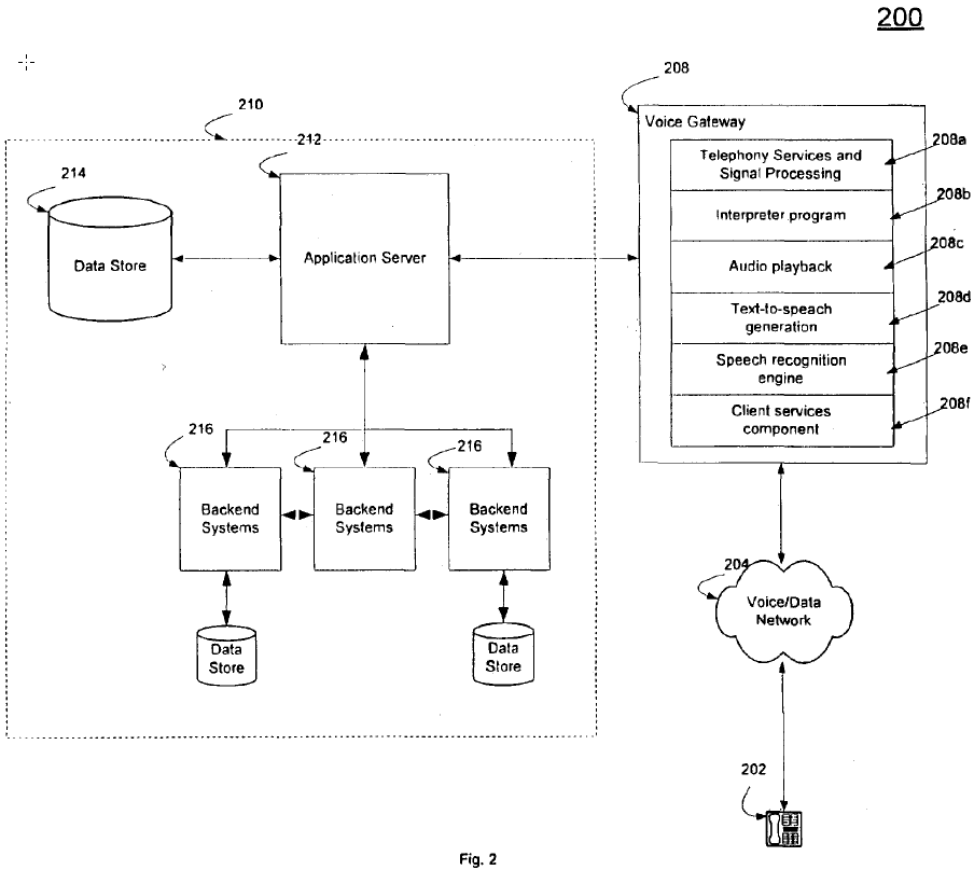

Figure 2 shows a block diagram of a voice communications system and associated components. Ex. 1005 ¶ 17.

As shown in Gilmore's Figure 2, users of voice communications device 202, e.g., a telephone, place calls using voice/data network 204. *Id.* ¶¶ 33, 38. Such networks include

> a circuit-switched voice network such as the public switched telephone network (PSTN), a packet-switched data network, or any other network able to carry voice. Data networks may include, for example, Internet protocol (IP)-based or asynchronous transfer mode (ATM)-based networks and may support voice using, for example, Voice-over-IP, Voice-over-ATM, or other comparable protocols used for voice data communications.

Id. ¶ 31; *see also id.* ¶ 36. The "[i]ncoming calls are answered by the telephony services and signal processing component 208a of the voice gateway 208" (*id*. ¶ 38), i.e., the voice gateway "responds to the calls in accordance with a voice program" (*id.* ¶ 33). In particular, an interpreter program in the voice gateway responds to the incoming calls by "retrieving and executing voice programs," and "application server 212 provides the execution environment for voice applications." *Id.* ¶¶ 39–40. Each voice application "may be a combination of, for example, java servlets, java server pages, other java code, and voice scripts such as VoiceXML or SALT scripts." *Id.* ¶ 40. "In typical operation, the voice gateway 208 retrieves the initial voice script from local memory and/or from the application server 212 and . . . execut[es] the voice-specific instructions within the script." *Id.* ¶ 48. The "voice-specific instruction may be a prompt instruction," i.e., a request for the user to respond with user input. *Id.* ¶¶ 39, 48.

b) Dodrill (Ex. 1006)

Dodrill is a U.S. Patent entitled "Application Server Configured for Dynamically Generating Web Pages for Voice Enabled Web Applications." Ex. 1006, code (54). Dodrill issued on July 20, 2004 (*id.* at code (45)), and thus is prior art under 35 U.S.C. § 102(b). Pet. 1. Patent Owner does not dispute the prior-art status of Dodrill.

Dodrill teaches a "web-based voice messaging system [that] provides voice application control between a [user's] web browser and an application server." Ex. 1006, Abstract. The web browser is provided by a client, e.g., a "thin client." *Id.* at 3:4–9, 3:16–22. The "application server executes a voice-enabled web application by runtime execution of extensible markup language (XML) documents that define the voice-enabled web application to be executed." *Id.* at 5:7–10. Those "XML pages are stored as XML applications and functions 96, for example within a document database accessible by the application server." *Id.* at 9:16–19.

2. Analysis

As discussed herein, we are persuaded Petitioner has established, by a preponderance of the evidence, that claims 1, 3, 4, 6–10, 12, 14, 15, 17, 18, and 20–28 are unpatentable on this ground.

a) Independent Claims 1, 10, and 22

The parties argue the independent claims essentially collectively. We generally address independent claim 10 first, as does Petitioner. *See* Pet. 11 n.2 (noting that "independent claim 1 is substantially identical to claim 10, except it adds a 'thin-client software program' to the user device").

In support of its contention that the combination of Gilmore and Dodrill renders independent claim 10 unpatentable, Petitioner presents evidence that Gilmore teaches or suggests the subject matter of most of the limitations of claim 1, and provides a detailed mapping of each limitation to that evidence: the preamble[10] (Pet. 11–12 (citing Ex. 1005 ¶¶ 29, 31, 33, 36,

[10] Neither party takes a position on whether the preambles to the claims are limiting. Patent Owner does not separately address the preambles. *See generally* PO Resp. To the extent the preambles are limiting, we find Petitioner's evidence persuasive.

Fig. 1)); limitation 10a (*id.* at 13–14 (citing Ex. 1005 ¶¶ 29, 36, Fig. 1)); limitation 10b (*id.* at 14–18 (citing Ex. 1005 ¶¶ 15, 39, 40, 46, 48); limitation 10c (*id.* at 18–20 (citing Ex. 1005 ¶ 31, Figs. 1–2)); limitation 10d (*id.* at 20–25 (citing Ex. 1005 ¶¶ 42, 45–46, Figs. 1–2)); limitation 10e (*id.* at 25–27 (citing Ex. 1005 ¶¶ 34, 39–40, 46, 48, Figs. 1–2)); limitation 10f (*id.* at 27–29 (citing Ex. 1005 ¶¶ 9–10, 48, 53, 74, 115, Figs. 9–14)); limitation 10g (*id.* at 29–30 (citing Ex. 1005 ¶¶ 30, 33)); and limitation 10h (*id.* at 30–32 (citing Ex. 1005 ¶¶ 39, 44, 115, Fig. 13)). Petitioner additionally relies on the combination of Gilmore with Dodrill for limitation 10d, contending "Dodrill confirms and renders obvious the 'database' of [10d]." *Id.* at 23–25 (citing Ex. 1006, 9:16–24, 10:29–36, 12:36–42, 13:62–64). Similarly, for limitation 10f, Petitioner relies on Gilmore in combination with Dodrill, asserting "[t]o the extent Patent Owner argues that a 'request for processing' must be executable, Dodrill renders element [10f] obvious." *Id.* at 11; *see also id.* at 20, 23, 29, 47–50 (citing Ex. 1006, 8:18–24, 9:16–24, 11:61–12:29, 12:36–42, Fig. 7).

As Petitioner notes, and we agree, independent claim 1 recites substantially similar elements as independent claim 10. Pet. 11 n.2, 32. Petitioner analyzes the similar elements recited in independent claim 1 by reference to Petitioner's analysis of independent claim 10. *Id.* at 32–41. Regarding the elements not recited in independent claim 10, Petitioner presents evidence that Dodrill teaches "the at least one communication device comprising a thin-client software program that provides processing services to an application substantially executed at a location remote from the at least one communication device" (limitation 1a2). *Id.* at 33–37 (citing Ex. 1006, Abstract, 3:8–22, 5:6–24, 7:66–8:10, 11:61–12:30, Fig. 4).

Claim 22 is a method claim, and recites steps substantially similar to the functionality recited in claim 10. *See* Ex. 1001, 15:10–29. Petitioner maps the limitations of independent claim 22 to the combined teachings of Gilmore and Dodrill, relying upon and incorporating Petitioner's analysis of claim 10. Pet. 41–44. Patent Owner does not direct any arguments to claim 22 aside from those argued with respect to claims 1 and 10. *See generally* PO Resp. 33–59.

As further discussed below in the context of Patent Owner's arguments, we find Petitioner has demonstrated, by a preponderance of the evidence, that the combination of Gilmore and Dodrill teaches or suggests each of the limitations of independent claims 1, 10, and 22.

Patent Owner argues that Petitioner's showing is deficient because: (1) Gilmore's VoiceXML scripts are not "applications," and therefore the Petition fails to identify applications that are executed by an application server remotely and are moved between a repository (having access to a database) and an application server (limitations 1a2, 1c1, 1c2, 1c3, 1d; 10b, 10c, 10d, 10e; 22b, 22c) (PO Resp. 33–39); (2) the Petition fails to identify an application server that establishes a communication session in response to a request from a communication device (limitations 1a1; 10b; 22a) (PO Resp. 39–46); (3) Gilmore does not disclose an application server that sends a request for processing service to a communication device (limitations 1e, 1f, 1g; 10f, 10g, 10h; 22d, 22e) (PO Resp. 46–53); and (4) Petitioner has failed to establish that the ordinarily skilled artisan would have been motivated to combine the teachings of Gilmore and Dodrill (PO Resp. 53–60).

Certain limitations of claims 1, 10, and 22 are not disputed by Patent Owner. In particular, the recitations in the claims of one or more application

servers coupled to a "first communication link" comprising "a data connection" (limitations 1a3, 1b; 10a; 22a), have not been expressly challenged by Patent Owner. We find Petitioner has shown, by a preponderance of the evidence, that these recitations are satisfied by Gilmore. In particular, Petitioner presents evidence that Gilmore discloses a voice gateway coupled to a voice/data network, which Petitioner persuasively maps to the claimed application server and first communication link, respectively. *See* Pet. 13 (citing Ex. 1005, ¶¶ 29, 36, Fig. 1). Petitioner further presents evidence that Gilmore's voice/data network is a "data connection" because it is a data network that uses Internet protocol (IP)-based, or "other comparable protocols used for voice data connections," which are suitable for transferring data, such as voice data, web pages, or other information. *Id.* at 13–14 (citing Ex. 1005 ¶ 31). We agree that Petitioner's showing is supported by the cited disclosures and the credible testimony of Dr. Lipoff.

We address the sufficiency of Petitioner's showing as to the remaining (disputed) limitations in the context of Patent Owner's arguments below.

(1) Applications moved between a repository (having access to a database) and an application server, and executed by an application server remotely to establish a communication session (limitations 1a1, 1c1, 1c2, 1c3, 1d; 10b, 10d, 10e; 22a, 22b, 22c)

Claims 1, 10, and 22 recite, essentially, that applications are communicated from a repository, having access to a database, to an application server, where they are executed remotely from a client device to establish a communication session. Central to the parties' dispute over these limitations is the proper construction of the term "application," which we have addressed above. *Supra* § III.C.3. We first address application of that construction to Petitioner's showing regarding Gilmore, then we turn to the

parties' disputes regarding whether (1) Gilmore teaches or suggests an application server that executes an application to establish a communication session (limitations 1a1, 10b, and 22a), and (2) Gilmore in combination with Dodrill teaches or suggests the application server receives an application from a repository having access to one or more applications maintained in a database (limitations 1c1, 1c2, 1c3, 1d; 10b, 10d, 10e; 22b, and 22c).

(a) Gilmore's VoiceXML scripts are applications

Patent Owner argues that Petitioner has failed to demonstrate that any of the "application" limitations are satisfied because Petitioner maps the claimed "applications" to Gilmore's VoiceXML scripts, which Patent Owner contends "are not 'applications' as the term is used in the '483 Patent and as it would be understood by [the ordinarily skilled artisan]." PO Resp. 33–34. Patent Owner continues:

> *Gilmore* at most discloses a single VoiceXML-based application that is executed on the application server of *Gilmore*. It accesses VoiceXML script files, processes them as part of the execution of the application, and sends prompts to the voice gateway to be rendered and played over the phone to a user. But the script files themselves are not applications.

Id. at 36 (emphasis omitted).

Petitioner responds that VoiceXML scripts meet the definition of an application as recited in the '483 patent—namely, "functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients." Reply 14 (citing Ex. 1001, 4:24–28).

Patent Owner's arguments are unavailing in part because they are premised on an overly narrow interpretation of the term "application," which we have not adopted. *See supra* § III.C.3. As we discuss above, we agree with Petitioner that an "application," within the meaning of the '483 patent

claims, includes "functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients." *Id.*; Ex. 1001, 4:24–28.

We also agree with Petitioner that a VoiceXML script, as described in Gilmore, falls within the scope of an "application" as recited in the '483 patent claims. In particular, Petitioner presents an annotated version of Figure 1 of Gilmore, reproduced below (Pet. 7):

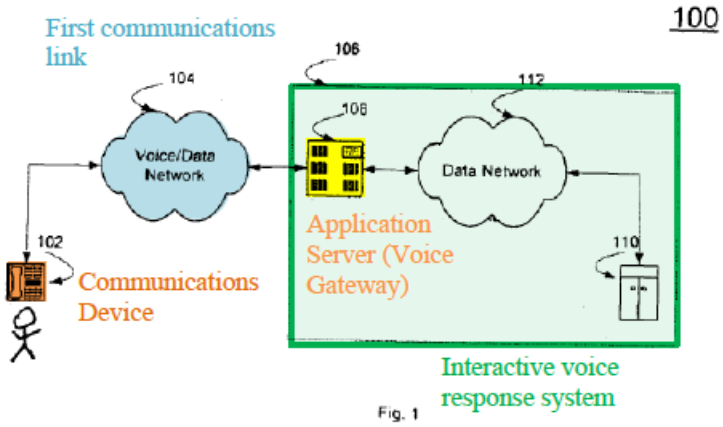

Figure 1 (annotated by Petitioner) is a diagram of an exemplary voice communications system. Ex. 1005 ¶ 16.

Petitioner presents evidence that, as shown in Figure 1, Gilmore discloses a communication system "for remotely executing interactive voice applications at an interactive voice response system 106 (**green**) over a voice/data network 104/204 (blue)." Pet. 6 (citing Ex. 1005 ¶ 31). "Gilmore's voice gateway 108/208 (**yellow**) remotely executes interactive voice applications, e.g., VoiceXML applications, that a user can communicate with using communication device 102/202 (**orange**), for example, by listening to audio outputs and speaking responses." *Id.* (citing Ex. 1005 ¶¶ 33, 34, 39–48).

Petitioner also provides an annotated version of Gilmore's Figure 2, reproduced below, which illustrates various components of Gilmore's interactive voice response system.

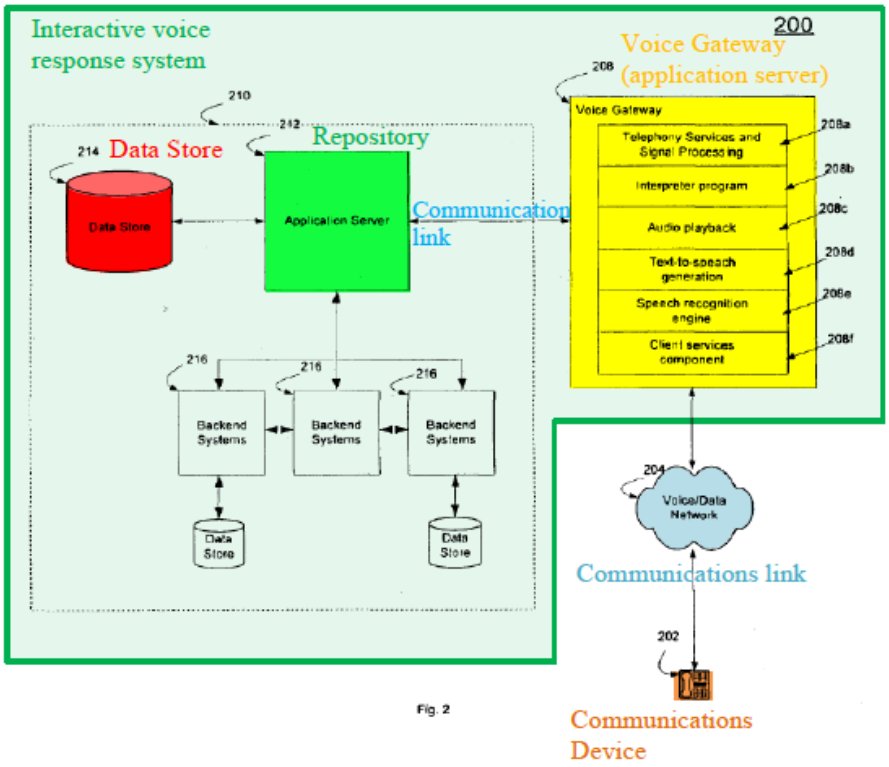

Figure 2 (annotated by Petitioner, Pet. 8) is a block diagram of a voice communications system. Ex. 1005 ¶ 17.

By reference to Figure 2, Petitioner asserts "[a]fter receiving an incoming request from user communication device 102/202 (**orange**), voice gateway 108/208 (**yellow**) 'receives script files from the application server 212 [(**bright green**)] which obtains the files from the data store 214 [(**red**)].'" Pet. 7 (citing Ex. 1005 ¶ 46). Petitioner further presents evidence that Gilmore's

> [v]oice gateway 108/208 then "parses the script by searching and executing the voice-specific instructions within the script." While executing the application scripts, voice gateway 108/208 "generat[es] outgoing speech or prompts using the audio playback component 208c and the text-to-speech generation

> component 208d . . . and listen[s] to spoken responses from the caller using the speech recognition engine 208c."

Id. (citing Ex. 1005 ¶¶ 39, 40, 48) (last three alterations in original); *see also id.* at 28.

Thus, Gilmore discloses that its voice gateway executes voice scripts (e.g., VoiceXML scripts) to create speech prompts for a user and to receive caller responses to given prompts. Ex. 1005 ¶ 39. As such, Gilmore's VoiceXML scripts provide "functionality that is capable of facilitating the ability to collect information from and/or present information to one or more clients"; therefore, we find that Gilmore's VoiceXML scripts qualify as "applications" within the meaning of the '483 patent.

(b) Gilmore teaches or suggests an application server establishing a communication session by executing an application remotely

For the reasons discussed herein, we also find Petitioner has demonstrated by a preponderance of the evidence that Gilmore teaches or suggests that the applications are executed by an application server remotely to establish a communication session with a communication device, as recited in limitations 1c1, 1c2, 1c3, 1d; 10b, 10d, 10e; 22b, and 22c. In particular, as discussed above, Petitioner presents evidence that Gilmore teaches the voice gateway executes voice scripts to create user prompts and to receive user responses to those prompts. Pet. 7, 28–29; *see* Ex. 1005 ¶ 34 ("The voice application system 110 sends voice application programs or scripts to the voice gateway 108 for processing and receives, in return, user responses."), ¶ 48 ("[T]he voice gateway 208 retrieves the initial voice script from local memory and/or from the application server 212 and parses the script using the interpreter program 208*b* . . . by searching and executing the voice-specific instructions within the script); *see also id.* ¶¶ 39, 40. Thus,

we find Gilmore teaches a communication device that sends data to connect to a server (application server and voice gateway, respectively), and the server, in response, executes applications (VoiceXML scripts) to establish a communication session with the communication device and simulate a conversation with a caller. *See id.* ¶¶ 34, 38, 40, 48.

Patent Owner argues Gilmore fails to teach executing an application to establish a communication session because "the 'execution' of VoiceXML scripts in *Gilmore* is not the same thing as the execution of an application in *Gilmore* (and because the execution of the application in *Gilmore* does not happen on the alleged application server of *Gilmore*)." PO Resp. 36 (emphasis omitted). Patent Owner's argument is unavailing, as noted above, because it is premised on an overly narrow interpretation of the term "application," which we have not adopted. *See supra* § III.C.3. Because we agree with Petitioner that Gilmore's VoiceXML scripts fall within the scope of an "application," as recited in the '483 patent claims, we also agree, for the reasons stated above, that execution of those scripts on Gilmore's voice gateway satisfies the requirement in the '483 patent claims of executing an application by the server. We also agree, for the reasons stated above, that Gilmore's voice gateway establishes a communication session with a communication device by executing an application (VoiceXML script).

(c) Gilmore, alone or combined with Dodrill, teaches or suggests applications moved to an application server from a repository having access to a database

For the reasons discussed herein, we find Petitioner has demonstrated by a preponderance of the evidence that Gilmore, alone or in combination with Dodrill, teaches or suggests that the applications are moved between a

repository (having access to a database) and an application server, as recited in limitations 1c2, 1c3, 10d, and 22b.

Petitioner presents evidence that Gilmore discloses an application server that receives an application from a repository having access to one or more applications maintained in a data store coupled to the repository, and Gilmore alone, or in combination with Dodrill, renders obvious the data store being a "database." Pet. 20. In particular, Petitioner provides annotated versions of Gilmore's Figures 1 and 2, reproduced below.

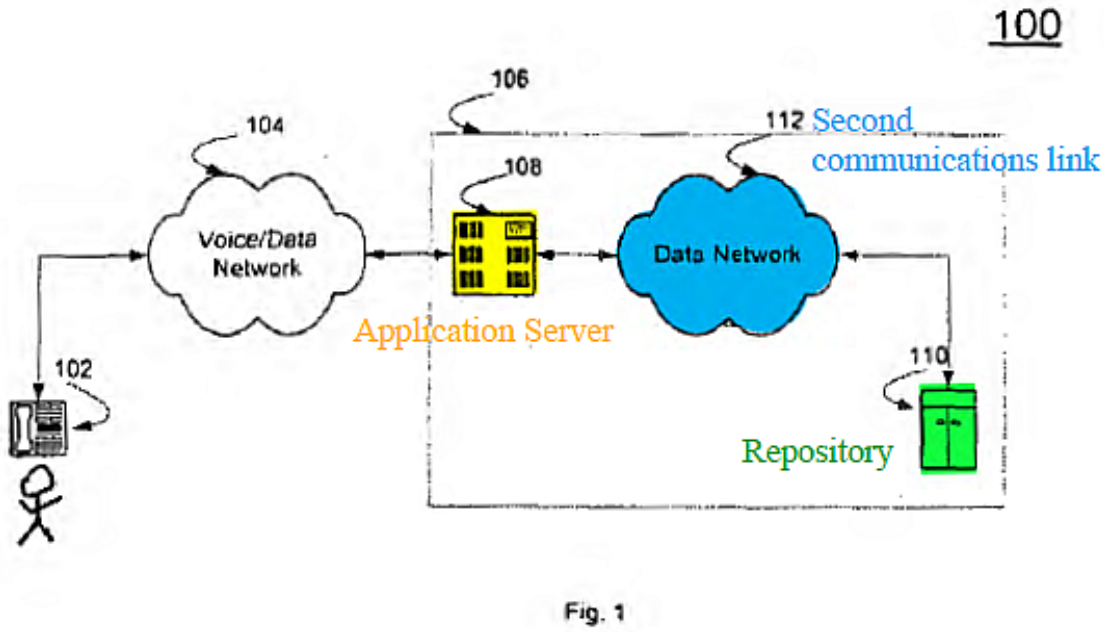

Figure 1 (annotated by Petitioner, Pet. 21) is a block diagram of a voice communication system. Ex. 1005 ¶ 16.

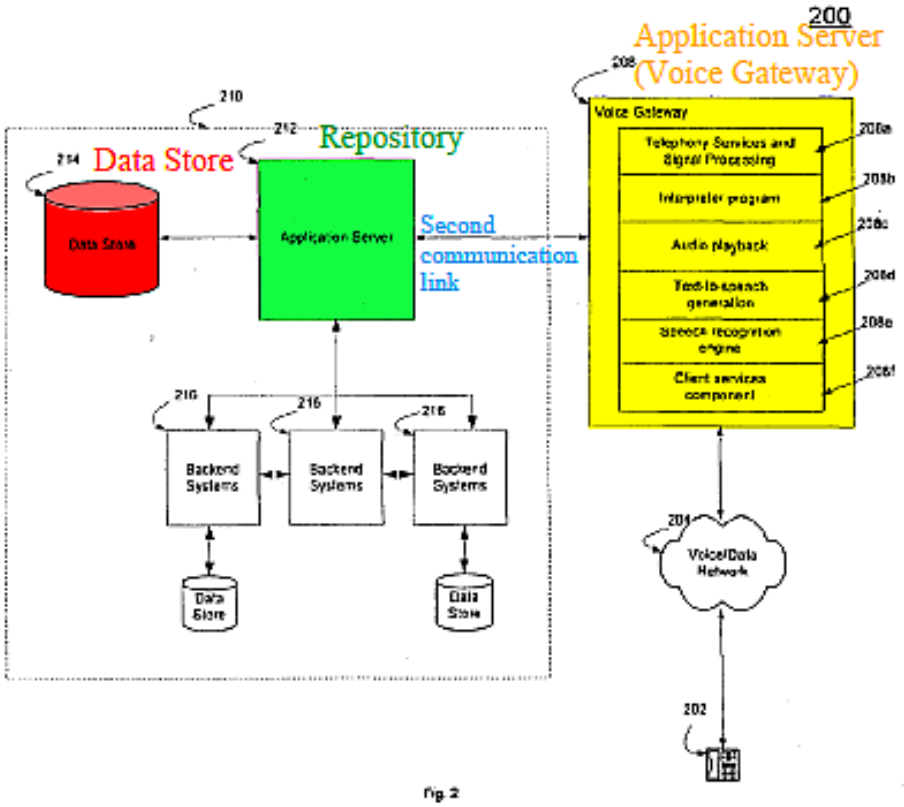

Figure 2 (annotated by Petitioner, Pet. 22) is a block diagram of a voice communication system. Ex. 1005 ¶ 17.

By reference to annotated Figures 1 and 2, reproduced above, Petitioner presents evidence that Gilmore discloses that "voice gateway 208 receives script files from the application server 212 which obtains the files from the data store 214." Pet. 20 (citing Ex. 1005 ¶ 46). Voice gateway 108/208 (application server, annotated yellow above) receives the voice application to be executed (e.g., VoiceXML scripts) over data network 112 (second communication link, annotated blue above, double-headed arrow in Figure 2) from application server 212 (annotated bright green above), which corresponds to the claimed "repository." *Id.* Application server 212 (repository) accesses the voice applications maintained in data store 214 (annotated red above), as shown by the double-headed arrow in Figure 2, and sends the application to voice gateway 108/208. *Id.* With regard to the

"repository having access to one or more applications maintained in a database" (limitations 1c2, 10d, 22b), Petitioner contends Gilmore's data store 214 is a database, even though not explicitly referred to as such, and further asserts "[i]n any event, Dodrill teaches storing interactive voice applications, such as XML voice applications, in 'application document database 96.'" *Id.* at 23 (citing Ex. 1005 ¶¶ 40, 42; Ex. 1006, 9:16–24, 12:36–42; Ex. 1021 ¶¶ 97, 98).

Patent Owner challenges Petitioner's showing by arguing Gilmore does not disclose a data store of applications:

> Petitioner identifies the moving of script files between *Gilmore*'s application server and gateway as satisfying this element, but *Gilmore* is clear that while its VoiceXML scripts are used by an application, they are not themselves applications. Petitioner's identification of the "data store" of *Gilmore* therefore fails to establish the challenged claims' requirement of a database of applications. Indeed, as Petitioner acknowledges, *Gilmore* defines the data store as "a storage device that stores files necessary for execution of the voice application," such as "script files, prompt files, grammar files," etc. *See* Petition at 22–23 (citing *Gilmore* at ¶ [0042]). By defining the script files as files "necessary for execution of the voice application," *Gilmore* makes clear that the files are not "the voice application" itself.

PO Resp. 37 (emphases omitted).

As with Patent Owner's other arguments regarding the "application" limitations, Patent Owner's argument is unavailing because it is premised on an overly narrow interpretation of the term "application," which we have not adopted. *See supra* § III.C.3. Because we agree with Petitioner that Gilmore's VoiceXML scripts fall within the scope of an "application," as recited in the '483 patent claims, we also agree, for the reasons stated above, that Gilmore's disclosure of moving VoiceXML script files from a

repository (Gilmore's application server) to an application server (Gilmore's voice gateway) satisfies the '483 patent claims' recitation of applications moved between a repository and an application server.

We also agree that Gilmore's disclosure of the repository being coupled to a data store satisfies the claim's recitation of a repository having access to a database. *See* Pet. 23; Ex. 1005 ¶ 42 ("The data store 214 is a storage device that stores file necessary for execution of the voice application . . . includ[ing] script files, prompt files, grammar files, and text-to-speech (TTX) text files."). Aside from challenging the type of files being stored in Gilmore's data store (e.g., VoiceXML scripts, which Patent Owner contends are not "applications"), Patent Owner does not challenge Petitioner's evidence showing that Gilmore's data store satisfies the database limitation. *See* PO Resp. 37–39. We further find, in the alternative, that even if Gilmore's data store did not qualify as a database, Dodrill teaches storing interactive voice applications, such as XML voice applications, in "application [document] database [96]." Ex. 1006, 9:16–24, 12:36–42. We discuss below Petitioner's showing regarding the motivation for the ordinarily skilled artisan to have combined Dodrill's teachings with Gilmore.

(2) Application server establishes a communication session in response to a request by a communication device (limitations 1a1, 1b, 10b, 22a)

Petitioner relies on Gilmore to teach "at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session," as recited in independent claim 10 (limitation 10b), and similarly recited in independent

claims 1 (limitations 1a1, 1b) and 22 (limitation 22a). *See* Pet. 14–18 (citing Ex. 1005 ¶¶ 33, 39, 40, 46, 48), 32–33, 37, 41–43.

In particular, Petitioner presents evidence that Gilmore discloses establishing a communication session by voice gateway 108/208 "executing a VoiceXML application that allows the user to begin interacting with voice gateway 108/208 (application server) by responding to prompts or queries." Pet. 15. According to Petitioner,

> [i]n Gilmore, voice gateway 108/208 begins (e.g., establishes) the communication session when interpreter 208b executes the interactive VoiceXML application and send[s] prompts that the user can interact with and respond to . . . . This is because executing the VoiceXML script at voice gateway 208 sends a prompt, which allows the user to interact with a VoiceXML interpreter and application.

Id. (citations omitted) (citing Ex. 1005 ¶¶ 39, 40, 46, 48; Ex. 1021 ¶ 87). Thus, "[e]xecuting the interactive voice application on voice gateway 108/208 establishes a communication session with the user's voice communications device 102/202 over the network connection 104/204 (first data connection)." *Id.*

Patent Owner challenges Petitioner's showing on three grounds: (1) the Petition incorrectly maps the claimed "application server" to Gilmore's voice gateway and the claimed "repository" to Gilmore's application server (PO Resp. 40); (2) the communication session in Gilmore is not established in response to a request sent by a communication device (*id.* at 40–42); and (3) the rendering of a VoiceXML script in Gilmore is not a communication session as the term is used in the '483 patent (*id.* at 42–46). We find Petitioner's showing to be persuasive and we disagree with Patent Owner's arguments, addressing each of these contentions in turn below.

(a) Gilmore teaches or suggests an application server and a repository

Patent Owner's contention that Petitioner has incorrectly mapped the claimed application server and repository to Gilmore's voice gateway and application server, respectively, is unavailing. *See* PO Resp. 40. Notably, Patent Owner does not particularly challenge whether Gilmore's voice gateway qualifies as an application server, or whether Gilmore's application server qualifies as a repository. Rather, the premise of Patent Owner's argument is that Gilmore's VoiceXML scripts are *not applications*; it is from this premise that Patent Owner contends "*Gilmore* does not describe the moving of applications between a repository and an application server." *Id.* In other words, Patent Owner's argument focuses on the nature of the files being moved (whether they are "applications") and not on the nature of the locations themselves (application server / repository).

We disagree with Patent Owner's argument because it is premised on an overly narrow interpretation of the term "application," which we have not adopted. *See supra* § III.C.3. Because we agree with Petitioner that Gilmore's VoiceXML scripts fall within the scope of an "application," as recited in the '483 patent claims, we also agree, as also discussed above (§ III.D.2.a)(1)(c)), that Gilmore teaches moving applications (VoiceXML scripts) between an application server (Gilmore's voice gateway) and a repository (Gilmore's application server), as recited in the '483 patent claims.

(b) Gilmore teaches or suggests establishing a communication session in response to a request from a communication device

Patent Owner next argues that Gilmore's communication session is not established in response to a request sent by the communication device. PO Resp. 40–43. In particular, Patent Owner argues,

> it is clear from *Gilmore* that it is the action of the telephony service (*i.e.*, on the voice gateway) that initiates the alleged communication session. The "request" must therefore be the call from the user, the answer, and the subsequent action by the telephony service to interact with the VoiceXML interpreter context that requests a session.

Id. at 41. Patent Owner further asserts "[t]he call by itself without the telephony service and associated logic does not request *anything* from a VoiceXML script or interpreter." *Id.* at 42. Patent Owner then posits that "if the telephone call, the answer, *and* the subsequent processing constitute[] the 'request to establish a communication session,' then the 'request' is not sent by the communication device, as required in the claims." *Id.* In other words, Patent Owner argues that it is the action of multiple devices (both the user calling via the communication device and the interim processing by the voice gateway) that constitutes a "request."

Patent Owner's contentions are unavailing. As in the Institution Decision, we find that a communication device placing a call to a voice response system is a request to establish a communication session. *See* Dec. 25. In particular, we agree with Petitioner's contention (supported by the testimony of Dr. Lipoff regarding the contemporaneous understanding of the ordinarily skilled artisan, which we credit) that "the call to the interactive voice response system is a 'request' because it represents the user's action to initiate retrieval and execution of the VoiceXML script that establishes the communication session." Pet. 18 (citing Ex. 1021 ¶ 90). We also agree with Petitioner that even if Gilmore's voice gateway performs an intermediate processing step between the user contacting the IVR (interactive voice response) system and executing the application, the user's initial call to the IVR system is still a "request" that starts the process and

results in the voice gateway executing the application. *See id.*; Reply at 17–18; *see also* Ex. 1023, 39:6–18 (Patent Owner's expert, Dr. Rhyne, agreeing that the user calls into Gilmore's IVR system to interact with it).

(c) Gilmore discloses a communication session

Patent Owner next argues that Gilmore's executing VoiceXML scripts does not "establish a communication session." PO Resp. 42–46. As support, Patent Owner makes various contentions that Gilmore discloses merely a "traditional IVR system," and thus establishes only a "call session" and not a "communication session." *Id.* at 43 (emphasis omitted). Patent Owner distinguishes the '483 patent as being about "connecting a computing device to a server so it can receive instructions requesting processing services and thus take on some of the application processing load, not making telephone calls." *Id.* Patent Owner further asserts that "any sending and receiving of 'instructions' in *Gilmore* occurs over the link between the voice gateway and the application server of *Gilmore*—not between an application server and a communication device." *Id.* at 44 (citing Ex. 2007 ¶¶ 112–114). Patent Owner further contends that the need for a "voice gateway" in Gilmore underscores that Gilmore discloses merely telephone calls to an IVR system, because the voice gateway "acts to support telephone calls." *Id.* at 45. In contrast, contends Patent Owner, because the '483 patent does "not relate to telephone calls, there is no need for a voice gateway." *Id.*

Patent Owner's arguments boil down to the contention that Gilmore's "call session" (in Patent Owner's words) cannot be a "communication session" as claimed because it lacks the ability to send a request for processing services from the application server to the communication device. PO Resp. 43. As such, Patent Owner's arguments actually implicate

a different limitation—the application server communicating a request for processing service to the communication device—which we address in the next section.

With regard to whether Gilmore teaches or suggests establishing a communication session, Patent Owner's arguments are unavailing because they are based on an unduly narrow reading of "communication session" as excluding voice telephone calls. As we note *supra* Section III.C.1, the Specification broadly describes client communication devices as follows:

> Each client may include, for example, a wireless device, a voice over IP device, a desktop computer, a laptop computer, a personal digital assistant, a cell-phone, a Wi-Fi device, a workstation, a mainframe computer, a mini-frame computer, a web server, or any other computing and/or communicating device.

Ex. 1001, 4:2–7. The Specification also discloses that "[l]andline phones and/or IP phones can also *communicate* with repository 20 and/or application server 24 *in the same manner* as mobile phones." *Id.* at 5:49–51 (emphases added). Gilmore similarly describes a client (communication device) as "a device able to interface with a user to transmit voice signals across a network such as, for example, a telephone, a cell phone, a voice-enabled personal digital assistant (PDA), or voice-enabled computer." Ex. 1005 ¶ 30; *see* Pet. 6. Thus, both the '483 patent and Gilmore contemplate use of similar communication devices, including landline phones. We, therefore, do not agree with Patent Owner's contention that a telephone call in Gilmore cannot qualify as a "communication session" as recited in the '483 patent claims.

As we note above in Section III.C.1, we construe a "communication session" as encompassing the process of a communication device communicating information to, and/or retrieving information from, another

communication device. We find that Gilmore discloses a communication device (voice communication device 102/202), such as a landline phone, an IP phone, or cell phone (Ex. 1005 ¶¶ 30, 36, Fig. 2), and such a communication device communicating information to, and/or retrieving information from, Gilmore's voice gateway falls within the scope of a "communication session," as recited in the '483 patent claims. In particular, in Gilmore, interpreter 208b on voice gateway 108/208 executes the interactive VoiceXML application and send prompts that the user can interact with and respond to using the communication device. *E.g.*, Ex. 1005 ¶¶ 39, 40, 46, 48, Fig. 2; Ex. 1021 ¶ 87. In this manner voice gateway 208 "is able to simulate a conversation with the caller." Ex. 1005 ¶ 39. We find such a simulated conversation, in which information is exchanged, is a communication session.

Based on the foregoing, we determine Petitioner has demonstrated by a preponderance of the evidence that Gilmore teaches "at least one of the one or more application servers adapted to execute an application to establish a communication session with at least one communication device coupled to the data connection in response to a request from the at least one communication device to establish the communication session," as recited in claim 10 and similarly recited in claims 1 and 22.

(3) Application server communicates a request for processing service to the communication device over a data connection, the request comprising one or more queries for information from a user (limitations 1a2, 1e, 1f, 1g; 10f, 10g, 10h; 22d, 22e)

Petitioner relies on Gilmore in combination with Dodrill to teach "wherein the at least one application server is operable to communicate a request for processing service to the at least one communication device . . . over the data connection," and "wherein the request for processing service

comprises one or more queries for information from a user," as recited in claim 10 (limitations 10f, 10g) and similarly recited in claim 1 (limitations 1a2,[11] 1e, 1f, 1g) and claim 22 (limitations 22d, 22e). Pet. 27–30 (citing Ex. 1005 ¶¶ 9–10, 48, 53, 74, 115, Figs. 9–14), 33–37, 40–41, 43–44, 47–53 (citing Ex. 1006, 8:18–24, 9:8–10, 11:61–12:29, Fig. 7; Ex. 1021 ¶¶ 161–172).

As discussed above (§ III.C.2), we construe "processing service" as "a computing process performed by a communication device for all or part of the application." Thus, a request for processing service communicated by an application server to a communication device includes a request by the application server that the communication device perform a computing process for all or part of the application.

Petitioner presents evidence that Gilmore discloses the voice gateway "is operable to communicate a request for processing service, such as a prompt or message to which the user can respond, to user communications device 102/202 over voice/data network 104/204." Pet. 27–28. In particular, Petitioner asserts that "[w]hen voice gateway 108/208 executes a VoiceXML application, it generates an audio prompt that requests the user to input additional information, such as entering a PIN or passcode." *Id.* at 28 (citing Ex. 1005 ¶ 115). Petitioner relies on an example described in Gilmore, in which a "dynamic VoiceXML script may be converted into a dynamic voice message by the voice gateway 208 and presented to a caller" (*id.* (citing Ex. 1005 ¶¶ 9, 10, 53, 74)), wherein the voice gateway parses the

[11] In claim 1, the "processing services" are provided by specifically by "a thin-client software program" in the communication device. Ex. 1001, 13:10–15. We address this limitation below.

script to search for and execute "voice-specific instructions within the script" (*id.* (citing Ex. 1005 ¶ 48)).

Petitioner further asserts Gilmore discloses "[a] 'prompt instruction' is executed 'either by accessing and playing an audio file specified by the prompt instruction or by employing the text-to-speech generation component 208d to translate and play text included in the prompt instruction,' which is then presented to the user for a response." *Id.* (quoting Ex. 1005 ¶ 48). Relying on the testimony of Dr. Lipoff, Petitioner asserts "[o]ne skilled in the art would have understood that generating outgoing prompts that the user responds to is communicating a request for processing service to the user voice communication device 102/202." *Id.* at 29 (citing Ex. 1021 ¶ 109).

As an alternative to relying on Gilmore alone, Petitioner also presents evidence that "Dodrill discloses that a server executing an interactive voice application, such as Gilmore's voice gateway 108/208, can transmit instructions to the user's communication device, such as the script containing XML tags shown in Dodrill's Figure 7." Pet. 47 (citing Ex. 1006, 8:18–24, Fig. 7; Ex. 1021 ¶ 162). Dodrill's XML tags include instructions to present information to the user, such as to play audio files using a "PROMPT" or "autostart" instruction, as shown below. *Id.* (citing Ex. 1021 ¶ 162). These instructions can be sent to the user's voice-enabled device and executed on the device. *Id.* at 48 (citing Ex. 1006, 11:61–12:29; Ex. 1021 ¶ 163). Petitioner further contends that "Dodrill's sending of XML voice code is the same as the '483 patent's disclosure sending an 'executable' that 'may contain information relating to a portion of Voice XML code' to execute on the user's device." *Id.* at 49 (citing Ex. 1001, 9:8–10; Ex. 1021 ¶ 164).

With regard to the thin-client software recited in claim 1 (limitation 1a2), Petitioner presents evidence that Dodrill discloses voice-enabled computers or cell phones that include a thin-client software program that provides processing services to an application executed substantially at a location remote from the communication device. Pet. 33 (citing Ex. 1021 ¶ 125). In particular, Petitioner presents evidence that "[l]ike Gilmore, Dodrill discloses cellular phones and voice-enabled computers, such as thin client 42b, interacting with an interactive voice response system." *Id.* (citing Ex. 1006, 3:8–22, Fig. 2; Ex. 1021 ¶ 125). Dodrill's "thin clients 42b"—like Gilmore's user devices 102/202—access interactive XML voice applications that are executed by a remote server, such as gateserver 92, which "accesses a selected XML page that defines at least part of the voice application to be executed . . . and executes the operation describe[d] by the XML page." *Id.* (citing Ex. 1006, Abstract, 5:6–24; Ex. 1021 ¶ 125) (alterations in original).

Patent Owner focuses its arguments on Petitioner's showing as to Gilmore, arguing that "in *Gilmore* the cited 'request' is an audio prompt—processed on the application server and played over the phone via a voice gateway—for user interaction, not for a processing service. The 'requested' activity is a *user activity*, not a device activity." PO Resp. 46 (emphasis added and omitted). Patent Owner acknowledges that the '483 patent discusses VoiceXML scripts, but states that when the '483 patent does so "it makes clear that the system of the '483 Patent—unlike traditional VoiceXML systems such as *Gilmore*—involves distributing some of the processing functions to the client side for execution." *Id.* at 48 (citing Ex. 1001, 6:36–41 ("In this example, client 18*a* provides application independent processing services to Voice XML-based application 28 executing remotely.")). In contrast, continues Patent Owner, "all processing

of instructions in *Gilmore* (and certainly all processing cited in the Petition) is done on the host side—*i.e.*, by the application server 212." *Id.* at 49 (citing Ex. 1005 ¶ 40). In that regard, Patent Owner challenges Petitioner's reliance on Gilmore's text-to-speech conversion, stating that such conversion and subsequent audio playback is performed *by the application server*, and not by the client device. *Id.* at 51. Patent Owner further asserts that any interaction in Gilmore by a human on the client side, such as spoken commands or responses to the application server's audio prompts, are not a "processing service" within the scope of the '483 patent claims. *See id.* at 50–51.

Petitioner responds by pointing out that the Petition also relies on Gilmore in combination with Dodrill, asserting that Dodrill teaches "sending executable instructions to the user device," thus meeting the construction of "request for processing services" as adopted by the district court and as we have also adopted herein. Reply 21 (citing Pet. 29, 47–62; Ex. 1006, 8:18–24, 11:61–12:30, Fig. 7); *see also* Ex. 2009, 2; *supra* § III.C.2. Patent Owner does not particularly challenge Dodrill's teachings, but asserts that the combination fails because Petitioner has failed to demonstrate that the ordinarily skilled artisan would have combined the teachings of Gilmore with Dodrill. *See* PO Resp. 52–60; Sur-reply 21–24. We address those arguments below in Section III.D.2.a)(4).

We are persuaded by Petitioner's arguments and evidence that Dodrill teaches or suggests that a server executing an interactive voice application can send instructions to be performed on the user device, such as instructions to play audio files for the user. *See* Ex. 1006, 8:18–24, Fig. 7. In particular, Dodrill discloses an application server generating a web page for a user's browser, wherein the web page includes media control to be performed on

the user's device by a plug-in resource. *Id.* at 11:61–12:4. Dodrill's plug-in resource can, for example, play audio files for the user and also receive user input that the resource then matches to an input pattern; the resource may also record and capture user voice input and upload that input. *Id.* at 12:5–30.

We are also persuaded by Petitioner's arguments and evidence that Dodrill teaches or suggests a communication device comprises thin-client software that provides processing services. Pet. 33–34 (citing Ex. 1006, Abstract, 3:8–22, 5:6–24, 11:61–12:30). In that regard, we credit, and rely on, the testimony of Dr. Lipoff to the effect that the ordinarily skilled artisan would have understood that Dodrill discloses an application server sending instructions to a user device, to be executed on the user device (including wherein the user device comprises thin-client software) for implementing various functionality, such as presenting audio or display prompts for a user. Ex. 1021 ¶¶ 124–130, 162–167.

Based on the foregoing, we determine Petitioner has demonstrated by a preponderance of the evidence that Gilmore in combination with Dodrill teaches "wherein the at least one application server is operable to communicate a request for processing service to the at least one communication device . . . over the data connection," and "wherein the request for processing service comprises one or more queries for information from a user," as recited in claim 10 and similarly recited in claims 1 and 22. We also determine Petitioner has demonstrated by a preponderance of the evidence that Gilmore in combination with Dodrill teaches or suggests the "thin-client software" as recited in claim 1.

(4) Combination of Gilmore and Dodrill

As discussed above, Petitioner relies primarily on Gilmore as disclosing the limitations of claims 1, 10, and 22, but additionally relies on the teachings of Dodrill in combination with Gilmore as to certain limitations—namely, with regard to a repository having access to a "database" (limitations 1c2, 10d, 22b) (Pet. 20, 23, 39, 42); and with regard to the application server communicating a request for processing service to the communication device (limitations 1a2, 1e, 1f, 1g; 10f, 10g, 10h; 22d, 22e) including wherein the user device comprises thin-client software (limitation 1a2) (*id.* at 27–32, 33–37, 40–41, 43–44). We address below Petitioner's showing as to the motivation for combining the teachings of these references, followed by Patent Owner's challenges to that showing.

(a) Database coupled to a repository (limitations 1c2, 10d, 22b)

As noted above, we find that even if Gilmore's data store did not qualify as a database, Dodrill teaches storing interactive voice applications, such as XML voice applications, in "application document database 96." *See supra* § III.D.2.a)(1)(c) (citing 1006, 9:16–24, 12:36–42). Thus, the combination of Gilmore and Dodrill teaches or suggests the database limitations (limitations 1c2, 10d, 22b).

With regard to motivation for the combination, Petitioner reasons that the ordinarily skilled artisan would have been motivated to combine Dodrill's database with Gilmore's storage because: (1) both are directed to remotely-executing voice applications; and (2) the ordinarily skilled artisan would have understood that using the structure format of Dodrill's database would have made retrieving voice applications more efficient. Pet. 23–24 (citing Ex. 1021 ¶ 99). Relying on the testimony of Dr. Lipoff, Petitioner

explains that databases were "a well-known type of storage system when the '483 patent was filed," and the ordinarily skilled artisan would have understood that using Dodrill's database as Gilmore's data store "would result in the ordinary and expected operation of storing applications, which can be retrieved from the database for execution." *Id.* at 24–25 (citing Ex. 1021 ¶ 100).

We find that Petitioner has articulated reasoning supported by sufficient rational underpinning to support the combination of Gilmore and Dodrill as to limitations 1c2, 10d, and 22b. We address below (§ III.D.2.a)(4)(c)) Patent Owner's challenges to the combination of Gilmore and Dodrill.

(b) Application server communicates a request for processing service to the communication device / thin-client software (limitations 1a2, 1e, 1f, 1g; 10f, 10g, 10h; 22d, 22e)

As noted above (§ III.D.2.a)(3)), we are persuaded by Petitioner's evidence that Gilmore in combination with Dodrill teaches or suggests that an application server communicates a request for processing service to the communication device. *See* Pet. 29, 33–37, 47–62; Reply 21.

With regard to motivation for the combination, Petitioner reasons that the ordinarily skilled artisan would have been motivated to combine Dodrill's transmission of an instruction to present information to the user with Gilmore's interactive voice response system because: (1) both describe presenting voice prompts to a user on the user's voice-enabled PDA, cell phone, or voice-enabled computer, with Dodrill describing different options for presenting information, including sending the user an executable file that contains instructions to present voice prompts on the user's computer (Pet. 50 (citing Ex. 1021 ¶ 169)); (2) the ordinarily skilled artisan would

have understood that incorporating Dodrill's teachings would provide additional functionality of processing instructions on the user's device to play an embedded file or audio file, thus distributing some processing tasks and reducing the computational load on the application server (*id.* at 51 (citing Ex. 1021 ¶ 170)); and (3) incorporating Dodrill's option to send an executable with instructions to play an audio file would add functionality to Gilmore's system by combining known operations and functions in the expected manner when combined (*id.* at 52 (citing. Ex. 1021 ¶ 172)). Petitioner presents similar reasoning and evidence in support of its arguments regarding the communication device comprising thin-client software, as recited in claim 1 (limitation 1a2). *Id.* at 34–37 (citing Ex. 1021 ¶¶ 128, 130).

We determine Petitioner has sufficiently set forth articulated reasoning with sufficient rational underpinning as to why an ordinarily skilled artisan would have had reason to combine Gilmore and Dodrill. As Petitioner persuasively reasons, Dodrill and Gilmore both explain "that the user can interact with the interactive voice application using a voice-enabled computer, cell phone, or PDA." *See* Pet. 52. In particular, Gilmore describes playing voice scripts to prompt a user for information. Ex. 1005 ¶¶ 33, 115. And Dodrill teaches sending the user an executable file that contains instructions to present the voice prompts on the user's computer. Ex. 1006, 8:17–22, 11:61–12:29.

Petitioner additionally presents the testimony of Dr. Lipoff (which we find persuasive and credit) in support of the contention that incorporating Dodrill's option into Gilmore's system would result in merely adding functionality to Gilmore's system in which "[t]he executed instruction does not change, but instead merely requires that the voice-enabled computer

execute the instructions and play the audio using processing instructions already known in the art, which was a conventional and well-known technique by those skilled in the art." Pet. 52–53 (citing Ex. 1021 ¶ 172). Thus, argues Petitioner (with supporting testimony by Dr. Lipoff), "modifying Gilmore's system to include Dodrill's instruction sent to the user device to present audio prompts merely combines known operations and functions in the expected manner when combined." *Id.* at 53 (citing Ex. 1021 ¶ 172).

Dr. Lipoff presents similar testimony regarding the thin-client software recited in claim 1, opining that the ordinarily skilled artisan "would have been motivated to include a thin client at the voice-enabled device to execute some of the XML operations, such as playing audio prompts, on the device to distribute processing across the system and reduce the processing load on the central system," and would have recognized that incorporating a thin client "to also execute XML operations on the user device" would distribute processing across Gilmore's system, and would operate "as described in Dodrill" by processing the tags on the user device." Ex. 1021 ¶¶ 128, 130. Dr. Lipoff also testifies that "modifying Gilmore's system to include Dodrill's thin client merely combines known operations and functions in the expected manner when combined." *Id.* ¶ 130. We are persuaded by, and credit, the testimony of Dr. Lipoff.

We find Petitioner has provided sufficient evidence and articulated reasoning to explain why, at the time of the filing of the '483 patent, one of ordinary skill would have been motivated to combine the teachings of Gilmore and Dodrill to provide "a request for processing service to the at least one communication device," as recited in claim 10 and similarly recited

in claims 1 and 22. We address below Patent Owner's challenges to the combination of Gilmore and Dodrill.

(c) Patent Owner's contentions

Patent Owner raises several points in arguing that the ordinarily skilled artisan would not have been motivated to combine the teachings of Gilmore and Dodrill. PO Resp. 53–59. In particular, Patent Owner contends: (1) Gilmore and Dodrill are nonanalogous art (*id.* at 53–55); (2) combining the teachings of Gilmore and Dodrill would require fundamental changes to one or both references (*id.* at 55–58); (3) Gilmore teaches away from Dodrill (*id.* at 58); and (4) Petitioner's proposed combination is motivated by hindsight (*id.* at 59). We address each of these contentions in turn below.

(i) Nonanalogous art

Patent Owner's contention that Gilmore and Dodrill are nonanalogous art is premised on three points: (1) Gilmore and Dodrill are not both directed to remotely-executing voice applications because Gilmore's VoiceXML scripts are not applications and Dodrill defines "XML applications" differently than Gilmore and Petitioner do; (2) Gilmore relates to live, interactive telephone calls to an IVR system, whereas Dodrill relates to a user's interaction with a web browser to retrieve voice mails over the Internet; and (3) Gilmore's execution environment is an application server, but Dodrill's execution is done on a web browser on a client device. PO Resp. 53–55 (citing Ex. 2007 ¶¶ 134–136).

The test for determining whether a prior art reference constitutes analogous art to the claimed invention is: (1) whether the prior art is from the same field as the inventor's endeavor, regardless of the problem addressed; and (2) if the reference is not within the field of the inventor's

endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). A reference is "reasonably pertinent" to a problem if it "logically would have commended itself to an inventor's attention in considering his problem." *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379–80 (Fed. Cir. 2007) (quoting *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992)).

Patent Owner's contentions are unavailing because, as Petitioner correctly notes, Patent Owner has not addressed either prong of the test for nonanalogous art. *See* Reply 22. In particular, Patent Owner has not addressed whether either Gilmore or Dodrill are within the *field of the inventor's endeavor*, much less whether they are reasonably pertinent to that field. Rather, Patent Owner compares the fields of endeavor of Gilmore and Dodrill to *each other*, which misses the mark. *See* PO Resp. 53–55; Sur-reply 22–23.

In any event, we agree with Petitioner that both Gilmore and Dodrill are in the same field of endeavor as the '483 patent, which is described as "the field of communication systems, and more particularly to a method and system that enables a communication device to remotely execute an application." Ex. 1001, 1:7–10; *see* Reply 23. Gilmore and Dodrill both describe methods and systems enabling communication devices to remotely execute applications on voice gateway 108/208 (Gilmore) or gateserver 92 (Dodrill). *See* Pet. 6–11; Ex. 1005 ¶¶ 31, 33–34, 39–48; Ex. 1006, Abstract, 5:6–24, 9:12–24, 11:19–26, 11:61–12:30, Fig. 7. Petitioner also notes, and we agree, that Patent Owner's argument that Dodrill's interactive voice applications may be voicemail applications (PO Resp. 53–55) is irrelevant because nothing limits the '483 patent, Gilmore, or Dodrill to particular

types of applications. *See* Reply 23. Rather, all three generally disclose remotely executed interactive voice application systems, making Gilmore and Dodrill analogous art because they are in the same field of endeavor of the '483 patent.

Based on the record before us, we find that both Gilmore and Dodrill are analogous art to the field of invention of the '483 patent.

(ii) Fundamental changes to the prior art

Patent Owner next argues that "[a]lthough both *Gilmore* and *Dodrill* include disclosure concerning XML, the operation of their disclosed embodiments is fundamentally different, and combining them would require changes to one or both references that would render them unsuitable for their intended purpose." PO Resp. 55.

First, with regard to the database limitations (1c2, 10d, 22b), Patent Owner argues that, because Gilmore's applications (VoiceXML scripts) are not the same thing as the applications of Dodrill (web pages), the ordinarily skilled artisan would not have been motivated to use Dodrill's database with Gilmore. *Id.* at 56. In so arguing, Patent Owner takes a literal approach, asserting that "[a]pplying *Dodrill*'s database to *Gilmore* would result in *Dodrill*'s web pages being sent to *Gilmore*'s voice application—which expects VoiceXML scripts to process," and vice versa—"[a]pplying *Gilmore*'s VoiceXML scripts to *Dodrill* would result in VoiceXML scripts being sent directly to a web browser—which expects an HTML page." *Id.*

Second, with regard to the claims' requirement of a "request for processing service" (limitations 1a2, 1e, 1f, 1g; 10f, 10g, 10h; 22d, 22e), Patent Owner argues that "Petitioner does not explain how the web page of *Dodrill* would be applied to the alleged communication device of *Gilmore*, which serves the function of a telephone." PO Resp. 56. Patent Owner

further argues "[t]here is simply no disclosure in *Gilmore* that would support the HTML-based voice messaging web page of *Dodrill* without significant redesign and experimentation, none of which is discussed in the Petition or in Petitioner's expert's declaration." *Id.* at 57.

Patent Owner's arguments are unavailing, as a proposed combination of references is not limited to a bodily incorporation of the features of one reference into another. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference."); *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) ("Combining the teachings of references does not involve an ability to combine their specific structures."). Here, Patent Owner's assertion that Gilmore's VoiceXML scripts and Dodrill's web pages are not interoperative focuses improperly on the bodily incorporation of Gilmore's VoiceXML scripts with Dodrill's web pages, rather than what these references would have taught to one of ordinary skill in the art. Similarly, with regard to the questions Patent Owner poses to address design changes needed to incorporate Dodrill's teachings with Gilmore (PO Resp. 57–58 (citing Ex. 2007 ¶ 142)), we find such alleged changes are, to a large extent, irrelevant, as they are based on Patent Owner's flawed premise of bodily incorporation.

We find Petitioner has shown persuasively what a person of ordinary skill in the art, who is also a person of ordinary creativity, would have appreciated from the combined teachings of the references. *See* Pet. 23–25, 34–37, 47–52; *see also KSR*, 550 U.S. at 421. Contrary to Patent Owner's suggestion, the Petition does not rely solely on a "telephone call" in Gilmore, but also relies on data network connections (e.g., VoIP, IP) in Gilmore and Dodrill that send voice and data. Pet. 18–20, 29, 47–50.

Gilmore and Dodrill both disclose remote application execution over data networks using IP phones, PDAs, and voice-enabled computers. Ex. 1005 ¶¶ 30–31; Ex. 1006, 8:18–24, 11:61–12:30; Pet. 18–20, 29, 47–62. Dodrill discloses that user devices can receive data and voice information and include browsers and voice resource software to execute instructions at the user device (e.g., VoiceXML, XML)—a "request for processing service." Ex. 1006, 7:60–62, 9:6–11, 11:61–12:30; Pet. 29, 47–62; *see also* Ex. 1009 ¶¶ 20–21, 23 (confirming VoiceXML instruction execution on a user device using a browser). Petitioner's combination of Gilmore and Dodrill merely moves the location of processing from one known location (remote server) to another (user device), rendering it obvious. *See Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1338–42 (Fed. Cir. 2020) (holding that moving the location of processing from a remote server to a user device was obvious, regardless of underlying technological compatibility); *see also KSR*, 550 U.S. at 417 ("[I]f 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.").

We also find credible and persuasive the testimony of Dr. Lipoff on these issues. For example, we credit Dr. Lipoff's testimony that the ordinarily skilled artisan would have had reason to combine Dodrill's database with Gilmore's data store because "[u]sing Dodrill's database as Gilmore's data store would result in the ordinary and expected operation of storing applications, which can be retrieved from the database for execution. . . . As such, Dodrill's database would operate the same way in the combination with Gilmore as it does in Dodrill." Ex. 1021 ¶ 100 (citing Ex. 1006, 9:16–24, 13:62–64). We also credit Dr. Lipoff's testimony that

the ordinarily skilled artisan would have known that it would be "a straightforward application of the knowledge of one skilled in the art to include software on Gilmore's devices (as Dodrill does) to receive data information/instructions from a server on the Internet" (*id.* ¶ 167) and that doing so would "reduc[e] the computational load on the application server" (*id.* ¶ 170).

For the foregoing reasons, we disagree that combining Dodrill's teachings with Gilmore would have required changes to either system that would have been beyond the skill of the ordinarily skilled artisan.

(iii) Teaching away

Patent Owner also argues that the systems of Gilmore and Dodrill are "fundamentally different," basing this contention on statements in the Gilmore provisional application (Exhibit 2028) that distinguish web applications and voice applications. PO Resp. 58 (citing Ex. 2028, 6, 2). Patent Owner then states that Gilmore's system has a host system with an application server, which Patent Owner states is a "fundamentally different type of system than *Dodrill*." *Id.* at 58–59 (citing Ex. 2007 ¶ 143).

A reference teaches away from a combination when, for example, a person of ordinary skill in the art would be discouraged from following the path set out in the reference, or would be led in a direction divergent from that chosen by the inventor. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). "[I]n general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *Id.*

Patent Owner's arguments are both conclusory and legally unavailing. Even assuming that Gilmore and Dodrill disclose different types of systems, being "different" is not teaching away, which "requires 'clear

discouragement' from implementing a technical feature." *Univ. of Md. Biotechnology Inst. v. Presens Precision Sensing GmbH*, 711 F. App'x 1007, 1011 (Fed. Cir. 2017) (quoting *In re Ethicon, Inc.*, 844 F.3d 1344, 1351 (Fed. Cir. 2017)). Patent Owner does not identify anything in Gilmore or Dodrill that discourages sending executable instructions to Gilmore's devices. *Cf.* Pet. 29, 47–62. Patent Owner's arguments also rely on differences between graphical and voice interfaces (PO Resp. 58), which are irrelevant because Gilmore and Dodrill describe voice interface systems, not graphical ones, to remotely execute interactive voice applications. *See* Pet. 6–11, 47–62. Furthermore, even considering the Gilmore provisional application, we note that it confirms the "tremendous similarities" in the systems, explaining that "VoiceXML-based voice technologies are designed to work in the same general model used for Web pages" and are "interpreted in a browser (voice gateway)," like Dodrill's system and device browser. Ex. 2028, 8, 27.

(iv) Hindsight

Finally, invoking the testimony of Dr. Rhyne, Patent Owner asserts, tersely, that "Petitioner's approach to proving obviousness represents an improper use of hindsight in a deliberate attempt to fish for disclosure in the prior art based on the teachings of the '483 Patent rather than through a POSITA's understanding of the art." PO Resp. 59 (citing Ex. 2007 ¶¶ 144–148). We disagree. As we discuss above, we find that Petitioner has provided articulated reasoning supported by evidentiary bases as to why the ordinarily skilled artisan would have combined the references in the manner proposed by Petitioner. In that regard, Petitioner's reasoning does not rely only on knowledge gleaned from the '483 patent's disclosure. *See In re McLaughlin*, 443 F.2d 1392, 1313–14 (CCPA 1971) ("Any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper"). We find that Petitioner's showing is not premised on an improper hindsight reconstruction.

(5) Conclusion

Having considered the parties' arguments and evidence, we find Petitioner has demonstrated sufficiently that the teachings of Gilmore and Dodrill have been properly combined and an ordinarily skilled artisan would have found it obvious to combine the teachings of Gilmore and Dodrill in the manner proposed by Petitioner.

Therefore, after having analyzed the entirety of the record and assigning appropriate weight to the cited supporting evidence, we determine Petitioner has shown by a preponderance of the evidence that independent claims 1, 10, and 22 are unpatentable over the combination of Gilmore and Dodrill.

b) Dependent Claims

Claims 3, 4, and 6–9 depend, directly or indirectly, from independent claim 1; claims 12, 14, 15, 17, 18, 20, and 21 depend, directly or indirectly, from independent claim 10; and claims 23–28 depend, directly or indirectly, from independent claim 22. As such, they also include the above-discussed limitations. The dependent claims specify, for example, the type of input (e.g., keyboard, voice, or touch) used to respond to queries for information from the user, or specify details about the request for processing service. Petitioner persuasively maps the limitations of the dependent claims to the cited art. Pet. 44–70 (citing, for claims 3 and 14: Ex. 1005 ¶¶ 3, 30, 34, 39,

51, 115, Figs. 1, 2; for claims 4 and 15: Ex. 1005 ¶¶ 30, 34, 39, 51, 115; for claims 6, 17, and 25: Ex. 1006, 8:18–24, 11:61–12:29, Fig. 7; for claims 7 and 18: Ex. 1006, 8:17–24, 12:5–14; for claims 8, 20, and 26: Ex. 1006, 12:55–60, Fig. 7; for claims 9, 21, and 27: Ex. 1006, 12:26–30, Fig. 7; for claim 23: Ex. 1005, ¶¶ 33, 46, 52, 56, 57, 61, 71, 75, 78; for claim 24: Ex. 1006, Abstract, 3:8–22, 5:6–24, 11:61–12:30, Fig. 4; Ex. 1005 ¶¶ 30, 51; for claim 28, Ex. 1005 ¶¶ 3, 30, 34, 39, 51, 115, Figs. 1, 2). We find Petitioner's arguments and evidence to be persuasive, and we find, for the reasons expressed by Petitioner, that the cited art teaches or suggests each of these limitations. We address below specifically the challenges Patent Owner has raised as to these dependent claims.

Claims 12 and 24 recite that the communication device "comprises a thin-client software program" that provides processing services to an application. Ex. 1001, 14:36–40, 16:6–11. Patent Owner argues that "[w]hile *Dodrill* generally discusses 'thin clients' it does not disclose that such 'thin clients' comprise a 'software program.' In fact, *Dodrill* defines thin clients as desktop computers (which themselves have web browsers and executable voice resources)." PO Resp. 60 (citing Ex. 1006, 3:16–17, 8:50–58). Thus, continues Patent Owner, "while *Dodrill* uses some of the same *words* as the challenged claims, they are given a different meaning than a POSITA would apply at the time of and in the context of the '483 Patent." *Id.* (citing Ex. 2007 ¶¶ 153, 182, 209).

Petitioner responds that Patent Owner does not address the Petition, "which relies on Dodrill's *software*—browser and/or voice resource—as the 'thin client software program.'" Reply 28; *see* Pet. 33–34 (addressing "thin client" recited in limitation 1a2). As noted above in connection with the discussion of the "request for processing services" limitations (including

limitation 1a2), we are persuaded by Petitioner's arguments and evidence that Dodrill teaches or suggests thin-client software. *See supra* § III.D.2.a)(3). Patent Owner's argument that Dodrill discloses "thin clients" only in the context of hardware is contradicted by the record and is unavailing.

Claims 6–9, 17–20, and 25–27 all require that the "request for processing services" comprise one or more "instructions" to perform specific tasks. *See, e.g.*, Ex. 1001, 13:54–60, 14:54–62, 16:13–15 (claims 6–7, 17–18, 25) ("present information to the user"), 13:61–65, 15:1–5, 16:16–20 (claims 8, 20, 26) ("retrieve content from a source located remote from the one or more communication devices"), 13:66–14:2,15:6–9, 16:21–24 (claims 9, 21, 27) ("send content to a source located remote from the one or more communication devices"). Patent Owner argues that "nothing in *Gilmore* discloses or suggests the sending of 'instructions' from an application server to the communication device, and neither Petitioner nor its expert have explained why a POSITA would be motivated to make the fundamental changes to *Gilmore* to send such instructions." PO Resp. 60–61. Patent Owner additionally argues that "because Claims 8, 9, 20, 21, 26, and 27 all require that the request for processing service comprise *both* one or more queries for information from a user *and* instructions to send content to or retrieve content from a remote source, the Petition fails to establish any of these claims in the prior art." *Id.* at 61 (citing Ex. 2007 ¶¶ 169, 172, 193, 196, 214, 216).

Petitioner responds that Patent Owner has failed to address the arguments in the Petition, which rely on Gilmore *in combination with* Dodrill as teaching or suggesting that the "request for processing services" comprises "instructions" to perform the functions as claimed. Reply 28–29

(citing Pet. 47–62). We agree Patent Owner's arguments are unavailing on that basis. We also agree with Petitioner that the Petition presents evidence and argument that the combination of Gilmore and Dodrill teaches or suggests queries for information as well as instructions to send or retrieve content from a remote source. *See* Pet. 55–58 (describing "prompt" instructions that retrieve content from a remote source), 59–62 (describing "upload" instructions that send content to a remote source), 30–32, 48, 55–57 (describing "queries" for information from the user); *see also* Ex. 1005, Fig. 13; Ex. 1006, 12:5–14. We find Petitioner's evidence and argument persuasive.

We find Petitioner has demonstrated, by a preponderance of the evidence, that the combination of Gilmore and Dodrill teaches or suggests the subject matter of dependent claims 2, 4, 6–9, 12, 14, 15, 17, 18, 20, 21, and 23–28.

In addition, for essentially the reasons we discuss above as to the independent claims (§ III.D.2.a)(4)), we determine Petitioner has made a sufficient showing that the references are properly combined and an ordinarily skilled artisan would have found it obvious to combine the teachings of Gilmore and Dodrill in the manner proposed by Petitioner. *See* Pet. 50–55, 57–58, 61–62, 68–70. In particular, Petitioner presents evidence and argument as to the dependent claims that the ordinarily skilled artisan would have been motivated to combine the teachings of Dodrill and Gilmore in the manner stated by Petitioner to distribute processing and to increase processing efficiency, and would have known that the modification combines known operations and functions in the expected manner when combined. *See id.* We also credit, and rely upon, the supporting testimony of Dr. Lipoff in that regard, including Dr. Lipoff's testimony that not only

would the ordinarily skilled artisan have been motivated to make the combination, for the reasons articulated by Petitioner, but would have also reasonably expected to succeed in making the combination. *See* Ex. 1021 ¶¶ 176–177, 183–185, 190–192, 209–210.

3. Ground 1: Conclusion

After having analyzed the entirety of the record and assigning appropriate weight to the cited supporting evidence, we determine Petitioner has shown by a preponderance of the evidence that claims 1, 3, 4, 6–10, 12, 14, 15, 17, 18, and 20–28 are unpatentable over the combination of Gilmore and Dodrill.

E. Ground 2: Asserted Obviousness over Gilmore, Dodrill, and Patel

Petitioner contends claims 2, 5, 13, and 16 are unpatentable under 35 U.S.C. § 103(a) over the combination of Gilmore, Dodrill, and Patel. Pet. 71–78.

1. Overview of Patel (Ex. 1007)

Patel is a published U.S. Patent Application entitled "System and Method for Improved Contact Center Services to Disabled Callers." Ex. 1007, code (54). Patel was filed on May 11, 2005, and published on November 16, 2006 (*id.* at codes (22), (43)); accordingly, it is prior art under 35 U.S.C. §§ 102(a), (e). *See* Pet. 1. Patent Owner does not dispute the prior-art status of Patel.

Patel is directed to a system for providing automated voice response call services. Ex. 1007 ¶¶ 2, 10. In particular, "[w]hen a person with a disability calls into a call or contact center the caller's disability is identified . . . an initial menu prompt may ask the caller to make a certain keypad, touch-tone, or voice response if they have a disability and would like to receive special treatment." *Id.* ¶ 15. Caller devices "include[] a user

interface (e.g., keypad, voice, touch-screen, etc.) that enables the caller to input data" such as "keypad or touch-tone input." *Id.* ¶ 18. Further, those features "may be downloaded as a computer program product, wherein the program may be transferred from a remote computer (e.g., a server) to a requesting process (e.g., from a caller device)." *Id.* ¶ 26.

2. Analysis

Claim 2 recites that the "thin-client software program is downloaded to the at least one communication device and facilitates communication between the user and the at least one application server via the at least one communication device." Ex. 1001, 13:39–43. Claim 13 contains a similar recitation. *Id.* at 14:41–45. Claims 5 and 16 recite that the "responses to one or more queries is provided through a touch input." *Id.* at 13:52–53, 14:54–55. Patent Owner makes no specific arguments directed toward these claims or this ground, but instead relies on arguments set forth for independent claims 1 and 10 in connection with Ground 1. *See* PO Resp. 61.

Petitioner persuasively maps the limitations of claims 2, 5, 13, and 16 to the teachings of Gilmore, Dodrill, and Patel. Pet. 71–78. In so doing, Petitioner relies upon and incorporates arguments regarding Gilmore and Dodrill as advanced for Ground 1, and additionally relies upon Patel as disclosing: a "thin-client software program is downloaded to the at least one communication device," as recited in claims 2 and 13 (*id.* at 72 (citing Ex. 1007 ¶ 26)); and "the response to one or more queries is provided through a touch input," as recited in claims 5 and 16 (*id.* at 75 (citing Ex. 1007 ¶ 18)).

For claims 2 and 13, beyond the arguments and evidence presented for Ground 1, Petitioner additionally presents evidence that Patel discloses that software programs, such as Dodrill's thin client, can be "downloaded as a

computer program product" to the user's communication device "via a communication link (e.g., a modem or network connection)." Pet. 72 (citing Ex. 1007 ¶ 26; Ex. 1021 ¶ 220). Petitioner further presents evidence, through the testimony of Dr. Lipoff, that the ordinarily skilled artisan "would have known that, by 2006, downloading software to a user device, such as a computer, PDA, or cell phone, had become a conventional for installing the software when the software was not native to the device" and also "would have found it obvious to provide for downloading Dodrill's thin client to Gilmore's communication device 102/202 to provide greater access to the interactive voice response system by making it available to more users." *Id.* at 72–73 (citing Ex. 1021 ¶ 220); *see also id.* at 73–74 (citing Ex. 1021 ¶¶ 221–222). Petitioner additionally presents the testimony of Dr. Lipoff supporting the assertion that the ordinarily skilled artisan would have expected success in making the combination because the "process of downloading the thin client to [Gilmore's] user communication device 102/202 involves nothing more than the conventional operations for downloading software because the combined system performs the same, expected functions as in the individual references." *Id.* at 74 (citing Ex. 1021 ¶¶ 221–225). We find Petitioner's arguments and evidence to be persuasive.

As for claims 5 and 13, beyond the arguments and evidence presented for Ground 1, Petitioner additionally presents evidence that Patel discloses user communication devices that "include[] a user interface (e.g., … touch-screen, etc.) that enables the caller to input data to ACD 15." Pet. 75 (citing Ex. 1007 ¶ 18) (alterations in original). Petitioner further presents evidence that, "[l]ike Gilmore and Dodrill, Patel discloses that the communications devices are used to provide "responses to IVR prompts, password

information, a speech pattern or signature of the caller, voice commands (i.e., spoken words), and keypad or touch-tone inputs." *Id.* (citing Ex. 1007 ¶ 18; Ex. 1021 ¶ 228). Patel also explains, like Gilmore and Dodrill, that the communication devices, such as a computer, cell phone, or PDA, allow a user to interact with an IVR system. Ex. 1007 ¶ 14. Relying on the testimony of Dr. Lipoff, Petitioner reasons that the ordinarily skilled artisan would have understood from reading Patel that "responding to IVR inputs using a touchscreen corresponds to responding to a prompt from an interactive voice system, such as Gilmore or Dodrill," and thus "would have found it obvious to incorporate Patel's touchscreen inputs into the communication devices of Dodrill and Gilmore to expand the availability of response options and increase compatibility with more devices." Pet. 75–76 (citing Ex. 1021 ¶ 228); *see also id.* at 76 (citing Ex. 1021 ¶ 229). Petitioner additionally presents the testimony of Dr. Lipoff supporting the assertion that the ordinarily skilled artisan would have expected success in making the combination because "incorporating a touch input into a PDA or voice-enabled computer to provide a response to queries from Gilmore's voice gateway involved only the known application of conventional technologies operating in the ordinary and predictable manner." *Id.* at 77–78 (citing Ex. 1021 ¶ 230). We find Petitioner's arguments and evidence to be persuasive.

We find Petitioner has shown by a preponderance of the evidence that the combination of Gilmore, Dodrill, and Patel teaches or suggests the subject matter of claims 2, 5, 13, and 16. In addition, we determine Petitioner has made a sufficient showing that the references are properly combined and an ordinarily skilled artisan would have found it obvious to

combine the teachings of Gilmore, Dodrill, and Patel. *See* Pet. 73–74, 76–77.

3. Ground 2: Conclusion

For all of the foregoing reasons, and after having analyzed the entirety of the record and assigning appropriate weight to the cited supporting evidence, we determine Petitioner has shown by a preponderance of the evidence that claims 2, 5, 13, and 16 are unpatentable over the combination of Gilmore, Dodrill, and Patel.

IV. CONCLUSION[12]

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 3, 4, 6–10, 12, 14, 15, 17, 18, 20–28	103(a)	Gilmore, Dodrill	1, 3, 4, 6–10, 12, 14, 15, 17, 18, 20–28	
2, 5, 13, 16	103(a)	Gilmore, Dodrill, Patel	2, 5, 13, 16	
Overall Outcome			1–10, 12–18, 20–28	

[12] 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).

V. ORDER

Accordingly, it is

ORDERED that claims 1–10, 12–18, and 20–28 of U.S. Patent No. 9,264,483 B2 are held unpatentable under 35 U.S.C. § 103 as obvious; and

FURTHER ORDERED that, because this is a Final Written Decision, 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.

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