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Paper 27
Date: March 7, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC., AMAZON.COM LLC, AMAZON WEB SERVICES, INC., A2Z DEVELOPMENT CENTER, INC. D/B/A LAB126, RAWLES LLC, AMZN MOBILE LLC, AMZN MOBILE 2 LLC, AMAZON.COM SERVICES, INC. F/K/A AMAZON FULFILLMENT SERVICES, INC., and AMAZON.COM SERVICES LLC (formerly AMAZON DIGITAL SERVICES LLC),
Petitioner,

v.

VB ASSETS, LLC,
Patent Owner.

IPR2020-01367
Patent 8,073,681 B2

Before MICHELLE N. WORMMEESTER, SCOTT C. MOORE, and SEAN P. O'HANLON, *Administrative Patent Judges.*

MOORE, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Amazon.com, Inc., Amazon.com LLC, Amazon Web Services, Inc., A2Z Development Center, Inc. d/b/a Lab126, Rawles LLC, AMZN Mobile LLC, AMZN Mobile 2 LLC, Amazon Services, Inc. f/k/a Amazon Fulfillment Services, Inc., and Amazon.com Services LLC (formerly Amazon Digital Services LLC) (collectively "Petitioner") filed a Petition requesting an *inter partes* review of claims 1–42 of U.S. Patent No. 8,073,681 B2 ("the '681 patent"). Paper 1 ("Petition" or "Pet."). VB Assets, LLC ("Patent Owner") filed a Preliminary Response. Paper 6. We instituted an *inter partes* review as to all claims and grounds set forth in the Petition. Paper 7 ("Institution Decision").

On May 21, 2021, Patent Owner filed a statutory disclaimer disclaiming claims 37–42 of the '681 Patent. Ex. 2005. As explained below, this disclaimer eliminated claims 37–42 from the scope of this proceeding. The same day, Patent Owner filed a Response to the Petition (Paper 13, "Response" or "Resp."). Thereafter, Petitioner filed a Reply to the Response (Paper 16, "Reply"), and Patent Owner filed a Sur-Reply (Paper 23, "Sur-Reply"). An oral hearing was held on November 4, 2021, and a transcript of the hearing is in the record. Paper 26 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that any of claims 1–36 is unpatentable.

B. Related Matters

Patent Owner asserts the ’681 patent against Petitioner in the following litigation: *VB Assets, LLC v. Amazon.com Inc., et al.*, Case No. 1:19-cv-01410-MN (D. Del.) (filed July 29, 2019). Pet. 2; Paper 5, 2.

C. The ’681 Patent

The ’681 patent is directed to “a cooperative conversational model for a human to machine voice user interface.” Ex. 1001, 1:7–8. The disclosed cooperative conversational voice user interface understands free-form human utterances, “freeing users from being restricted to a fixed set of commands and/or requests.” *Id.* at 1:63–67.

The ’681 patent discloses a system that receives an input, which may include a human utterance (i.e., words, syllables, phonemes, or any other audible sound made by a human being), where the utterance includes one or more requests (i.e., command, directive, other instruction for a device, computer or other machine, to retrieve information, perform a task, or take some other action). Ex. 1001, 2:6–14. The utterance component of the input is processed by a speech recognition engine to generate one or more preliminary interpretations of the utterance. *Id.* at 2:16–20. The one or more preliminary interpretations are then provided to a conversational speech engine for further processing, where the conversational speech engine communicates with one or more databases to generate an adaptive conversational response that may then be returned to the user as an output. *Id.* at 2:20–25.

Figure 1 of the ’681 patent, reproduced below, depicts an embodiment of a cooperative conversational voice user interface. Ex. 1001, 6:64–65, 7:7–9.

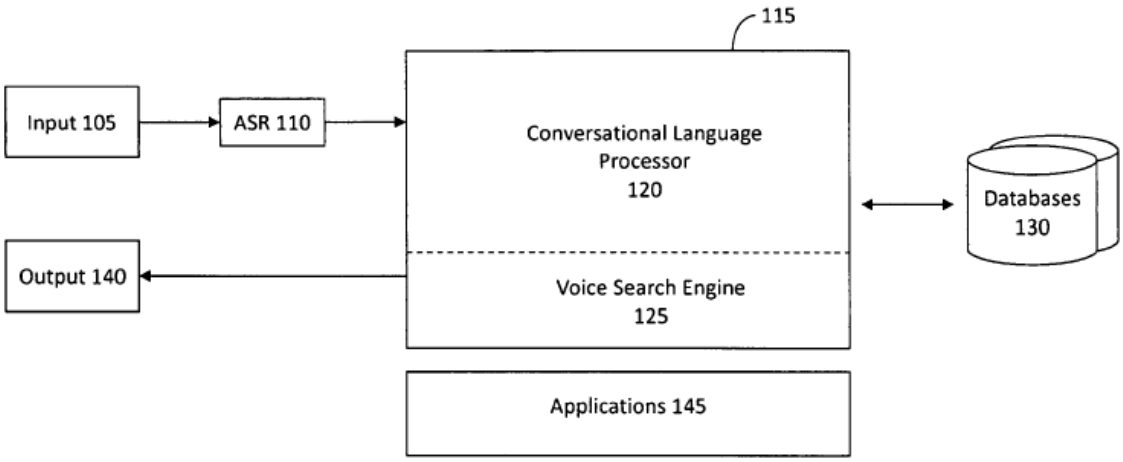

Figure 1

Figure 1 depicts a "system architecture for implementing a cooperative conversational voice user interface." Ex. 1001, 7:7–9. The depicted system receives an input 105 from a user, where input 105 is an utterance received by an input device (e.g., a microphone), and where the utterance includes one or more requests. *Id.* at 7:10–13. The utterance component of input 105 is processed by speech recognition engine 110 (i.e., Automatic Speech Recognizer ("ASR") 110) to generate one or more preliminary interpretations of the utterance. *Id.* at 7:24–28. The one or more preliminary interpretations generated by speech recognition engine 110 are then provided to conversational speech engine 115 for further processing. *Id.* at 7:37–40. Conversational speech engine 115 communicates with one or more databases 130 to generate an adaptive conversational response, which is returned to the user as output 140. *Id.* at 7:43–46.

D. Challenged Claims

Petitioner challenges claims 1–36 of the '681 patent. Petitioner initially also challenged claims 37–42, but Patent Owner filed a statutory disclaimer disclaiming those additional claims. Ex. 2005. This disclaimer

effectively eliminated claims 37–42 from the ’681 Patent, leaving the patent as if those claims never existed. *See Sanofi-Aventis U.S., LLC v. Dr. Reddy’s Labs., Inc.*, 933 F.3d 1367, 1373 (Fed. Cir. 2019). Thus, claims 37–42 are no longer part of this proceeding.

Challenged claims 1, 13, and 25 are independent. Claims 2–12 depend from claim 1, claims 14–24 depend from claim 13, and claims 26–36 depend from claim 25.

Claim 1 is reproduced below, with bracketed references added.

> 1. A method for providing a cooperative conversational voice user interface, comprising:
>
> [1.a] receiving an utterance at a voice input device during a current conversation with a user, wherein the utterance includes one or more words that have different meanings in different contexts;
>
> [1.b] accumulating short-term shared knowledge about the current conversation, wherein the short-term shared knowledge includes knowledge about the utterance received during the current conversation;
>
> [1.c] accumulating long-term shared knowledge about the user, wherein the long-term shared knowledge includes knowledge about one or more past conversations with the user;
>
> [1.d] determining an intended meaning for the utterance, wherein determining the intended meaning for the utterance includes:
>
> [1.e] identifying, at a conversational speech engine, a context associated with the utterance from the short-term shared knowledge and the long-term shared knowledge; and
>
> [1.f] establishing the intended meaning within the identified context, wherein the conversational speech engine establishes the intended meaning within the identified context to disambiguate an intent that the user had in

speaking the one or more words that have the different meanings in the different contexts; and

[1.g] generating a response to the utterance, wherein the conversational speech engine grammatically or syntactically adapts the response based on the intended meaning established within the identified context.

Ex. 1001, 19:35–65.

Independent claims 13 and 25 are similar to independent method claim 1, except that claims 13 and 25 are directed to a non-transitory computer readable medium and a system, respectively. *See* Ex. 1001, 19:35–65, 21:6–35, 22:9–17.

E. Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	1, 2, 9, 13, 14, 21, 25, 26, 33	103(a)[1]	Kennewick[2]
2	5, 8, 17, 20, 29, 32	103(a)	Kennewick, Huang[3]
3	10, 22, 34	103(a)	Kennewick, Seneff[4]
4	6, 7, 18, 19, 30, 31	103(a)	Kennewick, Huang, Seneff

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the '681 patent issued was filed before this date, the pre-AIA version of § 103 applies.
[2] U.S. Patent App. Pub. No. 2004/0193420 A1 (pub. Sept. 30, 2004) (Ex. 1003, "Kennewick").
[3] Huang, Xuedong et al., "Spoken Language Processing: A Guide to Theory, Algorithm and System Development," Prentice Hall (2001) (Ex. 1011, "Huang").
[4] Seneff, et al., "Hypothesis Selection and Resolution in the Mercury Flight Reservation System," Spoken Language Systems Group, MIT (2001) (Ex. 1025, "Seneff").

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
5	11, 12, 23, 24, 35, 36	103(a)	Kennewick, Coffman[5]
6	3, 4, 15, 16, 27, 28	103(a)	Kennewick, Mitsuyoshi[6]

Pet. 4. Petitioner also relies on the Declaration of Padhraic Smyth, Ph.D. (Ex. 1002) and the Supplemental Declaration of Padhraic Smyth, Ph.D. (Ex. 1033). Patent Owner relies on the Declaration of Anatole Gershman, Ph.D. (Ex. 2001).

II. ANALYSIS

A. Principles of Law

1. Burden

In an *inter partes* review, the burden of proof is on the petitioner to show that the challenged claims are unpatentable, and that burden never shifts to the patentee. *See* 35 U.S.C. § 316(e); *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016) (citing *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015)).

2. Obviousness under 35 U.S.C. § 103(a)

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 of 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;

[5] U.S. Patent No. 6,839,896 B2 (iss. Jan. 4, 2005) (Ex. 1027, "Coffman").
[6] U.S. Patent App. Pub. No. 2003/0182123 A1 (pub. Sept. 25, 2003) (Ex. 1028, "Mitsuyoshi").

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

In determining obviousness when all elements of a claim are found in various pieces of prior art, "the factfinder must further consider the factual questions of whether a person of ordinary skill in the art would be motivated to combine those references, and whether in making that combination, a person of ordinary skill would have had a reasonable expectation of success." *Dome Patent L.P. v. Lee*, 799 F.3d 1372, 1380 (Fed. Cir. 2015); *see also WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1355 (Fed. Cir. 1999) ("When an obviousness determination relies on the combination of two or more references, there must be some suggestion or motivation to combine the references.").

B. Level of Ordinary Skill in the Art

The level of skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Petitioner asserts that a person of ordinary skill in the art (a "POSITA") "would have at least a Bachelor-level degree in computer science, computer engineering, electrical engineering, or a related field in computing technology, and two years of experience with automatic speech recognition and natural language understanding, or equivalent education, research experience, or knowledge." Pet. 4–5 (citing Ex. 1002 ¶¶ 28–31). Patent Owner does not dispute Petitioner's assertion, and Patent Owner and its declarant, Dr. Gershman, both apply Petitioner's definition of a POSITA. Resp. 3.

On this record and given the absence of any dispute, we adopt and apply Petitioner's proposed formulation regarding the level of ordinary skill

in the art, which we find is consistent with the level of skill reflected in the cited prior art references. *See Okajima*, 261 F.3d at 1355.

C. Claim Construction

We generally give the words of a claim their ordinary and customary meaning. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc); 37 C.F.R. § 42.100(b). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1313. "[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*.

"[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

In its Petition, Petitioner asks us to construe the "implicit hypothesis" term of claims 38, 40, and 42. Pet. 7–8. As discussed above, however, Patent Owner filed a disclaimer that eliminated these claims from this proceeding. Petitioner does not ask us to construe any terms in the remaining challenged claims. *See id.*; *see generally* Reply. Patent Owner also does not ask us to construe any claim terms. *See generally* Response.

On this record, we decline to adopt constructions of any claims. *See Nidec*, 868 F.3d at 1017.

D. Overview of the Asserted References

1. Kennewick

Kennewick is directed to "the retrieval of online information and processing of commands through a speech interface in a vehicle environment." Ex. 1003 ¶ 2. Kennewick discloses "a mobile interactive natural language speech system . . . that includes a speech unit." *Id.* ¶ 12. The system includes "a speech interface device that receives spoken natural language queries, commands and/or other utterances from a user, and a computer device or system that receives input from the speech unit[,] processes the input (e.g., retrieves information responsive to the query, takes action consistent with the command, [etc.]), and responds to the user with a natural language speech response." *Id.* ¶ 14.

Figure 5, reproduced below, illustrates an interactive natural language speech processing system. Ex. 1003 ¶ 92.

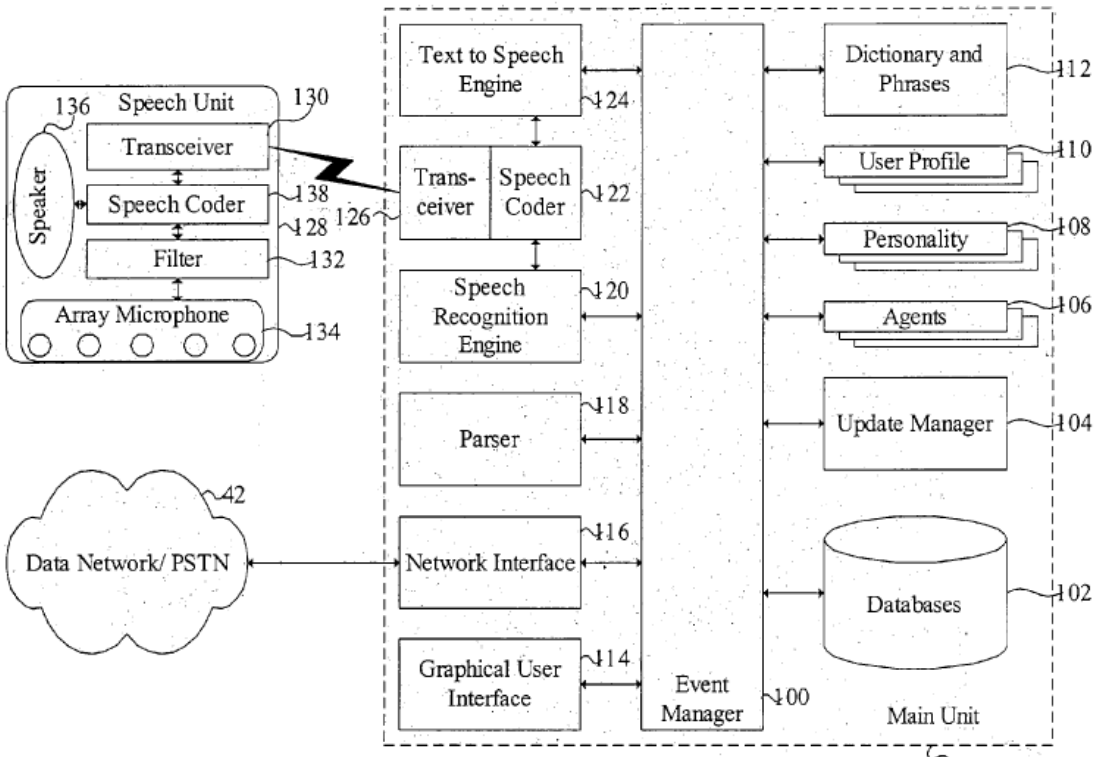

Figure 5. Speech Processing System Block Diagram

Figure 5 depicts components of an "interactive natural language speech processing system." Ex. 1003 ¶ 118. The main user interface for the system is speech unit 128. *Id.* ¶ 121. Speech unit 128 includes one or more microphones (e.g., array microphone 134) to receive the utterances of a user. *Id.* Speech unit 128 encodes the received speech via speech coder 138 and transmits the coded speech via transceiver module 130 to the main unit 98. *Id.* The coded speech is then passed to speech coder 122 for decoding. *Id.* ¶ 123. The decoded speech is then processed by the speech recognition engine 120 using data in the dictionary and phrases module 112 and data received from agents 106. *Id.* The recognized words and phrases are then "processed by parser 118, which transforms them into complete commands and questions using data supplied by the agents," where the agents "then process the commands or questions." *Id.* The agents are used to determine context for the questions and commands. *Id.* ¶ 128.

2. Other References

Petitioner also cites Huang, Seneff, Coffman, and Mitsuyoshi as secondary references. *See* Pet. 4. For the reasons discussed below, the issues in dispute all turn on the teachings and suggestions of Kennewick. Accordingly, this Decision does not address the substance of the Huang, Seneff, Coffman, or Mitsuyoshi references.

E. Obviousness under 35 U.S.C. § 103(a)

1. Objective Evidence of Nonobviousness

Patent Owner does not rely on objective evidence of nonobviousness in this case. *See generally* Resp. (not alleging that any such objective evidence is present).

2. Scope and Content of the Prior Art; Differences between Claimed Subject Matter and Prior Art; Obviousness

a) Analysis

Step [1.a] of independent method claim 1 recites "receiving an utterance" that "includes one or more words that have different meanings in different contexts." Steps [1.b] through [1.d] recite "accumulating short-term shared knowledge about the current conversation" and "accumulating long-term shared knowledge about the user" and "determining an intended meaning for the utterance." Steps [1.e] and [1.f] additionally recite "identifying . . . a context associated with the utterance from the short-term shared knowledge and the long-term shared knowledge" and "establishing the intended meaning within the identified context . . . to disambiguate an intent that the user had in speaking the one or more words that have different meanings in the different contexts." Ex. 1001, 19:37–61.

Independent claims 13 and 25 recite substantively similar limitations, but are directed to a non-transitory computer-readable medium and a system, respectively. *See* Ex. 1001, 21:6–36, 22:55–23:16; Pet. 25 ("Claim 13 is substantially similar to claim 1"), 26 ("Claim 25 is a system variant of claim 1"). The remaining challenged claims all depend from one of these three independent claims. Thus, all challenged claims require either the steps of, computer-executable instructions operable to, or a system configured to: receive an utterance including "one or more words that have different meanings in different contexts," identify a context associated with the utterance from short-term shared knowledge about the conversation and long-term shared knowledge about the user, and establish the intended meaning within the identified context to disambiguate the user's intent.

Addressing step [1.a] and the similar limitations in claims 13 and 25, Petitioner contends that Kennewick "discloses receiving utterances that 'include[] one or more words that have different meanings in different contexts.'" Pet. 16–17 (alteration in original); *see also id.* at 25–27 (regarding claims 13 and 25). Petitioner cites to two disclosures in Kennewick of receiving words that allegedly have different meanings in different contexts: the receipt of the word "temperature" described in paragraph 160, and the receipt of the phrase "flight one hundred and twenty too" described in paragraph 163. Pet. 16–17.

Regarding steps [1.b] through [1.d] and the similar limitations of claims 13 and 25, Petitioner contends that Kennewick's dialog history (including tags) constitutes "short-term shared knowledge about the current conversation," and that Kennewick's user profiles constitute "long-term shared knowledge about the user." Pet. 18–19; 25–27.

With respect to limitations [1.e] through [1.f] and the similar limitations of claims 13 and 25, Petitioner contends that Kennewick's system "determine(s) a context for an utterance by applying prior probabilities or fuzzy possibilities to keyword matching, user profile 110, dialog history, and context stack contents." Pet. 20 (citing Ex. 1003 ¶ 160). Thus, according to Petitioner, context is determined at least in part based on short-term shared knowledge (i.e., dialog history) and long-term shared knowledge (i.e., user profile 110). *See id.* at 19–20. Petitioner further contends that Kennewick's system could, for example, "use a weather context to understand that the user is requesting a forecast and not their body temperature," or determine based on "the flight reservation context" that there is a greater likelihood that the word "too" was intended to mean "two." *Id.* at 20–21.

Patent Owner argues in response that Kennewick does not teach or suggest the specific type of ambiguity required by the challenged claims: "ambiguity where 'one or more words . . . ***have different meanings in different contexts***.'" Resp. 4. According to Patent Owner, Petitioner cites "a 'temperature' example that does not have two different meanings, and a 'flight' example that relates to determining which of two different words that sound the same is the correct word ***in a single context***." *Id*. at 4–5. On this record, and having reviewed the evidence and arguments put forth by both parties, we agree with Patent Owner's arguments.

Though neither party has proposed a construction of "one or more words that have different meanings in different contexts," the '681 patent specification provides examples of this type of ambiguity. For example, the '681 patent discloses that the word "traffic" could have different meanings in different contexts. Ex. 1001, 11:10–20. In particular, a media player user might intend the word traffic to refer to "a Rock and Roll band," a user searching for films might intend the word traffic to refer to "a film directed by Steven Soderbergh," and a user seeking navigation directions might intend the word traffic to refer to "conditions on roads along a route." *Id.* The '681 patent also discloses that the word "Portland" has different meanings in different "environmental" (i.e., geographic) contexts because it can refer to a city in Oregon or a city in Maine. *See id*. at 11:62–12:13. For example, the '681 patent discloses that a user may ask "What's the weather in Seattle," causing the system to establish weather as a context and Seattle as an environmental context. *See id*. If the same user then utters "and Portland?" the system may use the environmental context of Seattle to determine that the user intended to ask about the weather in Portland,

Oregon (based on the environmental proximity of the two cities) rather than Portland, Maine. *See id*.

In both of these examples from the specification, the ambiguous word itself has different potential meanings in different contexts. The word "traffic" can mean a band, a movie, or road conditions, depending on context. The word "Portland" can mean a city in Oregon, or an entirely different city in Maine, depending on environmental context. Nothing in the '681 patent suggests that the patentee intended for other types of ambiguity to fall within the scope of the challenged claims.

Petitioner argues in its Reply that we should interpret the claim limitation "one or more words that have different meanings in different contexts" more broadly than discussed above, so as to encompass other types of ambiguity. *See* Reply 2–6. Specifically, Petitioner argues that the word "Portland" in the '681 patent specification does not have different meanings in different contexts because it always refers to a city. *Id*. at 5. Petitioner then reasons that a POSITA would have been led by this example to interpret the claim limitation "words that have different meanings in different contexts" to include "words like 'Portland,' which clearly refers to a city but, absent context, would still be ambiguous." *Id*. This argument is not persuasive because it misinterprets the disclosure of the challenged patent. As discussed above, the '681 patent discloses that the word "Portland" has two separate possible meanings in two different environmental contexts: a city in Oregon, or an entirely different city in Maine. Petitioner's own expert admits that the word "Portland" has different meanings in different contexts. *See* Ex. 1033 ¶ 6 ("In other words, the word 'Portland' in the utterance 'and Portland?' has a different meaning depending on the context determined for the dialog which affects how the

system responds."). Thus, we are not persuaded by Petitioner's argument that a POSITA would interpret the claim limitation "one or more words that have different meanings in different contexts" to encompass types of ambiguity not resulting from a word or words that have different meanings in different contexts.

We now turn back to Petitioner's contentions regarding Kennewick. We begin with Petitioner's contention that paragraph 160 of Kennewick teaches or suggests receiving an utterance including the word "temperature," and that this word can have different meanings in different contexts, as required by limitation [1.a] and similar limitations of claims 13 and 25. The relevant portion of paragraph 160 is reproduced below.

> The parser may determine a context for an utterance by applying prior probabilities or fuzzy possibilities to keyword matching, user profile 110, dialog history, and context stack contents. The context of a question or command may determine the domain and thereby, the domain agent 156, if any, to be invoked. <u>For example, a question with the keyword[] "temperature" implies a context value of weather for the question. Within a different dialog, the keyword "temperature" can imply a context for a measurement.</u> The parser dynamically receives keyword and associated prior probability or fuzzy possibility updates from the system agent 150 or an already active domain agent 156. <u>Based on these probabilities or possibilities the possible contexts are scored and the top one or few are used for further processing</u>.

Ex. 1003 ¶ 160 (emphasis added).

As Patent Owner points out, and as we observed in our Institution Decision, the word "temperature" does not have different meanings when used to describe weather or a measurement. *See* Resp. 4; Paper 7, 14. In both example situations, the word "temperature" has the same meaning—a measurement of warmth or coolness. *See* Ex. 2001 ¶ 26. Paragraph 160, thus, does not describe an ambiguity resulting from the word "temperature"

having different meanings in different contexts. The ambiguity results from not knowing if the user wants to know the temperature of the outside air (i.e., the weather) or the temperature of something else. *See id*.

Dr. Smyth's declaration testimony about words having different meanings in different contexts is unpersuasive. Dr. Smyth testifies that the keyword "'temperature' could be interpreted as an outdoor temperature or as a body temperature depending on context." *See* Ex. 1002 ¶ 69. This testimony is not persuasive because the word "temperature" refers to a measurement of warmth or coolness in both examples. That is, "temperature" has the same meaning in both contexts. Moreover, as Dr. Gershman points out, Kennewick does not teach or suggest a body temperature. Ex. 2001 ¶ 26. Dr. Smyth's testimony is unpersuasive for this additional reason. *See* Ex. 1002 ¶ 69.

Petitioner argues in its Reply that Kennewick describes different types of "temperature information, e.g., temperature measured by a sensor," or temperature from "a weather website." Reply 6–7. Thus, Petitioner reasons, merely "recognizing that temperature is a 'measurement of warmth or coolness' is not enough information to 'disambiguate an intent that the user had . . . .'" *Id*. at 7. But the fact that additional information may be necessary to "disambiguate an intent" does not demonstrate that the ambiguity is the result of the word "temperature" having different meanings in different contexts. As Petitioner concedes, the word "temperature" means a "measurement of warmth or coolness" in all of these examples. *See id*. Thus, we are not persuaded that this portion of Kennewick teaches or suggests an ambiguity resulting from the word "temperature" having different meanings in different contexts.

We now address Petitioner's alternative argument that the phrase "what about flight one hundred and twenty too" in paragraph 163 of Kennewick teaches or suggests receiving an utterance that includes "one or more words that have different meanings in different contexts." The relevant portion of paragraph 163 is reproduced below.

> In another example, the user asks, "what about flight one hundred and twenty too?" The parser and domain agent use flight information in the database and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, etc.

Ex. 1003 ¶ 163.

As Patent Owner points out, and as we observed in our Institution Decision, the ambiguity in the term "flight one hundred and twenty too" is an ambiguity that exists within a single context, and is not the result of the term having different meanings in different contexts. Resp. 6; Paper 7, 14–15. In particular, we agree with Patent Owner that paragraph 163 of Kennewick describes an ambiguity that exists after Kennewick's system has already determined context. *See* Resp. 7 (citing Ex. 2001 ¶ 30). The preceding paragraph of Kennewick discloses that "[o]nce the context for the question or command has been determined, the parser 118 can invoke the correct agent." Ex. 1003 ¶ 162. Reading paragraph 163 in the context of the preceding paragraph, it is apparent that when the user asks "what about flight one hundred and twenty too?" Kennewick's system has already identified the context and selected the appropriate domain agent to respond to the user's request. *See id.* ¶¶ 162–163; Resp. 7; Ex. 2001 ¶¶ 29–30. Thus, we agree with Patent Owner that a POSITA would not interpret paragraph 163 of Kennewick to teach or suggest an ambiguity resulting from

the phrase "what about flight one hundred and twenty too?" having different meanings in different contexts.

Petitioner argues that "[a] context in which 'flight 122' exists would result in a different meaning than a context where the system just listed several flight options including 'flight 100' and 'flight 20.'" Pet. 16–17 (citing Ex. 1002 ¶ 70). We agree with Patent Owner that this argument is unpersuasive because Dr. Smyth does not provide any support for his assertion that these hypothetical situations would constitute different contexts. *See* Ex. 1002 ¶ 70; Ex. 2001 ¶ 29. Moreover, limitation 1[e] and the corresponding limitations in claims 13 and 25 require identifying a "context associated with the utterance from the short-term shared knowledge [which Petitioner contends is Kennewick's dialog history] and the long-term shared knowledge [which Petitioner contends is Kennewick's user profiles]." Ex. 1001, 19:52–55, 21:22–25, 23:5–7; Pet. 18–19; 25–27. A system of the type described by Dr. Smyth, which determines context by checking whether a specific flight exists, would not determine context based on what Petitioner has identified as Kennewick's short-term and long-term shared knowledge. Thus, even if Dr. Smyth were correct, Kennewick would still not teach or suggest identifying a context in the manner required by claims 1, 13, or 25.

In the Reply, Petitioner, supported by Dr. Smyth, attempts to tweak its argument, positing that a user described in paragraph 163 of Kennewick might have previously reserved a seat on "flight 122," that this prior search information might have been stored in Kennewick's dialog history, and that Kennewick's system might use this dialog history to determine whether or not flight 122 does, in fact, exist. *See* Reply 9–10; Ex. 1033 ¶ 15. But this argument, and Dr. Smyth's accompanying testimony, are unsupported

speculation. Petitioner and Dr. Smyth do not identify anything in Kennewick that teaches, suggests, or even implies, that the user described in paragraph 163 previously conducted such a search for "flight 122," that information reflecting the search was stored in the user's dialog history or user profile, or that this information was then used to disambiguate the term "flight one hundred and twenty too." *See id*.

b) Legal Conclusion regarding Obviousness

On this record, and having considered the evidence and arguments put forth by both parties, we are not persuaded that Kennewick teaches or suggests that the word "temperature" has different meanings in different contexts, as required by independent claims 1, 13, and 25. *See* Resp. 4–6; Ex. 2001 ¶¶ 23–27. As detailed above, Patent Owner's arguments and the supporting testimony of Dr. Gershman are consistent with the ordinary and customary language of the claims, the specification of the '681 patent, and the disclosure of Kennewick. *See id*. In contrast, Petitioner's arguments are inconsistent with the ordinary and customary meaning of the claim language and the specification of the '681 patent, and are not adequately supported by the disclosure of Kennewick.

On this record, and having considered the evidence and arguments put forth by both parties, we also are not persuaded that Kennewick teaches or suggests that the phrase "what about flight one hundred and twenty too?" has different meanings in different contexts, as required by independent claims 1, 13, and 25. *See* Resp. 6–7; Ex. 2001 ¶¶ 28–30. Moreover, even if the "flight" example did describe two contexts (one in which "flight 122" exists, and one in which it does not), Petitioner's argument would still fail because Petitioner has offered no persuasive evidence that Kennewick teaches or suggests identifying one of these two alleged contexts based on

Kennewick's short-term shared information (dialog history) and long-term shared information (user profiles) as required by independent claims 1, 13, and 25. For the reasons explained above, Patent Owner's arguments and the supporting testimony of Dr. Gershman are consistent with and supported by the claims and specification of the '681 patent and the disclosure of Kennewick. *See* Resp. 4–6; Ex. 2001 ¶¶ 23–27. In contrast, Petitioner's arguments are not consistent with or supported by the ordinary and customary meaning of the claim language, the specification of the '681 patent, or the disclosure of Kennewick.

All remaining challenged claims depend from either claim 1, claim 13, or claim 25, and Petitioner's arguments regarding the challenged claims and the six asserted grounds of patentability all depend on Petitioner's contentions that the "temperature" and "flight" examples in Kennewick teach or suggest the claim limitations discussed above in independent claims 1, 13, and 25. *See* Pet. 15–23, 32, 41, 50, 53, 58. Accordingly, we find on this record that Petitioner has not shown by a preponderance of the evidence that any claim of the '681 patent is unpatentable under 35 U.S.C. § 103(a).

III. CONCLUSION

For the foregoing reasons, Petitioner has not shown by a preponderance of the evidence that any of challenged claims 1–36 is unpatentable.

In summary:

Claim(s) Challenged	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 9, 13, 14, 21, 25, 26, 33	103(a)	Kennewick		1, 2, 9, 13, 14, 21, 25, 26, 33
5, 8, 17, 20, 29, 32	103(a)	Kennewick, Huang		5, 8, 17, 20, 29, 32
10, 22, 34	103(a)	Kennewick, Seneff		10, 22, 34
6, 7, 18, 19, 30, 31	103(a)	Kennewick, Huang, Seneff		6, 7, 18, 19, 30, 31
11, 12, 23, 24, 35, 36	103(a)	Kennewick, Coffman		11, 12, 23, 24, 35, 36
3, 4, 15, 16, 27, 28	103(a)	Kennewick, Mitsuyoshi		3, 4, 15, 16, 27, 28
Overall Outcome				1–36

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–36 of U.S. Patent 8,073,681 B2 have not been shown to be unpatentable; 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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