UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ELASTIC N.V., OHIO FARMERS INSURANCE COMPANY,
and PREGIS LLC,
Petitioners,

v.

GUADA TECHNOLOGIES LLC,
Patent Owner.

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IPR2021-00875[1]
Patent 7,231,379 B2

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Before MIRIAM L. QUINN, KIMBERLY McGRAW, and
MATTHEW J. McNEILL, *Administrative Patent Judges.*

McNEILL, *Administrative Patent Judge.*

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

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314,

Elastic N.V., Ohio Farmers Insurance Company, and Pregis LLC

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[1] Ohio Farmers Insurance Company and Pregis LLC, who filed a petition in
IPR2022-00217, have been joined as Petitioners in this proceeding.

("Petitioners") challenge the patentability of claims 1–7 of U.S. Patent No. 7,231,379 B2 (Ex. 1001, "the '379 patent"). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, we determine Petitioners have shown by a preponderance of the evidence that claims 1–7 of the '379 patent are unpatentable.

I. BACKGROUND

A. Procedural History

Elastic N.V. filed a Petition (Paper 2, "Pet.") requesting an *inter partes* review of claims 1–7 of the '379 patent. Elastic N.V. filed a Declaration of Dr. Padhraic Smyth (Ex. 1007) with its Petition. Guada Technologies LLC ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.").

We instituted an *inter partes* review of the challenged claims, applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioners would prevail with respect to at least one challenged claim. Paper 7 ("Inst. Dec."). In the Institution Decision, we determined Elastic N.V. demonstrated a reasonable likelihood of prevailing as to at least one challenged claim, and we instituted trial on all claims and all grounds in the Petition. Inst. Dec. 25.

Patent Owner filed a Patent Owner's Response (Paper 9, "PO Resp."), and Elastic N.V. filed a Reply to Patent Owner's Response (Paper 10, "Reply"). Patent Owner did not file a sur-reply to Petitioner's Reply.

Ohio Farmers Insurance Company and Pregis LLC filed a Petition requesting *inter partes* review of claims 1–7 of the '379 patent and a motion for joinder to this proceeding in IPR2022-00217. We granted the motion for

joinder and joined Ohio Farmers Insurance Company and Pregis LLC as Petitioners in this proceeding. *See* IPR2022-00217, Paper 9.

An oral hearing was held on July 26, 2022, and a copy of the hearing transcript has been entered into the record. Paper 17 ("Tr.").

B. Real Parties in Interest

Elastic N.V. identifies itself as a real party in interest. Pet. 10. Ohio Farmers Insurance Company and Pregis LLC, who joined as Petitioners, identify the following entities as real parties in interest: Ohio Farmers Insurance Company d/b/a Westfield, Westfield Insurance Company, Westfield National Insurance Company, and Pregis LLC. *See* IPR2022-00217, Paper 2. Patent Owner identifies itself as a real party in interest. Paper 4, 1.

C. Related Matters

On May 3, 2021, Petitioners indicated that Patent Owner had asserted the '379 patent in the following matters:

- *Guada Technologies LLC v. Ply Gem Industries, Inc.*, 1-20-cv-01718 (D. Del.);

- *Guada Technologies LLC v. GAF Materials LLC*, 1-20-cv-01719 (D. Del.);

- *Guada Technologies LLC v. Flowserve US, Inc.*, 1-20-cv-01431 (D. Del.);

- *Guada Technologies LLC v. Rolled Alloys, Inc.*, 1-20-cv-01432 (D. Del.);

- *Guada Technologies LLC v. Milacron LLC*, 1-20-cv-01143 (D. Del.);

- *Guada Technologies LLC v. Argos USA LLC*, 1-20-cv-00993 (D. Del.);

- *Guada Technologies LLC v. The Gillette Company LLC*, 1-20-cv-00999 (D. Del.);

- *Guada Technologies LLC v. Revlon Consumer Products Corporation*, 1-20-cv-01000 (D. Del.);

- *Guada Technologies LLC v. Dole Food Company, Inc.*, 1-20-cv-00869 (D. Del.);

Pet. 10. On July 7, 2022, Patent Owner indicated that there are no pending administrative or judicial related matters. Paper 14. However, Patent Owner identifies IPR2019-01304 as a related matter by asserting that the arguments set forth in the present Petition are copied "word for word" from the petition in that proceeding. PO Resp. 4. (comparing Pet. 16–65, with *Bloomreach, Inc. v. Gauda Techs. LLC*, IPR2019-01304, Paper 2 at 16–54).

Petitioners indicate that the '379 patent was the subject of a similar *inter partes* review petition in IPR2021-00771, which has since been terminated. Pet. 11. Petitioners also identify the following *inter partes* review proceedings as challenging the '379 patent: IPR2017-01039 (terminated); IPR2019-01304 (terminated); and IPR2020-00598 (terminated). *See* Pet. 5–6.

D.   *The '379 patent*

The '379 patent relates to a method for searching a hierarchical menu tree of nodes or vertices. Ex. 1001, Abstract. One common example of a hierarchical menu tree of nodes or vertices is an automated telephone voice response system. *Id.* at 1:40–41. Users of the system typically have some goal they seek to accomplish within the system, such as a transaction or

piece of information they wish to access. *Id.* at 1:66–2:3. The user's goal is represented by one or more "nodes" or "vertices" within the menu tree. *Id.* at 2:5–8. The user's intent in navigating the menu tree is to get from the first, initial entry point in the menu to the goal vertices. *Id.* at 2:9–18. The '379 patent teaches a system that purportedly allows users to navigate a menu tree more efficiently. *Id.* at 2:22–31.

The '379 patent teaches that in graph theory, a "path" leads from a first vertex to a second vertex, where the path consists of a sequence of "edges" that connect the vertices between the first vertex (the initial entry point into the graph) and the goal vertex. Ex. 1001, 2:64–67. The '379 patent teaches a system that allows a user to navigate a graph or menu tree in a way that allows the user to move from a first vertex to a second vertex where these vertices are not directly connected, eliminating the necessity for making choices to navigate the tree to the goal. *Id.* at 3:29–34.

The '379 patent teaches prompting users for keywords that can be used to identify the user's goal. *Id.* at 4:22–41. Keywords are assigned to each node in the menu tree, allowing a user to "jump" to another place in the tree by providing a keyword associated with the unconnected node. *Id.* at 4:42–5:12.

To illustrate these concepts, the '379 patent teaches an example associated with Figure 2, shown below.
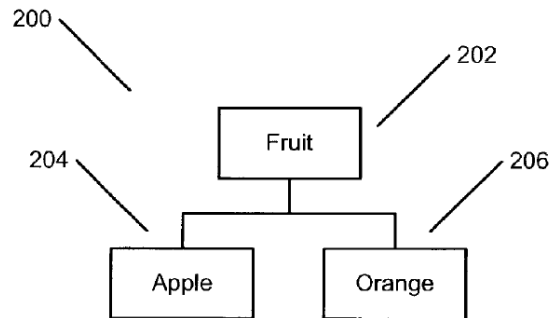
FIG. 2

Figure 2 depicts a simplified graph 200 representing a portion of a more complex tree involving possible decisions relating to fruit. Ex. 1001, 5:43–48. In this example, a user that is prompted at a node above the fruit node with the query "What would you like to buy today?" may respond "orange." *Id.* at 6:7–15. The system would respond by identifying node 206 as relating to the keyword orange and would jump directly to node 206, bypassing the need to navigate through node 202, which is associated with the keyword "fruit." *Id.* at 6:15–21.

E. Illustrative Claim

Of the challenged claims, claims 1 and 7 are independent. Claims 2–6 depend from claim 1. Claim 1 is illustrative of the challenged claims and recites:

> 1. A method performed in a system having multiple navigable nodes interconnected in a hierarchical arrangement comprising:
>
> at a first node, receiving an input from a user of the system, the input containing at least one word identifiable with at least one keyword from among multiple keywords,
>
> identifying at least one node, other than the first node, that is not directly connected to the first node but is associated with the at least one keyword, and

jumping to the at least one node.

Ex. 1001, 22:47–57.

F. Applied References and Declarations

Petitioners rely on the following prior art:

U.S. Patent No. 6,731,724, issued May 4, 2004, filed June 22, 2001 (Ex. 1004, "Wesemann");

U.S. Patent No. No. 6,366,910, issued April 2, 2002 (Ex. 1005, "Rajaraman"); and

U.S. Patent No. 7,539,656, issued May 26, 2009, filed March 6, 2001 (Ex. 1006, "Fratkina").

Petitioners also cite the Declaration of Dr. Padraic Smyth (Ex. 1007).

G. The Asserted Grounds

Petitioners assert that claims 1–7 are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1, 2, 7	§ 103(a)	Wesemann
3–6	§ 103(a)	Wesemann and Rajaraman
1, 2, 7	§ 103(a)	Fratkina
3–6	§ 103(a)	Fratkina and Rajaraman

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.,* 383 U.S. 1, 17

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[2] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. §§ 102 and 103. Because the '379 patent has an effective filing date prior to the effective date of the applicable AIA amendments, we refer to the pre-AIA version of § 103.

(1966). "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The "person of ordinary skill in the art" is a hypothetical construct, from whose vantage point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). "This legal construct is akin to the 'reasonable person' used as a reference in negligence determinations" and "also presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan." *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Petitioners state a person of ordinary skill in the art at the time of the alleged invention would have had a "bachelor's degree in computer science or electrical engineering and at least one year of work on information retrieval and database searching, or the equivalent experience and education." Pet. 9. Dr. Smyth's testimony supports Petitioners' position. *See* Ex. 1007 ¶¶ 28–30. Patent Owner does not explicitly refute these assertions. *See generally* PO Resp. We adopt Petitioners' definition of the level of ordinary skill in the art because it aligns with the technology of the '379 patent and the descriptions of the art in the prior art of record. *See Okajima v. Bourdeau,* 261 F.3d 1350, 1355 (Fed. Cir. 2001) (stating that the absence of specific findings on the level of skill in the art does not give rise to reversible error where the prior art itself reflects an appropriate level and a need for testimony is not shown).

B. Claim Construction

Pursuant to 37 C.F.R. § 42.100(b), the claims of the '379 patent shall be construed in this proceeding "using the same claim construction standard

that would be used to construe the claim[s] in a civil action." As such, the claims should be interpreted according to the principles outlined in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*).

Under this standard, claim terms are generally given their plain and ordinary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1313. "There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Petitioners propose construing five claim terms. Pet. 13–16. First, Petitioners propose construing "node" to mean "a specific choice or option in a hierarchy." *Id.* at 13. Second, Petitioners propose construing "vertex" to mean "a specific choice or option in a hierarchy that can be represented in a graph." *Id.* at 13–14. Third, Petitioners propose construing "keyword" to mean "one or more words or pieces of information, such as a specific data pattern, that is associated with at least one node or vertex." *Id.* at 14–15. Fourth, Petitioners propose construing "jumping"[3] to mean "a direct traversal from one node or vertex to another node or vertex that is not directly connected to it (*i.e.*, without traversal through any intervening nodes or vertices or to a node or vertex whose only least common ancestor with that node or vertex is the root node or vertex)." *Id.* at 15. Petitioners assert that the Applicant defined "jumping" in this manner during prosecution of

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[3] Independent claim 1 recites "jumping to the at least one node" and independent claim 7 recites "jumping to the vertex." Ex. 1001, 22:57, 24:11.

the '379 patent. *Id.* at 15. Fifth, Petitioners propose construing "verbal description" to mean "a set of words relating to the subject matter whether presented audibly or in written form." *Id.* at 15–16. Patent Owner did not explicitly propose construing any claim terms in its Preliminary Response. *See generally* Prelim. Resp.

In our Decision on Institution, we adopted Petitioners' proposed construction of the term "jumping": "a direct traversal from one node or vertex to another node or vertex that is not directly connected to it (*i.e.*, without traversal through any intervening nodes or vertices or to a node or vertex whose only least common ancestor with that node or vertex is the root node or vertex)." Inst. Dec. 8. We determined that no other terms required explicit construction. *Id.* The parties do not dispute the constructions of these terms in their briefing. *See* PO Resp. 6; Reply 11–12. Upon considering the complete record, we see no reason to deviate from our preliminary determination for this Final Written Decision and adopt Petitioner's construction of the term "jumping." For the purposes of this Final Written Decision, no other terms require explicit construction. *See, e.g.*, *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. *Ground 1: Alleged Obviousness of Claims 1, 2, and 7 over Wesemann*

Petitioners contend that claims 1, 2, and 7 are unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann. A claim is unpatentable for obviousness under § 103(a) if the differences between the claimed subject

matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations).[4] *Graham*, 383 U.S. at 17–18 (1966). "An obviousness determination requires finding both 'that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.'" *CRFD Research, Inc. v. Matal*, 876 F.3d 1330, 1340 (Fed. Cir. 2017) (quoting *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1366 (Fed. Cir. 2016)). A patent can also be obvious in light of a single prior art reference if it would have been obvious to modify that reference to arrive at the patented invention. *See, e.g.*, *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

1. *Wesemann*

Wesemann is a United States patent directed to a voice-enabled user interface that allows a user to provide vocal input to access data from telephone systems that are only responsive to dual tone multi-frequency

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[4] Patent Owner has not presented evidence of objective indicia of non-obviousness. *See generally* PO Resp.

("DTMF") signals. Ex. 1004, Abstract. Figure 6 of Wesemann is reproduced
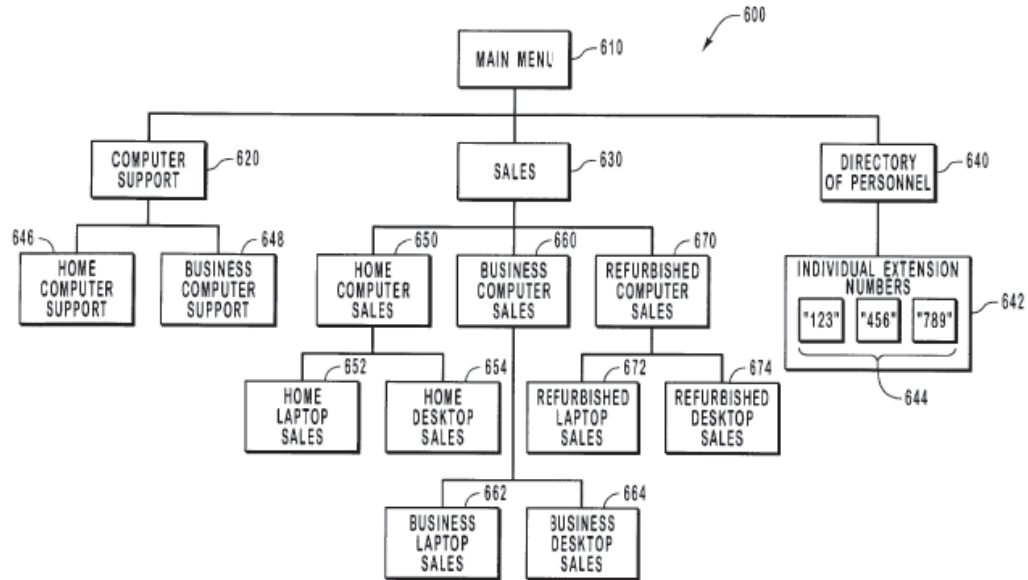below.

FIG. 6

Figure 6 depicts a block diagram of a hierarchical menu structure of a
telephone service system that can be navigated by a voice-enabled user
interface. *Id.* at 4:25–28. The block diagram illustrates the prompts provided
to the user at each stage of the menu. *Id.* at 11:33–37. For example, at main
menu 610, the user is prompted to "press 1 followed by # for sales," "press 2
followed by # for computer support," or "press 3 followed by # for a
directory of personnel." *Id.* at 11:34–45. The user may respond vocally to
these prompts, and the user's response may represent an input that is valid
from another state of the menu hierarchy instead of the present state of the
menu hierarchy. *Id.* at 11:51–55.

 For example, a user may jump from main menu 610 to a particular
extension, such as "123." *Id.* at 12:30–32. In another example, a user may
jump from home laptop sales 652 to home computer support 646 by saying

"home computer support." *Id.* at 12:32–34. A user may also jump from main menu 610 to refurbished laptop sales 672 by saying "refurbished laptop sales." *Id.* at 11:65–12:12. In each of these examples, it is not necessary for the user to return to main menu 610 and traverse each node of the menu to reach their goal. *Id.* at 12:34–36.

2. *Independent Claim 1*

a) *Preamble*

The preamble of claim 1 recites: "[a] method performed in a system having multiple navigable nodes interconnected in a hierarchical arrangement." Ex. 1001, 22:47–49. Petitioners assert that Wesemann teaches or suggests this feature. Pet. 19–21. In particular, Petitioners assert that Wesemann teaches "menu states" or "levels" interconnected in a hierarchical arrangement. *Id.* at 19 (citing Ex. 1004, Figs. 5–6, Abstract, 3:33–46). Dr. Smyth's testimony supports Petitioners' assertions. *See* Ex. 1007 ¶¶ 48–56.

Patent Owner does not argue that Wesemann fails to teach or suggest the preamble of claim 1. *See generally* PO Resp. Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Petitioners have shown by a preponderance of the evidence that Wesemann teaches the preamble of claim 1.[5]

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[5] Because Petitioners have shown sufficiently that the recitations in the preamble are satisfied by Wesemann, we need not determine whether the preamble is limiting. *See Vivid Techs.*, 200 F.3d at 803.

b) *Receiving Limitation*

Claim 1 further recites "at a first node, receiving an input from a user of the system, the input containing at least one word identifiable with at least one keyword from among multiple keywords." Ex. 1001, 22:50–53.

Petitioners assert that Wesemann teaches or suggests this feature. Pet. 21–26. In particular, Petitioners assert that Wesemann teaches or suggests receiving spoken words from a user at a first level or menu state, which Petitioners assert corresponds to the claimed "first node" of the hierarchical arrangement of nodes. *Id.* at 21 (citing Ex. 1004, Abstract, 3:28–30, 4:51–57, 6:56–64, 11:47–12:6, 12:43–52). Petitioners assert that the system may receive user input, such as "refurbished laptop sales," at main menu state 610. *Id.* (citing Ex. 1004, 11:65–12:6). Petitioners assert that Wesemann teaches a template that maps "acceptable responses and inputs" (keywords) with each of the menu states (i.e., nodes) in the hierarchy. *See, e.g., id.* at 22–23 (citing Ex. 1004, 7:15–17, 8:56–63, 12:13–16). Dr. Smyth's testimony supports Petitioners' assertions. Ex. 1007 ¶¶ 48–56.

Patent Owner does not specifically argue that Wesemann fails to teach or suggest this limitation in its briefing. Instead, Patent Owner merely asserts that the arguments presented in the Petition for Ground 1 are the same arguments that were presented to and rejected by the Board in IPR2019-01304. PO Resp. 7. Patent Owner asserts that, because the arguments presented in the present Petition are copied from the petition filed in IPR2019-01304, the Board should reject Ground 1 for the same reasons that the Board determined the petitioner in IPR2019-01304 had failed to show a reasonable likelihood of prevailing. *See* PO Resp. 7. However, the Panel in IPR2019-01304 did not address directly the "receiving" limitation when it

stated that, based on the record of IPR2019-01304 as it stood at that time and subject to further evidence and argument by the parties, the petitioner had failed to show a reasonable likelihood of prevailing on certain grounds. *See Bloomreach, Inc. v. Gauda Techs. LLC*, IPR2019-01304, Paper 11 at 18–20 (PTAB Jan. 23, 2020). Instead, the Panel in IPR2019-01304 noted that the dispute in that IPR focused on the phrases "jumping to the at least one node" recited in claim 1 and "jumping to the vertex" recited in claim 7, which are addressed in the following analysis. *See infra* Section II.C.2.c.

During the oral hearing, however, we understood Patent Owner to argue that the '379 patent discloses that when a keyword is associated with multiple nodes, the system decides *arbitrarily* where the user would jump as a result of inverted indexing. *See* Tr. 17:3–18:6, 22:13–23:2. We understood Patent Owner to argue that this arbitrary determination feature is distinguishable from the prior art of record, which teaches that determining a destination node is based on determining a user's intent. *Id.* at 21:26–23:2. Further, we understood Patent Owner's argument to be related to the limitation "the input containing at least one word identifiable with at least one keyword from among multiple keywords." *Id.* at 22:3–10. We presume this argument was intended to apply to Grounds 1 and 3 because Patent Owner referred to both Wesemann and Fratkina during this argument. *See* Tr. 21:26–22:12.

As admitted by Patent Owner, this argument was not raised in the Patent Owner Response. Tr. 16:17–20, 23:11–14. Instead, this argument was raised for first time at the hearing, during which Petitioners timely objected. Tr. 27:17–28:5. Because Patent Owner did not raise this argument timely and in a substantive brief, this argument is deemed waived. *See* Paper 10

(Scheduling Order), 8 ("Patent Owner is cautioned that any arguments not raised in the response may be deemed waived."); *see also See Novartis AG v. Torrent Pharm. Ltd.*, 853 F.3d 1316, 1330 (Fed. Cir. 2017); *In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016).

Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Wesemann teaches this limitation (i.e., at a first node, receiving an input from a user of the system, the input containing at least one word identifiable with at least one keyword from among multiple keywords). In particular, Wesemann teaches receiving spoken words, such as "refurbished laptop sales," from a user at main menu state 610 ("at a first node, receiving an input from a user of the system"). Ex. 1004, 11:65–12:6. Wesemann teaches identifying the closest stored keyword using templates that map acceptable responses and input to menu states in the hierarchy ("the input containing at least one word identifiable with at least one keyword from among multiple keywords"). *Id.* at 12:25–36. Thus, considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Wesemann teaches this limitation.

c) *Identifying and Jumping Limitations*

Claim 1 further recites "identifying at least one node, other than the first node, that is not directly connected to the first node but is associated with the at least one keyword, and jumping to the at least one node." Ex. 1001, 22:54–56. As noted above, we construe "jumping" to mean "a direct traversal from one node or vertex to another node or vertex that is not directly connected to it (i.e., without traversal through any intervening nodes

or vertices or to a node or vertex whose only least common ancestor with that node or vertex is the root node or vertex)." *See supra* Section II.B.

Petitioners assert that Wesemann teaches or suggests this feature. Pet. 26–29. In particular, Petitioners assert that Wesemann teaches that all menu states ("nodes") in the hierarchy are mapped in template 232 to acceptable responses or inputs ("keywords"). *Id.* at 27 (citing Ex. 1004, 7:15–17). Petitioners assert that Wesemann teaches speech recognition software that analyzes the user's spoken input and compares the input to the stored acceptable responses and inputs to determine the node with the response most similar to the input. *Id.* at 22 (citing Ex. 1004, 6:56–64, 7:6–14, 12:13–21, 12:45–52). Petitioners assert that the system is capable of jumping both laterally and vertically to an identified node having a keyword matching the user's input. *Id.* at 28 (citing Ex. 1004, 12:25–42). Petitioners assert that Wesemann's examples of jumping from main menu 610 to extension "123" and jumping from home laptop sales 652 to home computer support 646 both involve jumping to an unconnected node, without traversal through any intervening nodes or to a node whose only least common ancestor is the root node. *Id.* at 28–29. Petitioners annotate Figure 6 (*id.* at 28) as shown below in support of these assertions:
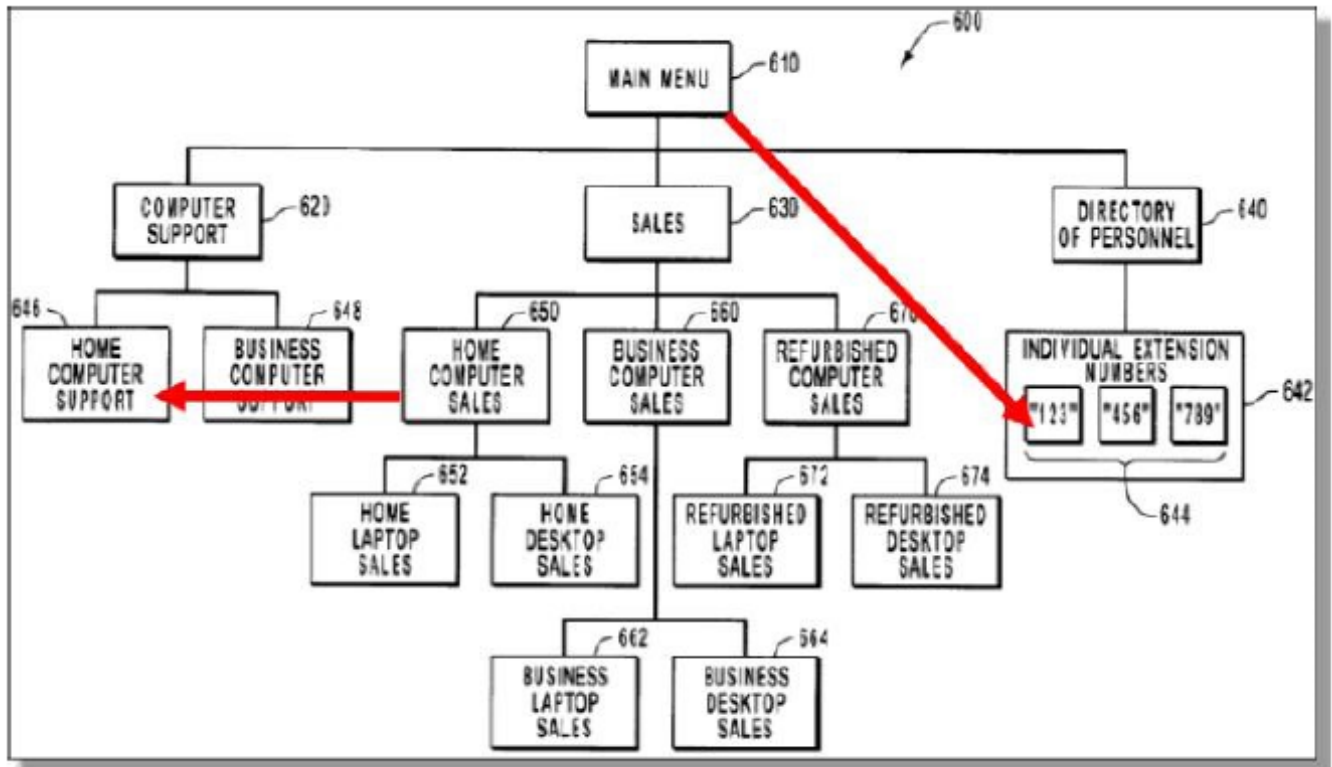
Annotated Figure 6 depicts the block diagram illustrating the hierarchical menu of Wesemann's telephone service system with red arrows representing the jumps from main menu 610 to extension "123" and from home computer sales 650[6] to home computer support 646, respectively. Petitioners assert that Wesemann's jumps occur automatically without requiring the user to select different menu items or navigate through the hierarchical menu.

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[6] Petitioners indicate the arrow in Annotated Figure 6 pointing from home computer sales 650 to home computer support 646 is a typographical error, and the arrow is intended to point from home laptop sales 652 to home computer support 646. Tr. 9:24–10:9. This typographical error does not materially affect Petitioner's assertions, which rely on the corresponding description that describes the example. *See* Pet. 27–28 (citing Ex. 1004, 12:25–42).

Pet. 27–29 (citing Ex. 1004, 8:1–5, 11:65–12:6, 12:30–32, 12:43–46, 12:65–13:2).

Patent Owner does not specifically argue that Wesemann fails to teach or suggest this limitation. Instead, as noted above, Patent Owner merely asserts that the arguments presented in the Petition are identical to the arguments presented in the petition for IPR2019-01304, and the Board should reject Ground 1 for the same reasons that the Board concluded in the Decision on Institution in IPR2019-01304 ("the -1304 Decision on Institution") that the petitioner in IPR2019-01304 had failed to show a reasonable likelihood of prevailing on Ground 1. *See* PO Resp. 4, 7.

In the -1304 Decision on Institution, the Panel made a preliminary determination that the petition there had not shown a reasonable likelihood of prevailing in establishing obviousness of claim 1 over Wesemann, noting that claim 1 requires "jumping" between nodes not directly connected, while Wesemann's "jump" may refer to a transition across multiple *connected* nodes. *Bloomreach, Inc. v. Gauda Techs. LLC*, IPR2019-01304, Paper 11 at 19 (PTAB January 23, 2020). The Panel further stated that its final determination on this issue, however, would be made after review of the complete record, including further briefing and evidence submitted by the parties. *See id.*

Petitioners address this issue in this Petition, providing additional evidence and argument to show that Wesemann's "jump" need not be between multiple connected nodes. *See, e.g.*, Pet. 17–19; Reply 3–5; Ex. 1007 ¶ 51 (explaining that although Wesemann can involve a transition across multiple connected nodes, Wesemann additionally describes a jump directly from one node to another). Petitioners explain that Wesemann's

examples of jumping, such as jumping from main menu 610 to extension "123" and jumping from home laptop sales 652 to home computer support 646, both involve jumping to a node that is not directly connected to the first node, without traversal through any intervening nodes or to a node whose only least common ancestor is the root node. Pet. 16–19 (citing Ex. 1004, 3:10–14, 3:54–56, 12:25–34), 28–29 (citing Ex. 1001, 1:47–50, 13:39–63; Ex. 1004, 12:53–65; Ex. 1007 ¶ 56); *see also* Reply 3–5.

Unlike the preliminary determination made in IPR2019-01304, the Decision on Institution in the present proceeding determined that Petitioner did show a reasonable likelihood of prevailing in establishing obviousness of claim 1 over Wesemann. We expressly stated that, based on the record at the time, Petitioner had made a sufficient showing that Wesemann's teachings of (1) navigating from main menu 610 to a node not directly connected to the first node (e.g., extension 123) and (2) jumping from home laptop sales 652 to home computer support 646, teach or suggest the jumping limitations. Dec. Inst 14–15 (citing Ex. 1004, 8:1–5, 11:51–55, 12:25–36). Patent Owner does not directly respond to these assertions. *See* PO Resp.

Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Wesemann teaches these limitations. In particular, the examples identified in the Petition involve navigating from a first node, such as main menu 610, to a node that is not directly connected to the first node, such as extension "123." *See* Ex. 1004, 8:1–5, 11:51–55, 12:25–32; Pet. 16–19. In another identified example, Wessemann jumps from home laptop sales 652 to home computer support 646. *See id.* at 12:32–36. These nodes do not share a common ancestor other than the root node. Thus, Wessemann traverses from a first node (home laptop sales 652) "to a

node or vertex whose only least common ancestor with that node or vertex is the root node or vertex" (home computer support 646). *See* Pet. 26.

> d)   *Conclusion on Claim 1*

Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Wesemann teaches or suggests every limitation of claim 1. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann.

> 3.   *Dependent Claim 2*

Claim 2 recites "[t]he method of claim 1 further comprising: providing a verbal description associated with the at least one node to the user." Ex. 1001, 22:58–60. Petitioners assert Wesemann teaches this limitation by teaching menu prompts corresponding to each of the menu states, where these menu prompts are verbally presented to the user over a telephone device when a user is at a particular menu state. Pet. 30–31 (citing Ex. 1004, Fig. 6, 3:28–30, 5:55–60, 5:62–67, 7:15–17, 8:56–59, 11:33–38, 11:65–12:6, 15:39–47, 15:52–56, 17:14–36, 17:66–18:4, 18:19–29:27; Ex. 1007 ¶¶ 57, 63).

Patent Owner does not dispute Petitioners' assertions. Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Wesemann teaches this limitation. In particular, Wesemann teaches verbally presenting menu prompts to the system user ("providing a verbal description . . . to the user"). *See, e.g.*, Ex. 1004, Fig. 6, 3:28–30, 5:55–60, 5:62–67, 7:15–17, 8:56–59, 11:33–38, 11:65–12:6. These menu prompts correspond to menu states ("associated with the at least one node").

See id. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Wesemann teaches the limitation of claim 2. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 2 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann.

4. *Independent Claim 7*

Independent claim 7 recites "[a] method performed in connection with an arrangement of nodes representable as a hierarchical graph containing vertices and edges connecting at least two of the vertices, the method comprising." Ex. 1001, 23:11–24:2. Claim 7 also recites similar limitations to those found in claims 1 and 2. Petitioners contend Wesemann teaches or suggests all of the limitations of claim 7, including for reasons similar to those set forth for claims 1 and 2. *See* Pet. 32–38. Other than the arguments set forth above regarding claim 1, Patent Owner does not provide separate argument for claim 7. *See* PO Resp. 7. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Wesemann teaches every limitation of claim 7 for substantially the same reasons as claims 1 and 2. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 7 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann.

D. *Ground 2: Alleged Obviousness of Claims 3–6 over Wesemann and Rajaraman*

Claims 3–6 depend from Claim 1. Petitioners rely on Rajaraman as disclosing the further recited limitations in these dependent claims and have

articulated a reasonable rationale why a person skilled in the art would have combined the teachings of Wesemann and Rajaraman. *See* Pet. 38–50.

1. Dependent claim 3

Claim 3 recites "[t]he method of claim 1 further comprising: searching a thesaurus correlating keywords with synonyms." Ex. 1001, 22:61–63. Petitioners assert Rajaraman teaches a searching system for hierarchal classifications that uses a special terms file (the claimed "thesaurus") that lists various words that are synonymous with the classification names ("correlating keywords with synonyms"). Pet. 41 (citing Ex. 1005, 7:22–42; 7:63–8:30; 9:7–45; Fig. 7, Fig. 9, Fig. 11). Petitioners assert an ordinarily skilled artisan would have been motivated to combine Wesemann's menu-state system that jumps to a menu state having an acceptable response corresponding to the user's spoken word with Rajaraman's teaching of searching an index of classifications that includes a special terms file that assigns good terms to different classifications. *Id.* at 43. Petitioners assert an ordinarily skilled artisan would have appreciated that the combination would be more user friendly, benefiting users unaware of the predetermined keywords and allowing greater flexibility. *Id.* at 44.

Patent Owner does not dispute Petitioners' assertions. Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Petitioners have met their burden of showing that (1) the combination of Wesemann and Rajaraman teaches the limitations of claim 3 and (2) an ordinarily skilled artisan would have had a reason to combine the teachings of Wesemann and Rajaraman as proposed by Petitioners. Accordingly, we determine that Petitioners have demonstrated by a

preponderance of the evidence that claim 3 is unpatentable under 35 U.S.C.
§ 103(a) as obvious over Wesemann and Rajaraman.

2. Dependent claim 4

Claim 4 recites "[t]he method of claim 3 wherein the searching further comprises: identifying the at least one word as synonymous with the at least one keyword." Ex. 1001, 22:64–67. Petitioners assert Rajaraman teaches identifying at least one word input by a user, such as "blouse," that is synonymous with at least one node's classification, or keyword, such as "women's shirts," through using the special terms file. Pet. 42–43 (citing Ex. 1005, 7:22–26; Fig. 7).

Patent Owner does not dispute Petitioners' assertions. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Wesemann teaches or suggests every limitation of claim 4. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 4 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann and Rajaraman.

3. Dependent claim 5

Claim 5 recites

The method of claim 1 further comprising: determining that the at least one word is neither a keyword nor a synonym of any keyword; and learning a meaning for the word so that the word will be treated as a learned synonym for at least one particular keyword of the multiple keywords.

Ex. 1001, 23:1–6. Petitioners assert Rajaraman teaches this limitation by teaching that its search determines that a word queried by a user is neither a keyword nor a synonym of a keyword and adding this word to its thesaurus

based on analysis of user's search behavior. Pet. 45–56 (citing Ex. 1005, 7:63–8:19; Ex. 1007 ¶ 76).

Patent Owner does not dispute Petitioners' assertions. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Rajaraman teaches or suggests every limitation of claim 5. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 5 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann and Rajaraman.

4. *Dependent claim 6*

Claim 6 recites "[t]he method of claim 5 further comprising: adding the word to a thesaurus so that, when the word is input by a subsequent user, the word will be treated as synonymous with the at least one particular keyword." Ex. 1001, 23:7–10. Petitioners assert Rajaraman teaches this limitation by teaching that its search determines that a word queried by a user is neither a keyword nor a synonym of a keyword and adding this word to its thesaurus based on analysis of user's search behavior. Pet. 45–56 (citing Ex. 1005, 7:63–8:19; Ex. 1007 ¶ 76).

Patent Owner does not dispute Petitioners' assertions. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Rajaraman teaches or suggests every limitation of claim 6. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 6 is unpatentable under 35 U.S.C. § 103(a) as obvious over Wesemann and Rajaraman.

E. *Ground 3: Alleged Obviousness of Claims 1, 2, and 7 over Fratkina*

Petitioners contend that claims 1, 2, and 7 are unpatentable under 35 U.S.C. § 103(a) as obvious over Fratkina.

1. *Fratkina*

Fratkina is a United States patent directed to the use of multi-stage interaction with a client to identify particular knowledge associated with a content map. Ex. 1006, Abstract. Figure 11 of Fratkina is reproduced below.
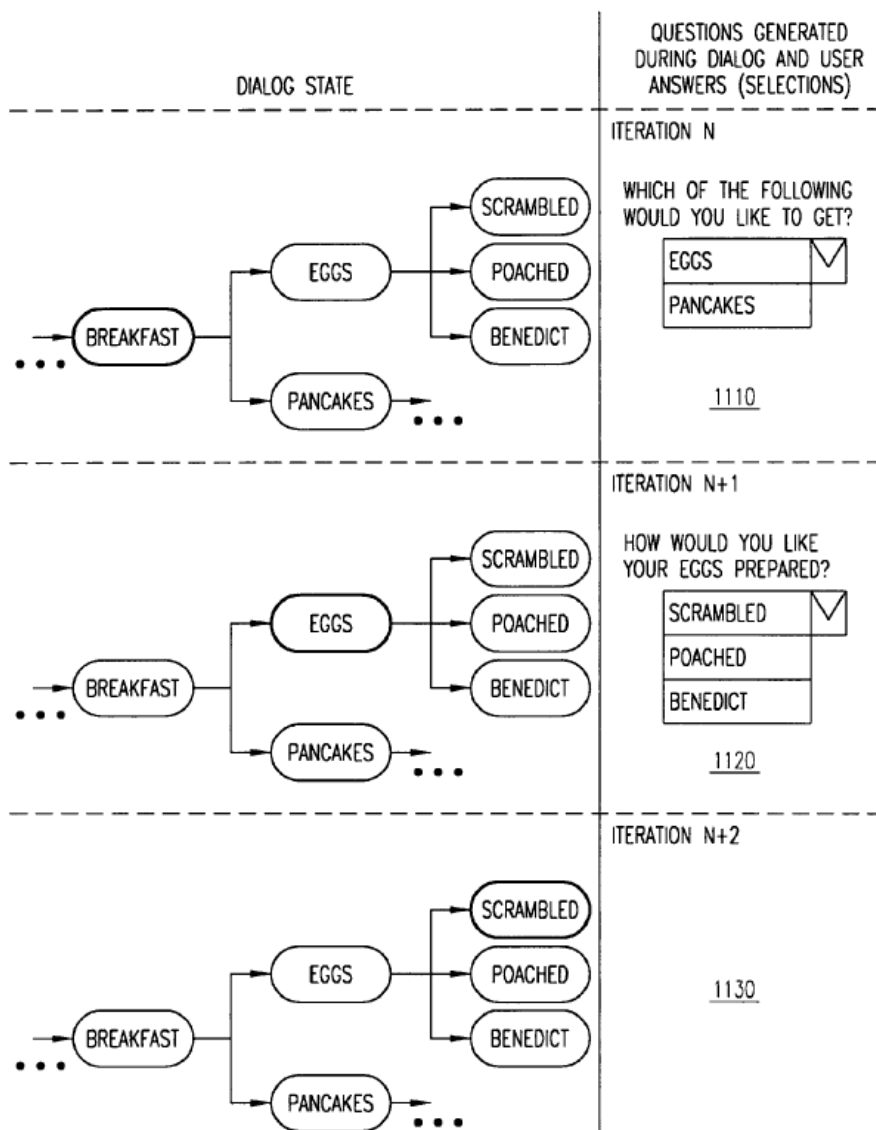

FIG. 11

Figure 11 depicts an example dialog created by dialog engine 232. *Id.* at 26:46–50. In this example, the dialog begins at the "[b]reakfast" node in iteration N, where the user is prompted with the question "[w]hich of the following would you like to get?" *Id.* at 26:50–54. The user responds "eggs," and the dialog engine proceeds to iteration N+1 with the dialog at the "eggs" node. *Id.* The user is next prompted with the question "[h]ow would you like your eggs prepared?" *Id.* at 26:54–56. The user responds "scrambled," which moves the dialog to the "scrambled" node in iteration N+2. *Id.* In this example, the user is choosing multiple choice answers, which each represent a "confirmed" node because relevance to the user's request has been established. *Id.* at 26:54–60.

Fratkina teaches several variations to this example, including a process termed "autocontextualization." *See, e.g.*, Ex. 1006, 29:1–14. Fratkina teaches that autocontextualization is a process by which information is derived from user input and compared to taxonomies in the knowledge map to identify relevant nodes. *Id.* Fratkina teaches that autocontextualization may be used to "jump" to a specific place in the taxonomy. *Id.* at 34:40–42. Fratkina teaches that, for example, when a user types in "Scrambled eggs" as illustrated in Figure 15, if the autocontextualized input is recognized as corresponding to a known menu, the corresponding node is confirmed. *Id.* at 37:31–63.

2. *Independent Claim 1*

a) *Preamble*

The preamble of claim 1 recites: "[a] method performed in a system having multiple navigable nodes interconnected in a hierarchical arrangement." Ex. 1001, 22:47–49. Petitioners assert that Fratkina teaches or

suggests this feature. Pet. 51–53. In particular, Petitioners assert Fratkina teaches the use of hierarchical taxonomies containing interconnected nodes that may be navigated by a user. *Id.* (citing Ex. 1006, Figs. 4–5, 4:42–5:19, 14:47–59). Dr. Smyth's testimony supports Petitioners' assertions. *See* Ex. 1007 ¶ 80.

Patent Owner does not argue that Fratkina fails to teach the preamble of claim 1. *See generally* PO Resp. Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Petitioners have shown by a preponderance of the evidence that Fratkina teaches or suggests the preamble of claim 1.[7]

b) *Receiving Limitation*

Claim 1 further recites "at a first node, receiving an input from a user of the system, the input containing at least one word identifiable with at least one keyword from among multiple keywords." Ex. 1001, 22:50–53.

Petitioners assert that Fratkina teaches or suggests this feature. Pet. 53–57. In particular, Petitioners assert Fratkina teaches a system that receives input from a user at a first node. *Id.* at 53 (citing Ex. 1006, Figs. 10–12, 13:15–39, 22:19–29, 26:36–57, 34:9–53). Petitioners assert the input may be "keyword or natural language" queries that a dialog engine converts into tags to be processed by the system using autocontextualization. *Id.* at 53–54 (citing Ex. 1006, 5:13–28, 5:58–8:10, 14:27–31). Petitioners assert the system uses the inputs to traverse the taxonomy. *Id.* at 54 (citing

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[7] Because Petitioners have shown sufficiently that the recitations in the preamble are satisfied by Fratkina, we need not determine whether the preamble is limiting. *See Vivid Techs.*, 200 F.3d at 803.

Ex. 1006, 14:27–31, 26:46–27:27). Dr. Smyth's testimony supports Petitioners' assertions. *See* Ex. 1007 ¶¶ 80–83.

Patent Owner does not argue that Fratkina fails to teach this limitation in its submitted briefing. *See generally* PO Resp. As discussed above with respect to Ground 1, during the oral hearing, we understood Patent Owner to argue that the '379 patent discloses that when a keyword is associated with multiple nodes, the system decides arbitrarily where the user would jump as a result of inverted indexing. Tr. 17:3–18:6, 22:13–23:2. We understood Patent Owner to argue that this arbitrary determination feature is distinguishable from the prior art of record, which teaches that determining a destination node is based on determining a user's intent. *Id.* at 21:26–23:2. We understood Patent Owner's argument to be related to the limitation "the input containing at least one word identifiable with at least one keyword from among multiple keywords." *Id.* at 22:3–10. Based on the complete record, we presume this argument was intended to apply to both Grounds 1 and 3. For the reasons we discussed in our analysis of Ground 1, this argument is deemed waived. *See supra* Section II.C.2.b.

Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Fratkina teaches or suggests this limitation. In particular, Fratkina teaches a system that receives input from a user at a first node. Ex. 1006, Figs. 10–12, 13:15–39, 22:19–29, 26:36–57, 34:9–53. The input may be keywords or natural language that a dialog engine autocontextualizes against taxonomies in the knowledge map, identifying topic spotter nodes that represent the system's understanding of the user's input ("the input containing at least one word identifiable with at least one keyword from among multiple keywords"). *Id.* Thus, considering

the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Fratkina teaches or suggests this limitation.

c) *Identifying and Jumping Limitations*

Claim 1 further recites "identifying at least one node, other than the first node, that is not directly connected to the first node but is associated with the at least one keyword, and jumping to the at least one node." Ex. 1001, 22:54–56. As noted above, we construe "jumping" to mean

> a direct traversal from one node or vertex to another node or vertex that is not directly connected to it (i.e., without traversal through any intervening nodes or vertices or to a node or vertex whose only least common ancestor with that node or vertex is the root node or vertex).

See supra Section II.B.

Petitioners assert that Fratkina teaches or suggests this feature. Pet. 57–59. In particular, Petitioners assert that Fratkina teaches that autocontextualization allows users to navigate directly to nodes that are not directly connected to a first node without traversing through intervening nodes. *Id.* at 57–58 (citing Ex. 1006, 27:25–43, 34:32–53, 37:54–63). Petitioners explain autocontextualization by way of example, asserting that Fratkina teaches an embodiment wherein a user may navigate a hierarchical menu that includes options such as "breakfast," "eggs," and "scrambled." *Id.* at 58. Petitioners assert that if a user at the "breakfast" node desires "scrambled eggs," the user may simply say "scrambled eggs" in response to a question about what the user wants for breakfast. *Id.* Petitioners assert that in this example, Fratkina's autocontextualization allows the dialog to identify "scrambled" as the goal node and the system will jump directly to

that node, without requiring the user to first traverse through the intervening "eggs" node. *Id.* (citing Ex. 1006, Fig. 12, 27:25–43, 34:9–53, 37:54–63; Ex. 1007 ¶ 84). Dr. Smyth's testimony supports Petitioners' assertions, explaining that an ordinarily skilled artisan would understand autocontextualization to allow this type of jumping. *See* Ex. 1007 ¶¶ 80–84.

Patent Owner argues that Fratkina fails to teach "jumping to the at least one node," as claimed. PO Resp. 5–6. In particular, Patent Owner argues that Fratkina teaches "autocontextualization, being an automatic process, can make mistakes. Therefore, it may not be safe to assume that correct concept tags have been extracted from the query. User preference information, though human-entered, may be outdated." *Id.* at 5 (citing Ex. 1006, 33:52–57). Patent Owner argues that Fratkina specifically requires confirmation because autocontextualization can make mistakes. *Id.* According to Patent Owner, autocontextualization results in "topic spotter nodes" that are not automatically accepted as true and must be verified. *Id.* Patent Owner argues that this results in a user input step and a separate verification step, but the '379 patent expressly does not require a verification step. *Id.* at 5–6.

We agree with Petitioners that Fratkina teaches autocontextualizing a user's input, such as "scrambled eggs," against the taxonomies in a knowledge map to identify "scrambled" as the goal node. *See* Pet. 57–58 (citing Ex. 1006, Fig. 12, 27:25–43, 34:9–53, 37:54–63; Ex. 1007 ¶ 84). As asserted by Petitioners, Fratkina teaches that autocontextualization allows the system to jump directly to the "scrambled" node without requiring the user to first traverse through the intervening "eggs" node. *Id.*

We disagree with Patent Owner's argument that Fratkina requires a verification step for two reasons. First, claim 1 recites "[a] method performed in a system having multiple navigable nodes interconnected in a hierarchical arrangement comprising . . . identifying at least one node . . . that is not directly connected to the first node . . . and jumping to the at least one node." Ex. 1001, 22:47–57. Thus, claim 1 recites identifying a node that is not directly connected to the first node and jumping to the at least one node. We have construed "jumping" to mean

> a direct traversal from one node or vertex to another node or vertex that is not directly connected to it (i.e., without traversal through any intervening nodes or vertices or to a node or vertex whose only least common ancestor with that node or vertex is the root node or vertex).

See supra Section II.B. We disagree with Patent Owner's argument that the '379 patent does not require a verification step because claim 1 does not preclude a verification step from occurring. That is, claim 1 recites a method comprising the "identifying" and "jumping" steps. The term "comprising" is open-ended and does not exclude additional, unrecited elements or method steps. *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007). Thus, Patent Owner's argument is not commensurate with the scope of the claim.

Second, even if claim 1 required that the "jumping" step occur without a verification step, we disagree with Patent Owner's argument that autocontextualization is "not to be trusted" without verification because Fratkina teaches that dialog designers may choose to trust autocontextualization results. In particular, as asserted by Petitioners, Fratkina teaches "it *may not* be safe to assume that correct concept tags have

been extracted from the query" by autocontextualization, implying that in some circumstances it may be safe to assume that correct concept tags have been extracted. Ex. 1006, 33:55–56 (emphasis added); Reply 15–16 (citing Ex. 1006, 26:8–14, 33:52–57, 34:1–3). Fratkina confirms that a dialog designer may choose to trust autocontextualization results, teaching that whether a dialog advances to an autocontextualized node is governed by a goal parameter whose value is set by the dialog designer. Ex. 1006, 33:62–66. The autocontextualized node may or may not be verified by a user. *Id.* at 33:62–34:3. Fratkina teaches that this approach maximizes the flexibility afforded to a dialog designer. *Id.* at 33:66–34:1. Also, in case of autocontextualization resulting in identifying a single topic spotter node, Fratkina teaches the confirmation of the node without verification. *Id.* at 37:31–63; *see also* Tr. 21:13–24. Indeed, Patent Owner admits that "if the system determines the user's need to be a node that it believes is confirmed, then it can advance with no verification step and jump directly to that node." Tr. 25:4–8; *see also* Tr. 32:21–33:1.

Thus, contrary to Patent Owner's argument, Fratkina does not teach that autocontextualized nodes *cannot or must not* be trusted, but instead teaches that dialog designers decide whether to trust the results of autocontextualization. And dialog designers may choose to trust the results of autocontextualization without verification questions. In other words, dialog designers may choose to allow the dialog to advance (i.e., jump) to an autocontextualized, non-adjacent node *without any further action* by the system or the user. Thus, we disagree with Patent Owner's argument that autocontextualization is not used to jump to non-adjacent nodes without verification.

d) *Conclusion on Claim 1*

Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Fratkina teaches or suggests every limitation of claim 1. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Fratkina.

3. *Dependent claim 2*

Claim 2 recites "[t]he method of claim 1 further comprising: providing a verbal description associated with the at least one node to the user." Ex. 1001, 22:58–60. Petitioners assert Fratkina teaches this limitation by teaching a text-to-speech system that outputs a vocal response to the user. Pet. 59–60 (citing Ex. 1006, Fig. 11, Fig. 21, 13:15–24, 26:34–60, 37:12–30); Ex. 1007 ¶ 85).

Patent Owner does not dispute Petitioners' assertions. We have reviewed the Petition and Patent Owner's Response and determine, on the complete record, that Petitioners have demonstrated by a preponderance of the evidence that Fratkina teaches or suggests the limitation of claim 2. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 2 is unpatentable under 35 U.S.C. § 103(a) as obvious over Fratkina.

4. *Independent Claim 7*

Independent claim 7 recites "[a] method performed in connection with an arrangement of nodes representable as a hierarchical graph containing vertices and edges connecting at least two of the vertices, the method comprising." Ex. 1001, 23:11–24:2. Claim 7 recites similar limitations to

claims 1 and 2 and Petitioners' analysis is similar. *See* Pet. 60–66. Patent Owner does not provide separate argument for claim 7. *See* PO Resp. 3–7. Considering the evidence as a whole, we are persuaded that Petitioners have demonstrated by a preponderance of the evidence that Fratkina teaches every limitation of claim 7 for substantially the same reasons as claims 1 and 2. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claim 7 is unpatentable under 35 U.S.C. § 103(a) as obvious over Fratkina.

F.   *Ground 4: Alleged Obviousness of Claims 3–6 over Fratkina and Rajaraman*

Claims 3–6 depend from Claim 1. Petitioners rely on Rajaraman as disclosing the further recited limitations in these dependent claims in the same manner as discussed above with respect to Ground 2. *See* Pet. 65–66. Petitioners assert an ordinarily skilled artisan would have combined Fratkina's system with Rajaraman's thesaurus functionality provided by the special terms file that assigns good terms to different classifications and Rajaraman's log analyzer for adding new synonyms. *Id.* Petitioners assert an ordinarily skilled artisan would have appreciated that the combination would be more user friendly, benefiting users unaware of the predetermined keywords and allowing greater flexibility. *Id.* at 66.

Patent Owner does not dispute Petitioners' assertions. Based on the complete record and for the reasons explained by Petitioners, we are persuaded that Petitioners have met their burden of showing that (1) the combination of Fratkina and Rajaraman teaches or suggests the limitations of claims 3–6 and (2) an ordinarily skilled artisan would have a reason to combine the teachings of Fratkina and Rajaraman as proposed by

Petitioners. Accordingly, we determine that Petitioners have demonstrated by a preponderance of the evidence that claims 3–6 are unpatentable under 35 U.S.C. § 103(a) as obvious over Fratkina and Rajaraman.

III.   CONCLUSION[8]

For the foregoing reasons, we conclude that Petitioners have demonstrated, by a preponderance of the evidence, that claims 1–7 of the '379 patent are unpatentable. The chart below summarizes our conclusions.

Claims	35 U.S.C. §	References/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1, 2, 7	103(a)	Wesemann	1, 2, 7	
3–6	103(a)	Wesemann, Rajaraman	3–6	
1, 2, 7	103(a)	Fratkina	1, 2, 7	
3–6	103(a)	Fratkina, Rajaraman	3–6	
Overall Outcome			1–7	

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[8] 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).

IV.   ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–7 of the '379 patent are determined to be unpatentable; and

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

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