

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

VEVEO, INC.,
Patent Owner.

Case IPR2017-00932
Patent 8,122,034 B2

Before LYNNE E. PETTIGREW, MINN CHUNG, and
KEVIN C. TROCK, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

I. BACKGROUND

A. Introduction

Comcast Cable Communications, LLC (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–30 (the “challenged claims”) of U.S. Patent No. 8,122,034 B2 (Ex. 1001, “the ’034 patent”). Veveo, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”). We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a).

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and the Preliminary Response, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of any of the challenged claims on the ground set forth in the Petition. Accordingly, we deny Petitioner’s request to institute an *inter partes* review of claims 1–30 of the ’034 patent.

B. Related Proceedings

The parties indicate that the ’034 patent is the subject of the following proceedings: *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09278 (S.D.N.Y.) (transferred from E.D. Tex., No. 2:16-cv-00321); *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y.). Pet. 2–3; Paper 5, 2. The

'034 patent is also the subject of a co-pending petition for *inter partes* review filed by Petitioner in IPR2017-00933.

II. THE '034 PATENT

A. Background

The '034 patent is directed to searching techniques to find content, channels, or other items on television. Ex. 1001, 1:24–26. As background, the '034 patent describes that, although early television systems had relatively simple user interfaces for finding television content, conventional user interfaces using remote control devices have become inadequate to find channels and content of interest quickly and easily due to significant proliferation of content choices and options. *Id.* at 1:27–43. Because of text input limitations for television-based search, according to the '034 patent, it is desirable to reduce text entry and obtain the intended search result without having to enter the full search text. *Id.* at 2:17–22.

B. Described Invention

The '034 patent is titled, “Method and System for Incremental Search with Reduced Text Entry Where the Relevance of Results Is a Dynamically Computed Function of User Input Search String Character Count.” *Id.* at [54]. The '034 patent describes a method and system for performing incremental searches with text entry reduced to prefix substrings, i.e., the first few characters, of a search query, such that the relevance ordering of results is computed as a function of the number of characters entered by a user in the input query. *Id.* at 2:39–45.

The '034 patent describes that in a pre-processing phase the descriptions of content items are broken into terms, which are grouped into various subspaces of interest. *Id.* at 6:46–7:25. Figure 6A of the '034 patent is reproduced below.

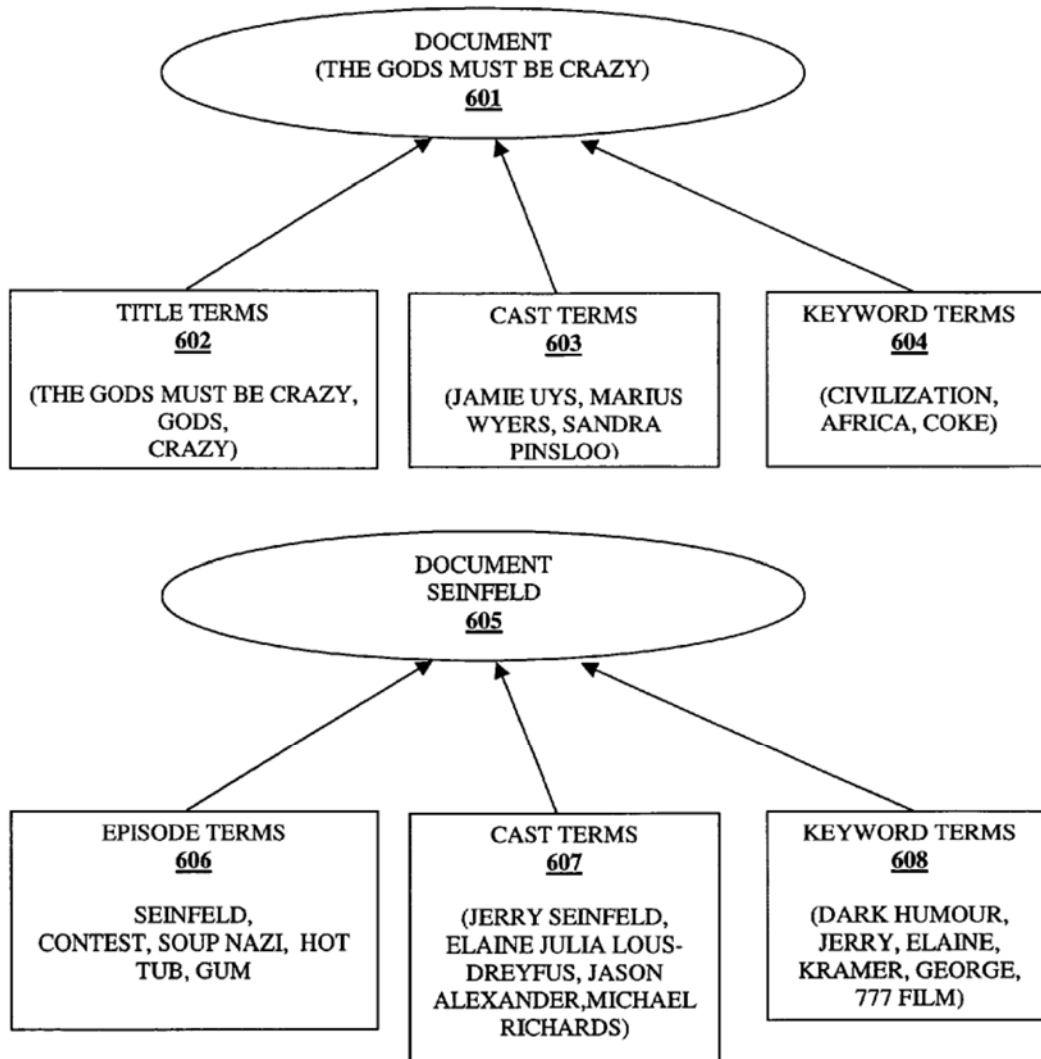


FIG. 6A

Figure 6A illustrates different types of terms or their combinations that may be used to find content items, such as a movie or a TV series. *Id.* at 3:65–67. Figure 6A shows searchable document 601, i.e., a movie titled “The Gods Must be Crazy,” associated with terms that can be used to find the

document. *Id.* at 7:42–44. The search terms are organized into subspace categories, such as title terms 602, cast terms 603, and keyword terms 604. *Id.* at 7:44–45.

According to the '034 patent, each content item is assigned a popularity value, and each term identifying the item is given a relevance value based on the information content of the term. *Id.* at 6:66–7:3. The instant relevance of any given document to a query string depends on the absolute popularity of that document and the relative relevance contributions of the associated terms matched by the search query. *Id.* at 7:3–7. In addition, each subspace is given a bias value, which causes certain subspaces of terms to have a higher relevance than other subspaces. *Id.* at 7:34–37. The subspace bias value is a function of the number of characters entered. *Id.* at 7:35–36.

Figure 7 of the '034 patent is reproduced below.

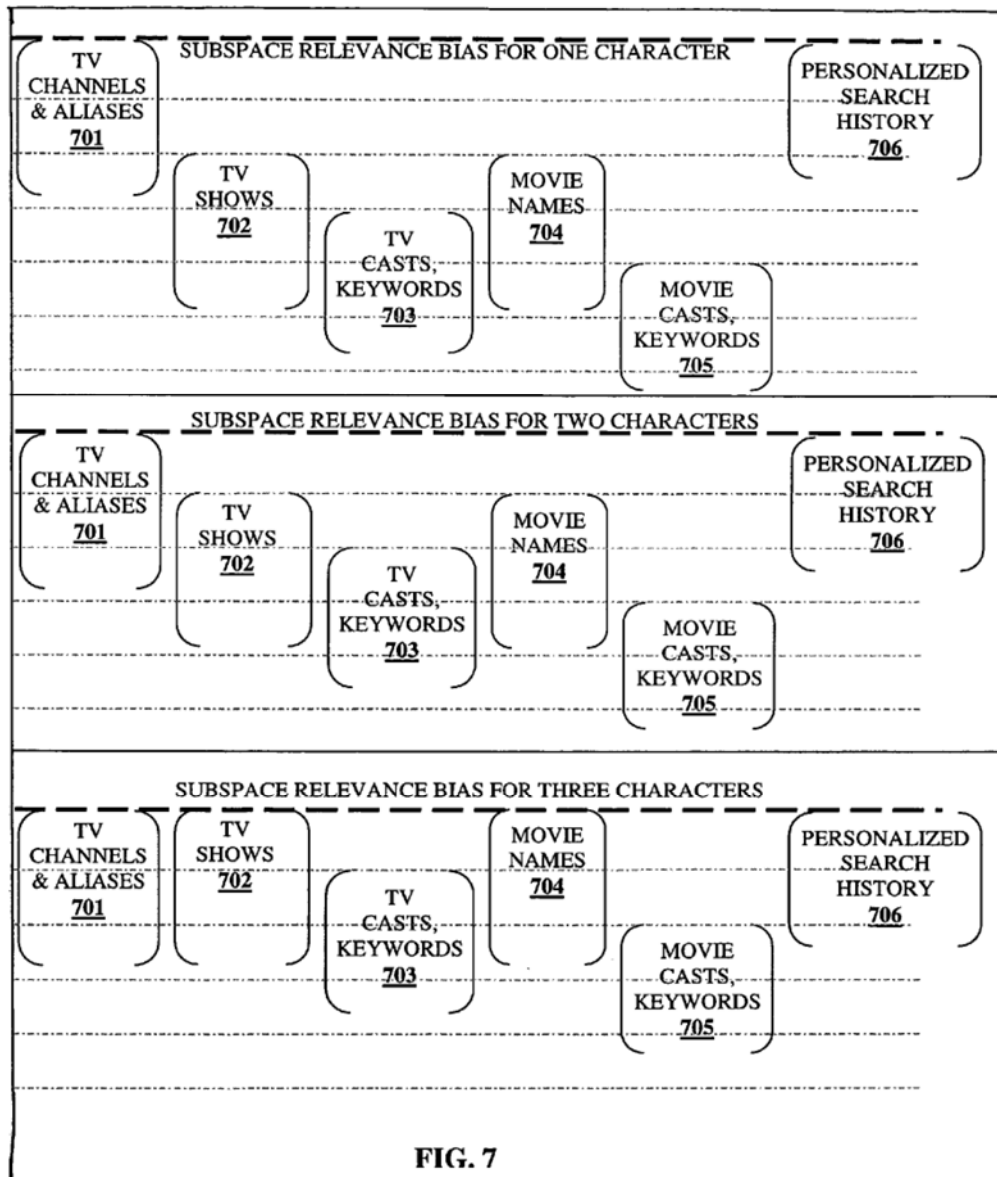


Figure 7 illustrates selective biasing of different subspaces 701 to 705 as a function of the number of characters entered. *Id.* at 7:63–65. As shown in Figure 7, the TV Channels & Aliases subspace 701 is given a relevance boost for the first character so that channels appear first in the search result when only one character is entered. *Id.* at 7:37–41. As illustrated in Figure 7, the subspace bias value for TV Shows subspace 702 increases as more

characters are entered, such that the TV Shows subspace can supersede low popularity channels, or even all channels, depending on how the bias values are set. *Id.* at 8:22–26.

During a search, each time a user enters a search string character, the system dynamically retrieves the search results for the cumulative substring that have been entered and orders the retrieved results based on the popularity of the retrieved items and the relevance of the terms matching the substring, as adjusted by subspace relevance biasing. *Id.* at 6:6–15, 7:3–7, 9:26–34. As discussed above, subspace relevance biasing depends on the number of characters that have been entered. The ordered results are displayed in a result window, as illustrated in Figure 8A (not reproduced herein). *Id.* at 9:26–34. According to the '034 patent, the key role of subspace relevance biasing is to facilitate obtaining the desired search results on the visible results list with the entry of a small number of characters, such as the first 3 to 4 characters. *Id.* at 8:6–9.

C. Illustrative Claim

Of the challenged claims, claims 1 and 16 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below.

1. A method of processing a search request received from a user operating a hand-held text input device, the search request directed at identifying a desired item from a set of items, each of the items having one or more associated terms, the method comprising:

providing the set of items, the items having assigned popularity values to indicate a relative measure of a likelihood that the item is desired by the user;

for each item, associating a set of terms to describe the item and assigning a relevance value for each term based on a relevance of the term in identifying the item, the terms associated with the items being organized into searchable subspace categories, each subspace category having a relevance bias value;

receiving text on the hand-held text input device entered by the user, the text having one or more text characters of one or more prefixes for terms the user is using to identify a desired item;

in response to receiving a text character, performing a first incremental find to compare the one or more user-entered prefixes with the terms associated with the items and to retrieve the relevance values for the one or more user-entered prefixes matching terms associated with the items;

determining a first ranking order of items found in the first incremental find based at least in part on the retrieved relevance values and the assigned popularity values of the items found in the first incremental find;

ordering and presenting one or more items to the user found in the first incremental find based on the first ranking order;

in response to receiving at least one subsequent text character, performing a second incremental find to compare the one or more user-entered prefixes, including the at least one subsequent text character and any preceding text characters, with the terms associated with the items and to retrieve the relevance values for said one or more user-entered prefixes matching terms associated with the items;

determining a count of the number of characters of text received from the user;

adjusting the relevance value assigned to at least one of the terms associated with one or more of the items retrieved in response to the one or more user-entered prefixes, wherein the adjusting of the relevance value is based on the count of the number of text characters received from the user;

determining a second ranking order of the items found in the second incremental find based at least in part on the adjusted relevance values and the assigned popularity values of the items found in the second incremental find; and

ordering and presenting one or more items to the user based on the second ranking order so that the relative order of the items found in both the first and second incremental finds is adjusted as characters are entered;

wherein at least one of determining the first ranking order and determining the second ranking order is further based on the relevance bias values of the subspace categories.

Ex. 1001, 10:33–11:25.

III. PETITIONER’S CHALLENGES

A. Prior Art Cited in Petitioner’s Challenge

Petitioner cites the following references in its challenge to patentability.

References and Relevant Dates	Designation	Exhibit No.
U.S. Patent No. 7,885,963 B2 (published Sept. 30, 2004; issued Feb. 8, 2011)	Sanders	Ex. 1002
U.S. Patent No. 7,039,635 B1 (filed Aug. 22, 2002; issued May 2, 2006)	Morgan ¹	Ex. 1003
U.S. Patent No. 6,718,324 B2 (issued Apr. 6, 2004)	Edlund	Ex. 1004

B. Asserted Ground of Unpatentability

Petitioner asserts the following ground of unpatentability (Pet. 9):

Claims Challenged	Statutory Basis	References
1–30	§ 103(a)	Sanders, Morgan, and Edlund

IV. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard as the claim construction

¹ For clarity and ease of reference, we only list the first named inventor.

standard to be applied in an *inter partes* review proceeding). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in view of the specification. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner and Patent Owner address the claim terms “subspace category” and “relevance bias value.” Pet. 11–12; Prelim. Resp. 11–16. Petitioner also discusses the claim terms “item,” “the text having one or more text characters of one or more prefixes for terms the user is using to identify a desired item,” and “the count of the number of text characters.” Pet. 9–11. In addition, Petitioner has submitted the Claim Construction Opinion and Order (Ex. 1014) from the related district court litigation.

For the purposes of this decision, we need not construe explicitly any claim terms to determine whether there is a reasonable likelihood of Petitioner prevailing with respect to the challenged claims. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (explaining that “claim terms need only be construed ‘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))).

V. ANALYSIS OF PETITIONER’S PRIOR ART CHALLENGES

A. *Obviousness over Sanders, Morgan, and Edlund*

Petitioner contends claims 1–30 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Sanders, Morgan, and Edlund.

Pet. 19–61. Petitioner submits a Declaration of Dr. Edward A. Fox (Ex. 1006) in support of its contentions. We have reviewed the parties’ contentions and supporting evidence. Given the evidence of record, we are not persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted ground as to any of these challenged claims for the reasons explained below.

1. Overview of Sanders (Ex. 1002)

Sanders discloses a search engine for electronic program guide (EPG) data. Ex. 1002, Abstract. As background, Sanders describes that, in a digital television system, users typically search for program viewing information in an EPG, which is a data set of available program and schedule information. *Id.* at 1:19–24. Users may search for programs by performing a text search of program titles with keyword terms. *Id.* at 1:24–26. Television programs can also be found by searching for program attributes, such as a “category” or other characteristics of the programs. For example, a user may wish to search for “westerns” under the “category” attribute to find programs in the westerns genre. *Id.* at 1:28–43. Users may also search for other characteristics, such as “black & white,” “DOLBY® DIGITAL,” or “rated PG,” to find programs with desired attributes. *Id.* at 1:44–58.

According to Sanders, in conventional search methods, these two different types of searches, i.e., the program title search and the attribute search, are provided in separate parts of the user interface (UI), or in a separate UI altogether, on the television set. *Id.* at 1:59–64. The results

from the searches, or “hits,” are combined at the end of both searches to produce a hit list. *Id.* at 1:64–67.

The search method of Sanders does away with this complex user interface and allows users to simply enter a search string to find desired programs on television. *Id.* at 2:64–3:12. Sanders’s search engine interprets a “single text string input” from the user to infer the user’s likely intent, and provides search results that match the interpretation of the search string. *Id.* at 3:2–9.

Figure 2 of Sanders is reproduced below.

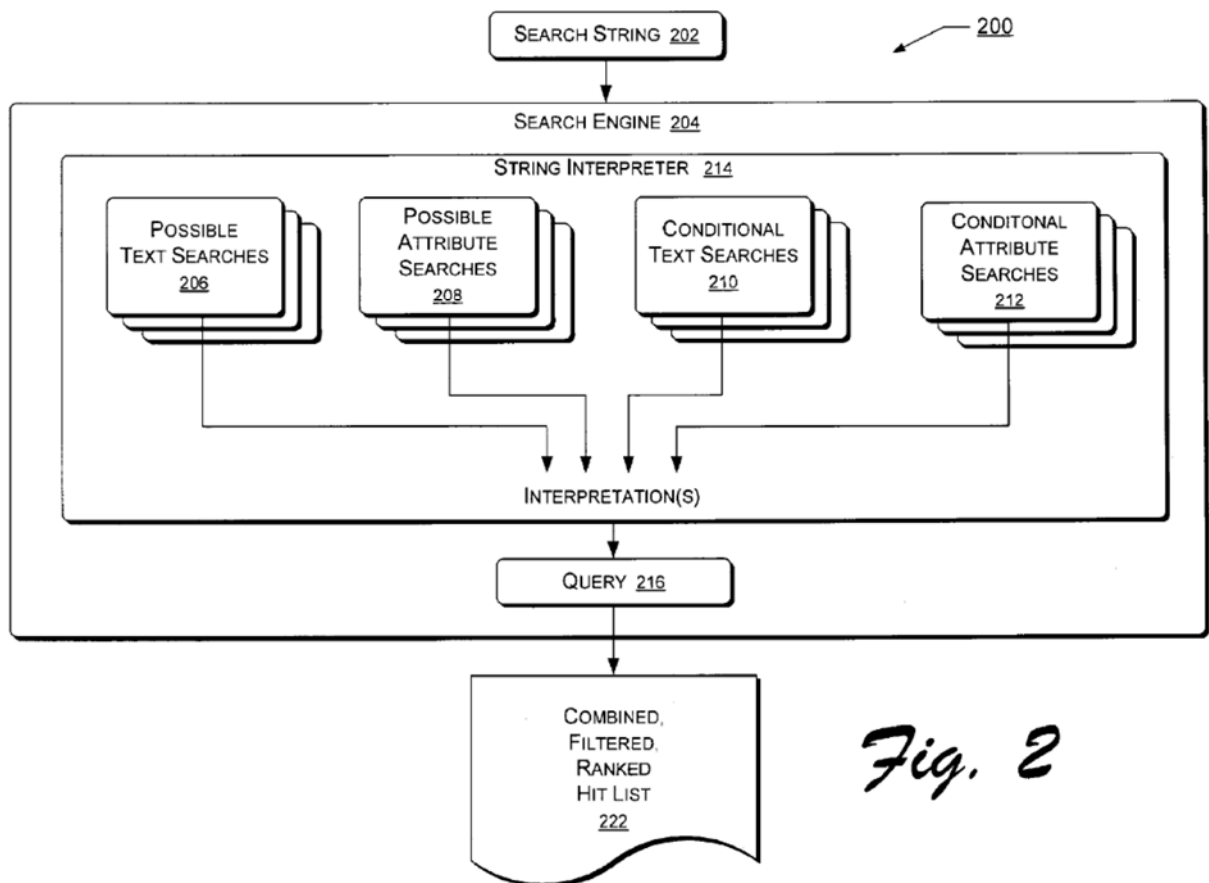


Figure 2 shows an overview of an exemplary search 200 of EPG databases according to Sanders. *Id.* at 3:13–14. As depicted in Figure 2, the search

begins with search string 202 entered by a user. *Id.* at 3:14–16. Search engine 204 receives search string 202 and performs transformations on the terms of the search string to generate possible query instructions. *Id.* at 3:16–19.

As illustrated in Figure 2, string interpreter 214 analyzes the terms contained in input search string 202 to identify possible attribute search terms and text search terms (i.e., program title search terms). *Id.* at 3:25–33. String interpreter 214 then “considers” series of text searches 206, attribute searches 208, conditional text searches 210, and conditional attribute searches 212 to infer the likely meaning of the search string. *Id.* at 3:33–36, 54–56. In an exemplary embodiment, a “brute force determination” of the likely meaning of search string 202 is accomplished by performing a preliminary search of each term in the search string in an EPG database or in an online dictionary, and ranking the search results. *Id.* at 3:38–42. For example, the result more common in the database or dictionary may be considered as the likely interpretation of the search string. *Id.* at 3:42–45. Using these and other techniques, string interpreter 214 arrives at one or more interpretations of search string 202 and construct query 216. *Id.* at 3:54–55. Query 216 is then used perform one or more searches, producing a combined, filtered, and ranked hit list 222, which is displayed for the user. *Id.* at 3:55–58.

2. Overview of Edlund (Ex. 1004)

Edlund discloses a system and method for ranking and sorting search results from a search engine. Ex. 1004, Abstract. According to Edlund, traditional search engines, such as the Internet search engines, simply sort

the search results based on the “hits” or “hit count” of the results, and do not associate the search results (or their sorting order) with the specific search query string. *Id.* at 2:38–52. Edlund describes sorting the results returned from the search engines by ranking the results based on a combination of relevancy and popularity of the returned documents in relation to the query string. *Id.* at 3:43–4:23.

For example, the content relevance is computed by matching the query search terms to words in a returned document. *Id.* at 3:46–47. Edlund also monitors and stores the user queries and search results, and calculates the popularity of a returned document based on whether the same document was located by similar searches in the past. *Id.* at 3:54–4:17. The results from the search engine are sorted by popularity first, then by relevance, of the returned documents, and returned to the user. *Id.* at 4:17–23.

3. Discussion

a. Independent Claims 1 and 16

Petitioner contends that the combination of Sanders, Morgan, and Edlund teaches or renders obvious all limitations of independent claims 1 and 16. Pet. 19–36, 48–59. Patent Owner disagrees and argues that Petitioner’s analysis is deficient in several aspects. Prelim. Resp. 17–34. Because of the similarity between the limitations recited in claims 1 and 16, in what follows we discuss claim 1 first, and then address claim 16 to the extent any meaningful differences exist between the claims or in the parties’ arguments regarding the claims. For both claims, our analysis focuses on the limitations relating to the “relevance value for . . . term(s)” recited in the claims.

Petitioner contends that Sanders teaches the limitation reciting “assigning a relevance value for each term based on a relevance of the term in identifying the item.” Pet. 21. In support of its contention, Petitioner cites column 2, lines 31–34 and column 8, lines 59–63 of Sanders. *Id.*

The cited portions of Sanders, however, do not teach assigning a relevance value to a term. Column 2, lines 31–34 of Sanders states “[o]ne or more searches in EPG databases and/or EPG web-resources are performed for each text and each attribute term and *results are given a relevancy ranking* according to the interpretation of the search string.” Ex. 1002, 3:31–34 (emphasis added). Hence, the cited passage discloses assigning relevancy ranking to search *results*, but says nothing about “assigning a relevance value for each *term* based on a relevance of the term in identifying the item,” as recited in claim 1. Petitioner does not identify, nor do we discern, anything in the cited passage that teaches assigning a relevance value to a term based on a relevance of the term in identifying an item.

Petitioner also does not explain how column 8, lines 59–63 of Sanders teaches assigning a relevance value to a term. Although Petitioner indicates in a parenthetical that the cited passage shows an “example of term associated with title and channel” (Pet. 21 (citing Ex. 1002, 8:59–63)), Petitioner does not explain how the cited passage teaches *assigning* a relevance *value* to a term. Column 8, lines 59–63 of Sanders states

If the user constructs the search string “Discovery”, the exemplary search engine 204 might return a hit list 222 both of shows with “discovery” in the title and of channels with “discovery” in the name of the channel, e.g., the “DISCOVERY CHANNEL®”.

Ex. 1002, 8:59–63. Hence, the cited passage describes merely that the search engine may return search results containing the term used for the search. Petitioner does not identify, nor do we discern, anything in the cited passage that teaches a relevance *value* of a term or *assigning* a relevance *value* to a term.

Citing the Declaration of Dr. Fox, Petitioner further contends that a person of ordinary skill in the art would understand “indexing database contents” mentioned in Sanders would “involve[] computing and storing in an index relevance values for terms associated with an item in the database.” Pet. 21 (citing Ex. 1006 ¶ 116). Petitioner’s argument is unpersuasive because neither Petitioner nor Dr. Fox explains how indexing database contents teaches assigning relevance values to terms in identifying an item in the database.

Petitioner contends that, even if Sanders does not teach assigning relevance values to terms, Edlund does. Pet. 21–22. Petitioner relies on Sanders *only*, however, to teach the limitation reciting “in response to receiving a text character, performing a first incremental find to compare the one or more user-entered prefixes with the terms associated with the items and to *retrieve the relevance values for* the one or more user-entered prefixes matching *terms* associated with the items.” *Id.* at 24 (citing Ex. 1002, 2:31–38, 3:67–4:2). Similar to the discussion above, the cited portions of Sanders disclose ranking search results, and do not describe “retriev[ing] the relevance values” of terms as recited in the claim. Nonetheless, relying upon the testimony of Dr. Fox, Petitioner argues that “Sanders must first retrieve the relevance values associated with a query

term in order for Sanders to rank, filter and group search results.” *Id.* (citing Ex. 1006 ¶ 124).

Patent Owner argues that Petitioner’s showing is insufficient because Petitioner’s argument and Dr. Fox’s opinion are unsupported. Prelim. Resp. 30–31. Patent Owner further argues that Petitioner has not identified any express or implicit disclosure in Sanders of retrieving a relevance value assigned to a term and that Petitioner’s sole reliance on conclusory expert testimony is insufficient to meet Petitioner’s burden. *Id.* at 31–32. We agree with Patent Owner’s argument.

Petitioner has not identified, nor do we discern, anything in the cited portions of Sanders that teaches or suggests retrieving a relevance value assigned to a term. Further, Petitioner does not explain why “Sanders must first retrieve the relevance values associated with a query term in order for Sanders to rank, filter and group search results.” Pet. 24 (citing Ex. 1006 ¶ 124). Petitioner’s citation to Dr. Fox’s testimony is unpersuasive because Dr. Fox essentially repeats Petitioner’s argument without providing any explanation or supporting evidence. *See* Ex. 1006 ¶ 124. Thus, we agree with Patent Owner that Petitioner’s argument and Dr. Fox’s testimony are conclusory and do not include a reasoned analysis and evidentiary support sufficient to establish obviousness. *See In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Petitioner’s argument and evidence is similarly insufficient to show Sanders teaches “determining a first ranking order of items found in the first incremental find based at least in part on the retrieved relevance values,” as recited in claim 1. *See* Pet. 25 (citing Ex. 1002, 11:48–62, 3:38–45, 56–58;

Ex. 1006 ¶¶ 125, 126). Similar to our discussion above, the cited portions of Sanders do not disclose ranking items based on “the retrieved relevance values” of *terms*. Petitioner does not identify, nor do we discern, anything in the cited portions of Sanders that teaches or suggests ranking based on “the retrieved relevance values” of terms recited in the claim. Dr. Fox’s testimony relied upon by Petitioner also does not discuss ranking items based on “the retrieved relevance values” of *terms*. See Ex. 1006 ¶ 125 (“A [person of ordinary skill in the art] would understand that in order for Sanders to rank search results by relevancy, Sanders must first retrieve and utilize the relevance value for each *item* for each matching text term.” (emphasis added)).

Further, similar to the previously discussed limitation, Petitioner does not contend Edlund teaches ranking items based on the “retrieved relevance values” of terms. Rather, Petitioner appears to rely upon Edlund only for its teaching of ranking results based on *popularity* values of content *items*. Pet. 25–26. To the extent Petitioner intended to argue Edlund teaches ranking items based on the “retrieved relevance values” as claimed, Petitioner’s argument is unpersuasive because the cited portions of Edlund describe ranking search results based on relevance of content items, not *terms*. See *id.* (citing Ex. 1004, Abstract, 3:51–53, 6:10–12, 6:65–7:1). Petitioner does not identify, nor do we discern, anything in the cited portions of Edlund that teaches ranking items based on “the retrieved relevance values” of *terms*, as recited in the claim.

Petitioner does not rely on Morgan to teach any of the limitations discussed above. Therefore, Petitioner does not show sufficiently the

combination of Sanders, Morgan, and Edlund teaches or renders obvious all limitations of claim 1.

As acknowledged by Petitioner, independent claim 16 is an apparatus claim reciting limitations similar to claim 1. *See* Pet. 48. Indeed, similar to claim 1, claim 16 recites “retrieving the relevance values for . . . terms” and “the first ranking order of the one or more items . . . being based on the retrieved relevance values for . . . terms.” Ex. 1001, 12:32–55.

With respect to the limitation of claim 16 reciting “retrieving the relevance values for . . . terms,” Petitioner refers to and relies upon its arguments and evidence presented with respect to the corresponding limitation recited in claim 1. *See* Pet. 53–54 (citing Pet. 24 (§ VII(A)(5)); Ex. 1006 ¶¶ 125–126). Hence, Petitioner’s contentions fail for the same reasons discussed above with respect to claim 1.

With regard to the limitation of claim 16 reciting “the first ranking order of the one or more items . . . being based on the retrieved relevance values for . . . terms,” Petitioner relies on Edlund only, referencing Petitioner’s discussion of Edlund with respect to the corresponding limitation of claim 1. *Id.* at 55. Petitioner also cites the same portions of Edlund relied upon in its analysis of the corresponding limitation of claim 1. *Id.* at 55–56 (citing Ex. 1004, Abstract, 6:64–7:4, 2:66–3:1). As discussed above with respect to claim 1, the cited portions of Edlund describe ranking results by popularity or relevance of content *items*, not relevance of *terms*. Petitioner does not identify, nor do we discern, anything in the cited portions of Edlund that teaches ranking items based on “the retrieved relevance values for . . . terms,” as recited in claim 16.

Therefore, for the reasons similar to those discussed above with respect to claim 1, Petitioner does not show sufficiently that the combination of Sanders, Morgan, and Edlund teaches or renders obvious all limitations of claim 16.

Accordingly, based on the record presented, the information presented in the Petition does not demonstrate a reasonable likelihood of Petitioner prevailing in its challenge to independent claims 1 and 16 under 35 U.S.C. § 103(a) as obvious over the combination of Sanders, Morgan, and Edlund.

b. Dependent Claims 2–15 and 17–30

Claims 2–15 and 17–30 each depend directly or indirectly from claims 1 or 16. Petitioner’s arguments and evidence presented with respect to these dependent claims do not remedy the deficiencies in Petitioner’s analysis of claims 1 and 16 discussed above. *See* Pet. 36–48, 58–61. Therefore, Petitioner does not demonstrate a reasonable likelihood of prevailing in its challenge to dependent claims 2–15 and 17–30 under 35 U.S.C. § 103(a) as obvious over the combination of Sanders, Morgan, and Edlund.

VI. CONCLUSION

Based on the arguments and evidence presented in the Petition, we conclude Petitioner has not demonstrated a reasonable likelihood that Petitioner would prevail in showing at least one of the challenged claims of the ’034 patent is unpatentable based on the asserted ground of unpatentability. Therefore, we do not institute an *inter partes* review with respect to any of the challenged claims of the ’034 patent.

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* as to all challenged claims of the '034 patent, and no trial is instituted.

IPR2017-00932
Patent 8,122,034 B2

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