

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

VEVEO, INC.,
Patent Owner.

IPR2019-00290
Patent 7,937,394 B2

Before KALYAN K. DESHPANDE, SHEILA F. McSHANE, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

McSHANE, *Administrative Patent Judge*.

DECISION
Instituting *Inter Partes* Review
35 U.S.C. § 314(a)

I. INTRODUCTION

A. Background

Comcast Cable Communications, LLC, (“Petitioner”)¹ filed a Petition requesting *inter partes* review of claims 1–11 (“the challenged claims”) of U.S. Patent No. 7,937,394 B2 (Ex. 1021, “the ’394 patent”) pursuant to 35 U.S.C. §§ 311–319. Paper 2 (“Pet.”). Veveo, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 9 (“Prelim. Resp.”).

We have authority under 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.”

Taking into account Patent Owner’s Preliminary Response, and for the reasons that follow, we determine that Petitioner has demonstrated that there is a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. For the reasons set forth below, and pursuant to 35 U.S.C. § 314, we institute an *inter partes* review of claims 1–11 of the ’394 patent.

B. Related Proceedings

Petitioner indicates that the ’394 patent is asserted in *Veveo Inc. v. Comcast Corp.*, Case No. 1:18-cv-10056-GAO (D. Mass.), and Patent Owner indicates that other litigations have been filed. Pet. 2; Paper 4, 1. The parties indicate that the ’394 patent has been asserted against some of

¹ Petitioner states that there are other real parties-in-interest for this Petition. *See* Pet. 1.

the real parties-in-interest in *In the Matter of Certain Digital Video Receivers and Related Hardware and Software Components*, Investigation No. 337-TA-1103 (“the ITC proceeding”). *Id.* The parties indicate that three other requests for *inter partes* review, that is, Cases IPR2019-00291, IPR2019-00292, and IPR2019-00293, have been filed challenging claims of the ’394 patent. Pet. 2. Petitioner further indicates that U.S. Patent No. 7,779,011, a parent of the ’394 patent, is the subject of requests for *inter partes* review in Cases IPR2019-00237, IPR2019-00238, and IPR2019-00239. *Id.* at 2–3. Petitioner indicates that the ’394 patent is related to Patent No. 8,433,696, which was held unpatentable in IPR2017-00715 (“the -00715 proceeding”) and which is currently on appeal at the Federal Circuit. *Id.* at 3.

C. The ’394 Patent

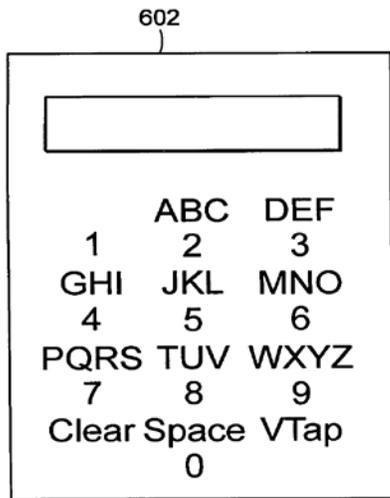
The ’394 patent is entitled “Method And System for Dynamically Processing Ambiguous, Reduced Text Search Queries and Highlighting Results Thereof” and issued on May 3, 2011 from an application filed on August 2, 2010. Ex. 1021, [22], [45], [54]. The ’394 patent claims priority to (1) U.S. Patent Application No. 11/312,908, filed on December 20, 2005—now U.S. Patent No. 7,779,011 (“the ’011 patent”); (2) U.S. Provisional Application No. 60/711,866 filed on August 26, 2005; and (3) U.S. Provisional Application No. 60/716,101 filed on September 12, 2005. *Id.* at [63], [60].

The ’394 patent is directed generally to a method of processing a search query entered by a user of a device having a text input interface with overloaded keys. Ex. 1021, Abst. More specifically, under one embodiment, the ’394 patent method is directed to dynamically identifying a

group of one or more items from the set of items having one or more words in the names matching said search query as the user enters each character of the search query. *Id.* at 3:38–41. In one embodiment, the mapping scheme of the method enables the incremental retrieval of results matching the ambiguous alphanumeric input query, as the user types in each character of the query. *Id.* at 3:59–62.

The '394 patent also discloses that “an ordering scheme is preferably used to order the results to improve accessibility to results expected to be more of interest to the user.” Ex. 1021, 5:42–44. If the user does not find the desired results, he or she can continue to enter more characters to the search query. *Id.* at 6:37–39. Then “the system will perform the search based on the cumulative substring of characters of the search query entered by the user up to that point.” *Id.* at 6:39–41.

For instance, as keystrokes are entered, the identified subsets of items are identified and displayed, as shown in Figures 6A and 6B reproduced below, with the respective figures illustrating a text input interface and a display interface. *See* Ex. 1021, 3:4–8, 7:9–11.



USER INPUT: 866

FIG. 6A

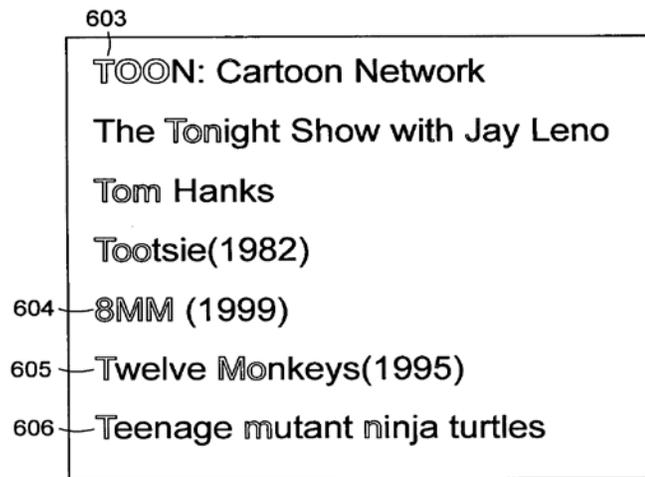


FIG. 6B

As illustrated in this example, in Figure 6A, the user has entered a single-word text input query “866” using the overloaded keypad interface 602 and the results of the search input are shown in Figure 6B. Ex. 1021, 7:9–14. Figure 6B shows single-word term matches 603 and 604 ordered before abbreviation matches 605 and 606. *Id.* at 7:14–17.

Claim 1, the only independent claim of the ’394 patent at issue in the Petition, is reproduced below, with annotations added to the step limitations for reference purposes.

1. A method of processing unresolved keystroke entries by a user from a keypad with overloaded keys in which a given key is in fixed association with a number and at least one alphabetic character, the unresolved keystroke entries being directed at identifying an item from a set of items, each of the items being associated with information describing the item comprising one or more words, the method comprising:

[a] providing access to an index of the items, the index having an association between subsets of the items and corresponding strings of

one or more unresolved keystrokes for overloaded keys so that the subsets of items are directly mapped to the corresponding strings of unresolved keystrokes for various search query prefix substrings;

[b] for at least one subset of items, determining which letters and numbers present in the information associated with and describing the indexed items of the subset caused the items to be associated with the strings of one or more unresolved keystrokes that directly mapped to the subset;

[c] receiving from a user a search query for desired items composed of unresolved keystrokes, the search query comprising a prefix substring for at least one word in information associated with the desired item;

[d] in response to each unresolved keystroke, identifying and displaying the subsets of items, and information associated therewith, that are associated with the strings of one or more unresolved keystrokes received from the user based on the direct mapping of strings of unresolved keystrokes to subsets of items; and

[e] in response to each unresolved keystroke, as the identified items are displayed, highlighting the letters and numbers present in the one or more words in the information describing the identified items that were determined to have caused the displayed items to be associated with the strings of unresolved keystrokes that are directly mapped to the items so as to illustrate to the user how the unresolved keystrokes entered match the information associated with the displayed items.

Ex. 1021, 8:44–9:16.

D. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Ground	Claim(s)	References
§ 103(a)	1, 2, 4, 5, 6, and 9–11	Howard, ² King, ³ and Payne ⁴
§ 103(a)	3	Howard, King, Payne, and Sanders ⁵
§ 103(a)	4	Howard, King, Payne, and Gross ⁶
§ 103(a)	7	Howard, King, Payne, and Weeren ⁷
§ 103(a)	8 and 9	Howard, King, Payne, and Roberts ⁸

Pet. 9.

II. ANALYSIS

A. § 325(d) and § 314(a) Issues

1. 35 U.S.C. § 325(d)

Patent Owner contends that institution should be denied under 35 U.S.C. § 325(d). Prelim. Resp. 47–53 (citing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, slip op. at 17–18 (PTAB Dec. 15, 2017) (Paper 8) (“*Becton*”) (informative)).

² U.S. Patent Publication No. 2007/0027848 A1 (published February 1, 2007) (Ex. 1007).

³ U.S. Patent No. 6,011,554 (issued January 4, 2000) (Ex. 1008).

⁴ U.S. Patent No. 6,370,518 B1 (issued April 9, 2002) (Ex. 1009).

⁵ U.S. Patent No. 7,885,963 B2 (issued February 8, 2011) (Ex. 1010).

⁶ U.S. Patent Publication No. 2004/0133564 A1 (published July 8, 2004) (Ex. 1011).

⁷ U.S. Patent No. 6,501,956 B1 (issued December 31, 2002) (Ex. 1025).

⁸ U.S. Patent Publication No. 2005/0278741 A1 (published December 15, 2005) (Ex. 1026).

Patent Owner asserts that the '394 patent is the direct continuation of the '011 patent, shares a common specification, and the '394 patent references the '011 patent. Prelim. Resp. 19. Patent Owner argues that, when considering the '011 patent prosecution history, *Becton's* first, second, third, and fourth factors weigh in favor of denying the Petition because Howard, King,⁹ and Payne are cumulative to prior art (Verbeck, Ortega, and Belfiore, respectively) asserted during prosecution of the '011 patent, and are relied upon in the same way in the Petition.¹⁰ *Id.* at 49–51. Patent Owner argues that with regard to the fifth factor of *Becton*, Petitioner fails to explain “how the Office erred in evaluating the asserted prior art.” *Id.* at 48, 51. For the sixth *Becton* factor, Patent Owner contends that the additional facts or arguments raised by Petitioner do not warrant reconsideration because they are ancillary to the central problem with the art identified during prosecution. *Id.* at 52–53.

Our institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“the PTO is permitted, but never compelled, to institute an IPR proceeding”). Section

⁹ Patent Owner further notes that King appears on the face of the '394 patent. Pet. 49, n.12.

¹⁰ Patent Owner additionally argues that a substantially identical Howard publication to the Howard reference asserted in the Petition is cited on the face of the '394 patent. Prelim. Resp. 48, n.11. Although a Howard reference is cited on the face of the '394 patent and is related to the Howard reference asserted here (*id.*), there is no evidence in the record indicating that the Examiner relied on or fully considered the Howard reference listed on the '394 patent. Patent Owner does not argue that we should exercise our discretion and deny the Petition because the Howard relied on in the Petition is cumulative or is substantially the same as the Howard reference cited on the face of the '394 patent. *Id.*

325(d) states that “[i]n determining whether to institute . . . the Director may take into account whether . . . the same or substantially the same prior art or arguments previously were presented to the Office.” In evaluating whether to exercise our discretion under Section 325(d), we consider the *Becton* non-exclusive factors. *See Becton*, slip op. at 17–18. In view of the record in this case, we determine that the factors weigh against exercising our discretion under § 325(d) to deny institution of *inter partes* review.

With respect to the first *Becton* factor, although Patent Owner alleges that Howard, King, and Payne are cumulative to the main prior art (Verbeck, Ortega, and Belfiore) considered during the prosecution of the ’011 patent, Patent Owner does not provide sufficient evidence and arguments explaining why Howard, King, and Payne are cumulative to Verbeck, Ortega, and Belfiore, respectively. *See Prelim. Resp.* 49–50. We find that Patent Owner’s comparison of the prior art is conclusory with little explanation of the similarities and material differences between the prior art. *See id.* The record also contains no details on the relative similarities (or differences) in how the art is combined. *See id.*

With respect to the remaining *Becton* factors, we determine that the Petition presents new prior art to that previously before the Patent Office and presents a new combination of the new prior art. Although there are some general similarities in the prior art that was before the Patent Office and that asserted here, the record does not indicate that there are significant similarities in the details of how the individual prior art is applied or in the combinations of the respective prior art. Thus, we do not find that this proceeding involves “substantially the same” prior art or arguments

previously presented to the Examiner. 35 U.S.C. § 325(d). Accordingly, we decline to exercise our discretion to deny institution under § 325(d).

2. 35 U.S.C. § 314(a)

Patent Owner asserts that the Board should exercise its discretion under 35 U.S.C. § 314(a) and deny institution because: (1) Petitioner has attempted to gain a tactical advantage by delaying the Petition filing until after trial at the ITC; and (2) multiple petitions have been filed so this is a redundant proceeding. Prelim. Resp. 53–62. In Patent Owner’s view, *General Plastic Industrial Co. v. Canon Kabushiki Kaisha*, Case IPR2016-01357, slip op. at 9–10 (PTAB Sept. 6, 2017) (Paper 19) (precedential as to § II.B.4.i) (“Gen. Plas.”), weighs against the institution of the Petitions. *See id.* at 53, 56–57. Patent Owner, however, does not identify the specific *General Plastic* factors that weigh in favor of denying institution of *inter partes* review. *See id.* Instead, it appears that the ITC proceedings issue is being argued by Patent Owner based on an alleged abuse of process, which is a general consideration in *General Plastic*. *See id.* As to the issue raised on multiple petitions, Patent Owner references the Board’s Order (Paper 10), which refers to the Board’s ability to meet statutory factors and the speedy resolution of proceedings (factors 6 and 7), and we address those issues below. Our decision focuses on factors 6 and 7 because no other *General Plastic* factors are raised or argued by Patent Owner.

a. *Alleged Tactical Advantage*

On the first issue, Patent Owner argues that by delaying the filing of the Petition, Petitioner gained a tactical advantage and engaged in gamesmanship by having the advantage of the full record before the ITC. Prelim. Resp. 57–58. More specifically, Patent Owner contends that

Petitioner attempted to prove invalidity in the ITC by relying on several prior art references that are at issue in the Petitions filed, namely, Gross, Smith, King, and Payne. *Id.* at 57. Patent Owner also asserts that Petitioner attempts to “leverage statements by Rovi’s expert given in the context of the ITC action,” to advance “a claim construction position that it lost before the ITC,” and misconstrues the Board’s claim construction the Board’s claim construction of “directly mapped” in IPR2017-00715. *Id.* at 58–59. Patent Owner additionally argues that, although Petitioner was aware of evidence of objective indicia from the ITC proceeding before it filed the Petition, Petitioner did not address this evidence in the Petition, and “blinded its expert” from considering it. *Id.* at 62.

We are not persuaded by Patent Owner that Petitioner has gained a tactical advantage by having the full record before the ITC prior to filing this Petition because there is not substantial overlap between the ITC proceeding and this proceeding. There is no substantial overlap because (1) the prior art asserted in the ITC proceeding is different than that relied on in the grounds of unpatentability alleged in the Petition; and (2) the patent and claims that are the subject of the ITC proceeding are different than those challenged in the Petition. We have reviewed the Post-Hearing Reply Brief,¹¹ as well as the other ITC-related exhibits in the record (Ex. 2007, 2010, 2013), and find no arguments related to Howard, King,¹² or Payne therein. *See* Ex. 2008, 3–10. Moreover, Patent Owner’s Post Hearing Reply Brief indicates that

¹¹ Patent Owner refers to the Patent Owner’s Post-Hearing Reply Brief from the ITC proceeding. Prelim. Resp. 60 (citing Ex. 2008).

¹² The Post-Hearing Reply Brief states that the combination of Gross and King had been withdrawn as the basis of an obviousness challenge in the ITC proceeding. Ex. 2008, 3, n.1.

claims 1 and 9 of *the '011 patent*, not claims 1–11 of *the '394 patent*, were challenged over the combination of Gross and Smith in the ITC proceeding. *See id.*, 14–21. Patent Owner has not presented any evidence of overlap of Petitioner’s theories and arguments in the ITC on invalidity with respect to King and Payne to those here, or expert testimony on the application of those references. *See Prelim. Resp.* 56–59. Therefore, we determine that because there is not a substantial overlap between the ITC proceeding and the Petition, Petitioner did not have a tactical advantage by having the full record of the ITC proceeding before filing this Petition. Furthermore, we are the first and only tribunal considering the merits of all of Petitioner’s challenges. *See Trial Practice Guide* 10 (stating that “the merits” should be considered as part of a balanced assessment in whether to deny institution under § 314(a)). In considering those merits on the record before us, for the reasons expressed below, we find Petitioner’s proposed grounds to be sufficiently strong to weigh in favor of not denying institution based on §314(a).

Also, we find this proceeding distinguishable from *NHK Spring Co. v. Intri-Plex Technologies., Inc.*, Case IPR2018-00752 (PTAB Sept. 12, 2018) (Paper 8) (precedential) (“*NHK*”) for similar reasons to those discussed above. In *NHK*, the Board found that the “same prior art . . . and arguments” were being advanced in a parallel district court proceeding and that a decision was expected to issue in the short term. *Id.* at 19–20. For those reasons, the Board determined in *NHK* that institution of *inter partes* review would not “provide an effective and efficient alternative to district court litigation,” and that factor (“inefficient use of Board resources”) weighed in favor of exercising discretion to deny institution of *inter partes* review. *Id.*

at 20 (citing Gen. Plastic 16–17). The facts before us in this proceeding, however, are different. Here, we determine that there is not substantial overlap of the obviousness issues before us with those before the ITC because the asserted prior art in the ITC proceeding is substantially different from the prior art asserted in the Petition. Furthermore, as noted above, the ITC proceeding concerned a different patent and different claims—not the ’394 patent and claims at issue in the instant Petition. As such, we determine that the facts before us are distinguished from those in *NHK*.

Accordingly, based on the record before us, we have weighed all of the factors for exercising our discretion to deny institution of *inter partes* review and we are not persuaded we should deny institution under § 314(a) on the basis of the ITC proceeding.

b. Cumulative Petitions

Petitioner filed seven petitions in two sets: (1) four petitions requesting *inter partes* review of the same claims of the ’394 patent, including the instant petition, and (2) three petitions requesting *inter partes* review of the same claims of the related ’011 patent. *See* Paper 10, 2. Patent Owner argues that the references and combinations asserted across Petitioner’s four petitions challenging the same claims of the ’394 patent are cumulative to each other. Prelim. Resp. 54. Patent Owner contends that Petitioner does not explain why the prior art references are not redundant or that there are any material distinctions among the petitions. *Id.* at 54–56.

We ordered Petitioner to provide a notice ranking for the four petitions in the ’394 proceedings in the order in which Petitioner wished the Board to consider the merits of the petition—if the Board used its discretion

to institute any of the petitions—and to provide explanations of the differences in the respective petitions. Paper 10, 4 (“Order”).

In the proffered ranking, Petitioner requested that we consider the instant Petition first and the Petition in IPR2019-00292 second. Paper 11, 1 (“Notice”). Petitioner identified a distinction between these two respective petitions: that the primary reference in the instant Petition, Howard, could potentially be antedated, but the prior art asserted in IPR2019-00292 could not be antedated. *Id.* at 5. Patent Owner filed a Response to Petitioner’s Notice Ranking Petitions, and did not present arguments relating to the relative strength of the petitions and also did not assert that it would not attempt to antedate the Howard reference. Paper 12 (“Response to Notice”).

Here, we agree with Patent Owner that when a patent is challenged by multiple petitions at the same time, as is the case for the collective group of petitions filed against the ’394 patent, this may place an unfair burden on the Patent Owner and can undermine the Office’s ability to complete proceedings in a timely manner. *See* Trial Practice Guide Update at 10; *cf. Gen. Plastic*, at 16 (requiring the Board to consider ability to meet statutory deadlines as an institution factor); 37 C.F.R. § 42.1(b) (“[The rules] shall be construed to secure the just, speedy, and inexpensive resolution of every proceeding.”); *see also* Prelim. Resp. 53–56; Notice; Response to Notice. Consistent with this, and for the reasons set forth in another decision issued concurrently with this decision, we deny institution of *inter partes* review in IPR2019-00291 and IPR2019-00293 which challenge the ’394 patent.

We have determined to institute *inter partes* review of two Petitions: (1) the IPR2019-00290 Petition, ranked first by the Petitioner, and (2) IPR2019-00292, ranked second by the Petitioner. Notice 1. We have done

so in view of the specific circumstance of the cases. Petitioner identifies that in IPR2019-00290 Patent Owner may present arguments to antedate a prior art reference relied on in the ground of unpatentability presented. Notice 3. Patent Owner has not indicated whether it will present arguments and evidence to antedate that prior art reference. *See* Response to Notice. Patent Owner does, however, argue that Petitioner “was not required to rely on art that Veveo can antedate,” and Petitioner’s ranking is a “transparent attempt to steer the Board towards instituting on more than one Petition.” Response to Notice, 4. We are not persuaded by Patent Owner’s argument because Petitioner clearly identifies the differences between the prior art references relied on in each Petition (Notice, 1–5), and we see no evidence that Petitioner attempts to “steer the Board towards instituting on more than one Petition.” Petitioner further identifies that the Petitions present different arguments and evidence, including different claim construction arguments as applied to the prior art, towards the “determining” step of claim 1. Notice, 1–5. We are persuaded that the potential to antedate a reference relied on in a Petition and claim construction arguments resulting in different manner of application of the prior art are material differences between the submitted Petitions, and these differences warrant institution of *inter partes* review of a second petition. In our view, institution of IPR2019-00290 and IPR2019-00292 sufficiently addresses all of the material issues identified by Petitioner in the Notice. Accordingly, in addition to instituting *inter partes* review for this case, we have determined to institute *inter partes* review of a second petition – IPR2019-00292, which was ranked second by Petitioner (for which we issue a separate decision).

For the reasons explained below, we conclude that Petitioner establishes a reasonable likelihood that it would prevail in demonstrating claims 1–11 of the '394 patent are unpatentable. In view of the denial of other petitions in the collective group of petitions filed against the '394 patent, we find the circumstances do not warrant denying institution in this proceeding as well. Accordingly, we decline to exercise our discretion to deny institution under 35 U.S.C. § 314(a).

B. Claim Construction

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b).¹³ Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as they would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

“directly mapped”

Petitioner proposes that the term “directly mapped” be construed as “each alphanumeric character of a search query prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad” under the broadest reasonable interpretation of the term. Pet. 11 (citing Ex. 1014 ¶¶ 79–89). Petitioner contends that its proposed

¹³ The amendment to this rule does not apply here because the Petition was filed on November 12, 2018, which is prior to the November 13, 2018 effective amendment date. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,343–44 (Oct. 11, 2018).

construction parallels that adopted by the Board for a related patent in the -00715 proceeding for the term “direct mapping.” *Id.* (citing Ex. 1006, 7–9).

Patent Owner argues that Petitioner’s proposed construction of the term “directly mapped” does not resemble the construction previously adopted by the Board, and instead is an attempt to revive Petitioner’s failed proposal for the term advanced in the ITC proceeding. Prelim. Resp. 23–24. In support, Patent Owner presents Petitioner’s proposed positions on claim construction, reproduced below, as well as the construction adopted in the ITC proceeding and the -00715 proceeding.¹⁴ *Id.* at 24.

“directly mapped”			
<i>Comcast’s Construction in Petition</i>	<i>Comcast’s Construction before ITC</i>	<i>ITC’s Construction (Ex.1018)</i>	<i>Board’s Prior Construction of ’696 Patent</i>
“each alphanumeric character of a search query prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad.”	“each alphanumeric character of a search query prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad.”	“each alphanumeric character of a prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad.”	“matching each alphanumeric character of a descriptor identifying a content item with its corresponding numeric key equivalent on an overloaded keypad”

¹⁴ Patent Owner disputes Petitioner’s characterization that the ’696 patent in the -00715 proceeding is related to the ’394 patent because the patents only claim priority to a common provisional application, but do not share a specification. Prelim. Resp. 24, n.7.

Patent Owner argues that the ITC rejected Petitioner's proposed construction, which would have added that the prefix substring being matched is part of "search query," because the claim language and specification require mapping before a search query occurs. Prelim. Resp. 25 (citing Ex. 1017, 24–25). Patent Owner argues the plain and ordinary meaning of the term should be adopted, which is "abundantly clear based on the claim language." *Id.* at 26.

Patent Owner raises the issue as to whether the "receiv[ing] from the user" step has to be performed after both the "direct mapping" step and the "determining" step associated with the indexed items of limitations 1[a] and 1[b]. *See* Prelim. Resp. 25–26, 31–35. More specifically, Patent Owner contends that the ITC rejected Petitioner's proposed construction of the term adding "search query" to the proposed construction "because the claim language and specification require mapping before a search query occurs." *Id.* at 25 (citing Ex. 1017, 24–25).

At this stage in the proceedings, we interpret the term "directly mapped," as "each alphanumeric character of a prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad." This construction of "directly mapped" is consistent with the ITC's construction. Ex. 1017, 24–25. Although not directly required as part of the construction of the term "directly mapped," the respective parties' positions and arguments raise issues as to how the steps of claim 1 should be construed, that is, does the claim require "direct mapping" before a search query occurs. *See* Prelim. Resp. 25–26, 31–35.

Whether the order of the steps recited in a method claim must be performed in a particular order is properly a part of claim construction. *See*,

e.g., Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1371–72 (Fed. Cir. 2003). Generally, steps may be performed in any order so long as “nothing in the intrinsic evidence” compels otherwise. *Id.* at 1370. There is a two part test: “[f]irst, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written.” *Id.* “If not, we next look to the rest of the specification to determine whether it directly or implicitly requires such a narrow construction.” *Id.* If not, the sequence in which such steps are written is not a requirement.

The ITC proceeding addressed patents not at issue here and, more specifically, the portion of the ITC’s discussion of “directly mapped” that Patent Owner bases its arguments on is limited to the ’011 patent claims. *See* Prelim. Resp. 25; Ex. 1017, 24–25; *see also* Ex. 1017, 23. The ITC’s claim construction findings for the ’011 patent were based on the specific claim language of that patent, which differs from the claim language in the ’394 patent. Ex. 1017, 23–25. Claim 1 of the ’011 patent requires “indexing,” and then “*subsequent to indexing*, receiving from a user a search query,” with claim 9 reciting similar limitations of the apparatus claim. *See* Ex. 1001, 8:47–63, 9:46–63 (emphasis added). In its determination, the ITC recognized that the “subsequent to indexing” language of the ’011 patent claims reflected mapping potential search queries to subsets of items occurs before search queries occur. *See* Ex. 1017, 23, 25. Claim 1 of the ’394 patent is different than claims 1 and 9 of the ’011 patent. Claim 1 of the ’394 patent requires “providing access to an index of the items” for direct mapping, however, the claim does not explicitly require that the index access be provided prior to “receiving from a user a search query.” *See* Ex. 1021, 8:51–67. The ITC also referred to the ’011 patent specification’s disclosure

of “search space containing the searchable items is initially indexed by performing a many-to-many mapping from the alphanumeric space of terms to numeric strings corresponding to the various prefixes of each alphanumeric term constituting the query string” as support for its determinations for the ’011 patent claims. *See* Ex. 1017, 25 (citing Ex. 1001, 3:43–49). The ’394 patent contains a similar disclosure (Ex. 1021, 3:50–55) to that of the ’011 patent, however, we see nothing in the common portion of the specifications that requires a more narrow construction; the specifications state that “the user types in the prefix input query” (*see id.* at 3:47–49) prior to the “initial mapping.” This suggests a broader construction is supported. Thus, at this juncture, we decline to add the requirement that, under the steps of claim 1, “direct mapping” must occur before a search query. Accordingly, for the purposes of this decision, we interpret “directly mapped” as “each alphanumeric character of a prefix substring associated with an item is matched with its corresponding numeric key equivalent on an overloaded keypad.”

Other Terms

We determine that no other claim term requires an express construction for the purposes of this Decision. “[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)).

C. Alleged Obviousness of Claims 1, 2, 4, 5, 6, and 9–11 over Howard, King, and Payne

Petitioner contends that claims 1, 2, 4, 5, 6, and 9–11 would have been obvious over Howard, King, and Payne. Pet. 28–61. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id.* Petitioner also relies upon the Declaration of Dr. Edward A. Fox (“Fox Declaration”) to support its positions. Ex. 1014. Patent Owner argues that the prior art fails to teach some of the limitations of the claims and that insufficient rationale to combine the prior art has been provided by the Petitioner. Prelim. Resp. 31–46.

At this stage of the proceeding, we are persuaded that Petitioner has demonstrated a reasonable likelihood it will prevail in showing the obviousness of claims 1, 2, 4, 5, 6, and 9–11. We begin our discussion with a brief summary of Howard, King, and Payne, and then address the issues, evidence, analysis, and arguments presented by the parties.

1. Howard (Ex. 1007)

Howard is directed to a search system on a mobile electronic devices with a “restricted keyboard, such as the numeric keypad often found on many cell phones.” Ex. 1007 ¶ 5. Howard states that

A user can type in a character from that restricted keyboard, and it will be mapped to a fuller character set, such as the alphabet. In an exemplary embodiment, the numbers on the keypad will be mapped to the letters listed on the face of the keypad buttons, such that “2 maps to “A,” “B,” and “C,” “3” maps to “D,” “E,” and “F” and so on. Therefore, to look up “DAD”, a user would type in “323”.

Ex. 1007 ¶ 5.

An expanded lookup set is then used to search a database, which may have separate databases, for items matching the characters. Ex. 1007 ¶ 30. Figure 11, reproduced below, is a sample display for displaying key word searches. *Id.* ¶ 19.



As illustrated in Figure 11 above, a user enters data as shown in “accumulator” 1105, and categories such as “Automotive” 1115, “Restaurants” 1125, and “Websites” 1135 are displayed, along with key words 1120, 1130, 1140 that match the character string (3283) in the accumulator 1105. Ex. 1007 ¶¶ 49–50.

2. King (Ex. 1008)

King is directed to the use of a keyboard that has a reduced number of keys where the keys contain multiple characters, and where each keystroke may indicate one of several letters. Ex. 1008, 1:41–50. When a user enters keystrokes, matching words, stems of words, phrases, or other objects are identified and displayed. *Id.* at 10:29–37. “The keystroke sequence is

processed by comparing the keystroke sequence with stored vocabulary modules to match the sequence with corresponding stored words or other interpretations.” *Id.* at 3:3–6. King describes the use of a tree data structure that allows identification of matching objects based on the keystrokes, as illustrated in Figure 4A. *Id.* at 11:10–19.

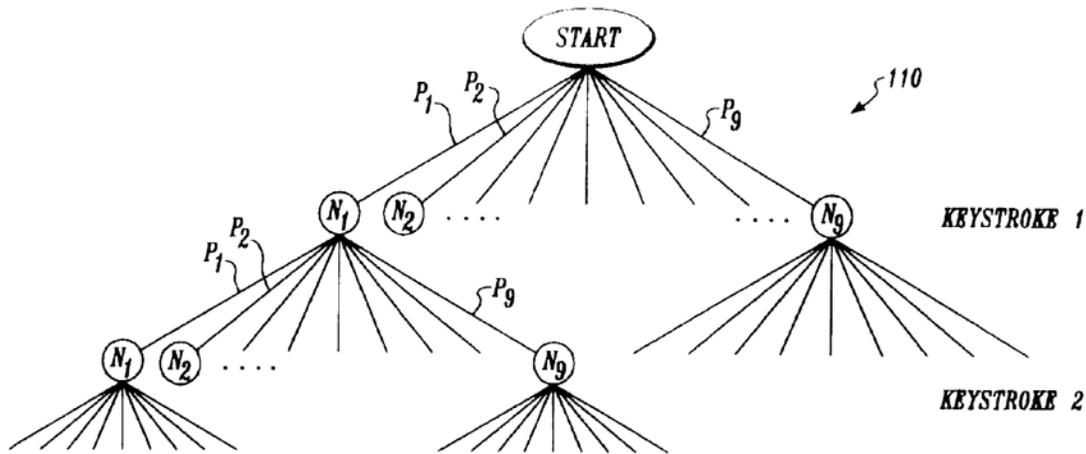


Fig. 4A.

As shown in Figure 4A above, each node N_1, N_2, \dots, N_9 in the vocabulary module tree represents a particular keystroke sequence. Ex. 1008, 11:13–15.

3. Payne (Ex. 1009)

Payne is directed to a system with query input to a portable device using a numeric-based keypad to find a progressively reduced list of items as the user enters the numeric keys. Ex. 1009, 2:30–34, 2:52–65. When a user is performing a look-up and enters a query of a “2” followed by a second keystroke of “2,” for example, the search system finds corresponding items beginning with “aa,” “ab,” “ac,” “ba,” “bb,” etc. *Id.* at 8:66–9:3. Visual

feedback indicators are used to assist a user in selecting items, as shown in Figure 3D, reproduced below. *Id.* at 5:45–50.

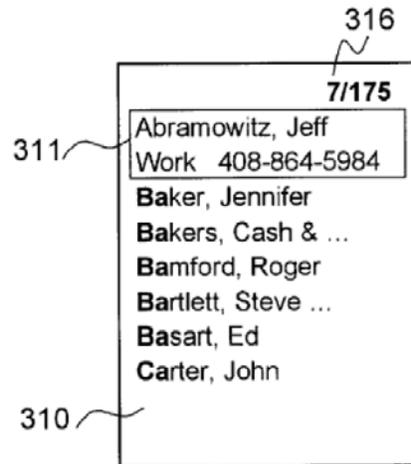


Fig. 3D

As shown by the bold letters in Figure 3D above, highlighting is used to provide visual feedback to the user when searching. *Id.* at 7:55–58.

4. *Obviousness Discussion*

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art;¹⁵ and (4) objective evidence of nonobviousness.¹⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

¹⁵ Petitioner proposes an assessment of the level of ordinary skill in the art. Pet. 17 (citing Ex. 1014 ¶ 47). Patent Owner does not provide proposed

a. Independent Claim 1

Petitioner asserts that Howard combined with King teaches limitation 1[a] of claim 1 of “providing access to an index of the items . . .”. Pet. 33–39. Petitioner contends that Howard teaches an “‘expanded lookup set’ approach that first maps ambiguous input to various possible combinations.” *Id.* at 33 (citing Ex. 1007, Abst., ¶¶ 29–31). Petitioner contends that Howard’s approach maps ambiguous input to various possible combinations to support the teaching of direct mapping of search query prefix substrings to numeric key equivalents on an overloaded keyboard. *Id.* at 33–34 (citing Ex. 1007, Abst., ¶¶ 29–31; Ex. 1014 ¶ 139). Petitioner asserts that King describes a more efficient, improved approach than Howard that uses a tree data structure that directly map strings of unresolved keystrokes to multiple search result objects, and one of skill in the art would be motivated to use King’s indexing method because it would be more efficient. *See id.* at 28–31, 34–35. Petitioner asserts that King’s objects are associated with keystrokes “for various search query prefix substrings” as claimed. *Id.* at 36 (citing Ex. 1014 ¶ 157).

Petitioner asserts that the combination of Howard and King teaches limitation 1[b] by the teaching of traversing the tree data structure of Howard in view of King after receiving a search query. Pet. 39. Petitioner contends that King “determines the alphanumeric characters that ‘match a string of unresolved keystrokes directly mapped to the subset’ (*i.e.*, the

qualifications. At this juncture, we adopt Petitioner’s proposed qualifications.

¹⁶ Although Patent Owner generally mentions the success of its products in its Preliminary Response, Patent Owner does not present objective indicia of nonobviousness. *See* Prelim. Resp. 1.

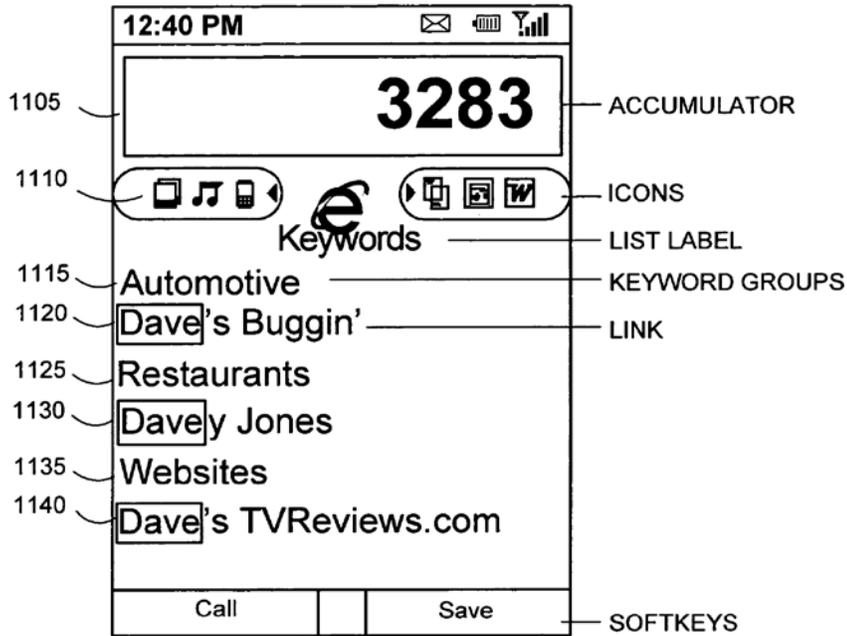
symbol fields indicate the particular characters that match the keystroke sequence directly mapped to the node).” *Id.* at 40 (citing Ex. 1008, 11:23–33, 12:26–13:7; Ex. 1014 ¶ 162).

Petitioner alleges that the combination of Howard and King teaches limitation 1[c] because Howard teaches that a user runs a search query with ambiguous input for desired items, with search queries comprising a prefix substring. Pet. 43–44.

Petitioner further asserts that the combination of Howard and King teaches limitation 1[d]. Pet. 45–47. Petitioner relies on Howard’s disclosures of dynamic incremental searches that update searches as a user types more unresolved keystrokes. *Id.* at 45. Petitioner asserts that Howard teaches the identification and display of subsets of items and that King also discloses each node of the index tree is associated with a subset of items, which are retrieved and displayed. *Id.* at 45–46. Petitioner also contends that King’s identifying and displaying is a direct mapping because each node associates subsets of items (and corresponding search query prefix substrings) with strings of unresolved keystrokes. *Id.* at 46.

Petitioner contends that the combination of Howard, King, and Payne teaches limitation 1[e]. Pet. 47–53. Petitioner asserts that Howard describes the use of a box to serve as highlight for users, as depicted in Figure 11 of

Howard, and as reproduced below. *Id.* at 48.



Petitioner refers to the boxes around the letters “Dave” as depicted in above Figure 11 of Howard for the teaching of highlighting. Pet. 48. Petitioner also asserts, that even if Howard did not directly teach updated search result highlighting, a person of ordinary skill in the art would be motivated to modify Howard and it would be a minor variation. *Id.* at 50. Petitioner also asserts, that if the Board disagrees with these assertions, Payne teaches highlighting of search results associated with entered keys, as shown in Figure 3D of Payne, reproduced below.

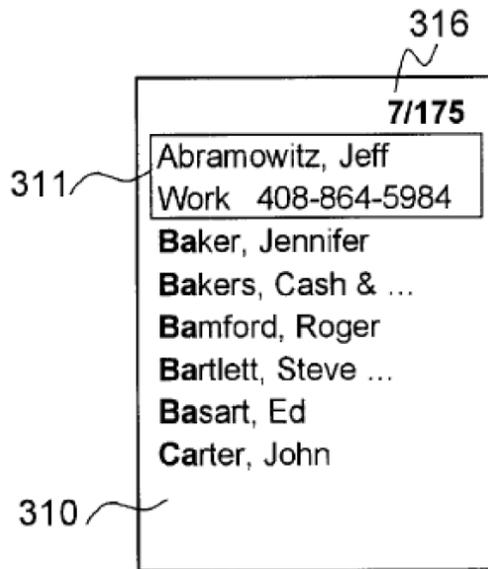


Fig. 3D

In Figure 3D of Payne above, a partial list of search results is shown with highlighted characters. Pet. 51. Petitioner asserts that one of ordinary skill in the art would have been motivated to implement the incremental highlighting of Payne with Howard and King in order to provide better visual feedback for the user. *Id.* at 51–52.

On this record, we determine Petitioner has shown a reasonable likelihood that the asserted prior art teaches the limitations of claim 1. Petitioner has further demonstrated sufficient rationale to combine the prior art has been provided. Patent Owner’s contrary arguments, discussed below, do not persuade us otherwise at this stage of the proceeding.

Patent Owner argues that the Petition fails to demonstrate that the asserted prior art teach the claim 1 steps of “indexing” and “determining.” Prelim. Resp. 31–35. According to Patent Owner, under the claim language, these steps have to be performed before any search queries are entered by the user. *Id.* at 31–32. Patent Owner contends that this is clear from the

claim language itself which requires that “in response to each unresolved keystroke, identifying and displaying the subsets of items . . . that are associated with the strings of . . . unresolved keystrokes . . . based on the direct mapping of strings of unresolved keystrokes to subsets of items.” *Id.* at 31. Patent Owner alleges that Petitioner fails to identify any teaching in the art where indexing would occur prior to entry of a search query. *Id.* at 32. Patent Owner asserts that Petitioner’s proposal that Howard’s search system is modified by King’s tree data structure “standing alone,” would not result in pre-indexing “because Howard’s search system admittedly does not pre-index.” *Id.* at 33.

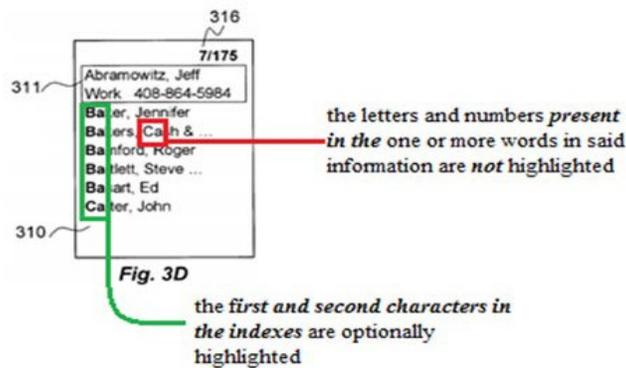
We do not agree with Patent Owner’s arguments because, as set forth above, they are based on Patent Owner’s proposed interpretation of claim 1, which we have not adopted here, which would have required that “direct mapping” must occur before a search query. *See supra* Section II.B.

Patent Owner also argues that the combination of Howard, King and, Payne fail to teach the step of “determining which letters and numbers . . . caused said items to be associated” and “highlighting the letters and numbers.” Prelim. Resp. 36–41. Patent Owner repeats arguments that the teaching of limitation 1[b] has not been demonstrated by the prior art, which we discuss and address above. *Id.* at 37.

Patent Owner also argues that Payne does not disclose functionality for “highlighting *the* letters and numbers as claimed.” Prelim. Resp. 38. More specifically, Patent Owner asserts that claim 1 first requires “determining letters and numbers present in the information associated with . . . the indexed items,” with the highlighting then applied to those letters and numbers. *Id.* Patent Owner asserts that Payne does not highlight the

particular letters and numbers that caused a direct mapping. *Id.* Patent Owner argues that Payne only discloses that “first and second characters in the indexes are optionally highlighted,” but Payne only indicates how many characters a user has entered and not which characters caused a match to occur. *Id.* (citing Ex. 1009, 7:55–58).

Patent Owner additionally refers to annotated Figure 3D of Payne, reproduced below. Prelim. Resp. 39.



Referring to annotated Figure 3D above, Patent Owner argues that Payne shows the first and second letters of the indexed string, but not the letters present in the words in the information that were determined to have caused the displayed items to be associated with the strings of unresolved keystrokes. Prelim. Resp. 39.

We do not find Patent Owner’s arguments on Payne to be persuasive because Patent Owner argues the references individually, whereas the Petition alleges the combination of Howard, King, and Payne teaches limitation 1[b]. Nonobviousness cannot be established by attacking the references individually when the unpatentability challenge is based on a combination of prior art disclosures. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Here, Howard and King are relied on for determining which letters and numbers are associated with and describe the

indexed items and are then combined with Payne for its teachings on highlighting. Additionally we note that the Petition asserts that a person of skill “would have been motivated to modify the system of Howard/King to replace or augment Howard’s box highlighting with the bold-text highlighting illustrated by Payne to change a visual design of the user interface.” Pet. 52 (citing Ex. 1014 ¶ 199). We find the evidence provided in the Petition to be sufficient that one of ordinary skill in the art would have sought to use the bold-text highlighting of Payne for better visual feedback for the user. *See id.* at 51–54.

Patent Owner also argues that the Petition fails to explain how a person of ordinary skill in the art would have adapted Howard’s keyword search system to display substrings and fragments, as taught by King. Prelim. Resp. 41–44. Patent Owner asserts that the Petition does not address how Howard’s dynamic incremental search, which updates search results as a user types more unresolved keystrokes, could be used to retrieve and display substrings. *Id.* at 41, 43. Patent Owner contends that Petitioner cannot rely on King for this teaching, because reliance has been limited to the use of King’s tree data structure. *Id.* at 44. Patent Owner further asserts that although Petitioner states that the combination of Howard with King would have been a simple substitution of known elements by the incorporation of King’s data structure, Petitioner fails to explain how Howard would search for, retrieve, and then display substrings when Howard is only designed to handle keyword matches. *Id.* As such, Patent Owner contends that Petitioner fails to meet its burden of demonstrating that a person of skill would have been motivated to combine these prior art teachings. *Id.* at 44–45.

Patent Owner's arguments focus on implementation details of the prior art based on bodily incorporation instead of the view of ordinary skill in the art of the combination, and we therefore do not find the arguments persuasive. Dr. Fox testifies that a person of ordinary skill in the art would have had a reasonable expectation of success because the art is predictable and well understood and King's search technique would be compatible with Howard's system. *See* Pet. 31 (citing Ex. 1014 ¶¶ 152–156). As such, we find the evidence of record on the issues of the rationale to combine and reasonable likelihood of success of the combination of prior art to be sufficient at this juncture.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claim 1 of the '394 patent would be obvious over the combination of Howard, King, and Payne.

b. Dependent Claims 2, 4, 5, 6, and 9–11

Petitioner contends that dependent claims 2, 4, 5, 6, and 9–11 would have been obvious over Howard, King, and Payne, and provides explanations as to how the prior art teaches each claim limitation. Pet. 54–57, 59–61. We have reviewed the Petition's assertions and on this record we are persuaded by Petitioner's explanation and evidence in support of this obviousness ground for claims 2, 4, 5, 6, and 9–11. Patent Owner does not present any arguments specific to these dependent claims, except those directed to independent claim 1, which we do not find persuasive for the reasons discussed above.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claims 2, 4, 5, 6, and 9–11

of the '394 patent would be obvious over the combination of Howard, King, and Payne.

D. Alleged Obviousness of Claim 3 over Howard, King, Payne, and Sanders

Petitioner contends that claim 3 would have been obvious over Howard, King, Payne, and Sanders. Pet. 61–65. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id.* Petitioner also relies upon the Fox Declaration to support its positions. Ex. 1014.

At this stage of the proceeding, we are persuaded that Petitioner has demonstrated a reasonable likelihood it will prevail in showing the obviousness of claim 3. We begin our discussion with a brief summary of Sanders, and then address the issues presented by the parties.

1. Sanders (Ex. 1010)

Sanders is directed to a search engine for an electronic program guide (“EPG”) where search conditions of varying degrees of complexity are created according to the interpretation of the terms in the search string. Ex. 1010, Abst. Sanders discloses using a stem transformer to stem a search term in order “to broaden the scope of a search.” *Id.* at 6:42–61. Search results may be grouped by relevance. *Id.* at 12:22–23. Sanders discloses the use of a results ranker that may organize hits by relevance, and may assign different priorities to exact matches in comparison to some that are searched after transformation, such as stemming or spell-correcting. *Id.* at 11:48–62.

2. Analysis

Petitioner contends that claim 3 would have been obvious over Howard, King, Payne, and Sanders, and provides explanations as to how the

prior art teaches each claim limitation as well as support for a rationale to combine the references. Pet. 61–65. We have reviewed the Petition’s explanation and evidence in support of this obviousness ground for claim 3 and find it to be sufficient at this juncture. Patent Owner does not present any arguments specific to this dependent claim, except those directed to independent claim 1, which we do not find persuasive for the reasons discussed above.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claim 3 of the ’394 patent would have been obvious over the combination of Howard, King, Payne, and Sanders.

E. Alleged Obviousness of Claim 4 over Howard, King, Payne, and Gross

Petitioner contends that claim 4 would have been obvious over Howard, King, Payne, and Gross. Pet. 65–67. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id.*

Dependent claim 4 recites the claim 1 method, “wherein the search query is processed by a server system remote from said user.” Ex. 1021, 10:5–6. Petitioner asserts that Gross teaches “‘a server-based search application’ that processes the search at a server remote from the user as an alternative to a client-based search application.” Pet. 65–66 (citing Ex. 1011, Fig. 6, step 612, ¶¶ 8, 35, 63, 66). Petitioner contends that a person of skill in the art would have sought to modify Howard’s search system to be server-based for several reasons, including that such a modification would result in faster search speeds. *Id.* at 66–67.

We have reviewed the Petition's explanation and evidence in support of this obviousness ground for claim 4 and find it to be sufficient at this juncture. Patent Owner does not present any arguments specific to this dependent claim, except those directed to independent claim 1, which we do not find persuasive for the reasons discussed above.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claim 4 of the '394 patent would have been obvious over the combination of Howard, King, Payne, and Gross.

F. Alleged Obviousness of Claim 7 over Howard, King, Payne, and Weeren

Petitioner contends that claim 7 would have been obvious over Howard, King, Payne, and Weeren. Pet. 67–68. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id.*

Dependent claim 7 recites the claim 5 method, “wherein the device is a desk phone.” Ex. 1021, 10:11–12. Petitioner asserts that “Weeren teaches an information retrieval system that is usable by a wireless phone or a desk phone.” Pet. 67 (citing Ex. 1025, 5:3–22). Petitioner contends that a person of skill in the art “would have been motivated to access the search system of Howard, King, and Payne with a desk phone to beneficially expand the number of devices from which the search system would be accessible,” and this use would be “mere application of a known technique.” *Id.* at 68.

We have reviewed the Petition's explanation and evidence in support of this obviousness ground for claim 7 and find it to be sufficient at this juncture. Patent Owner does not present any arguments specific to this

dependent claim, except those directed to independent claim 1, which we do not find persuasive for the reasons discussed above.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claim 7 of the '394 patent would have been obvious over the combination of Howard, King, Payne, and Weeren.

G. Alleged Obviousness of Claims 8 and 9 over Howard, King, Payne, and Robarts

Petitioner contends that claims 8 and 9 would have been obvious over Howard, King, Payne, and Robarts. Pet. 68–72. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id.*

Dependent claims 8 and 9 recite, respectively, the claim 5 method, “wherein the device is a remote control device for a television,” and the method of claim 1, “wherein at least some items of the set of items are television content item.” Ex. 1021, 10:13–16. Petitioner asserts that Robarts teaches an EPG system and that “an incremental overloaded keypad search system is useful for finding television programs in conjunction with EPG software running on a device.” Pet. 69 (citing Ex. 1026, Abst., ¶ 45; Ex. 1014 ¶ 255). Petitioner contends that a person of skill in the art “would have been motivated to adapt the incremental overloaded keypad search system of Howard, King, and Payne to work with devices running EPG software and controlled by television remote controls, as taught by Robarts, in order to enable the incremental search system to find television programs.” *Id.*

We have reviewed the Petition’s explanation and evidence in support of this obviousness ground for claims 8 and 9 and find it to be sufficient at this juncture. Patent Owner does not present any arguments specific to these

dependent claims, except those directed to independent claim 1, which we do not find persuasive for the reasons discussed above.

Thus, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claims 8 and 9 of the '394 patent would have been obvious over the combination of Howard, King, Payne, and Robarts.

III. CONCLUSION

Based on the arguments and evidence presented in the Petition, the Preliminary Response, and accompanying exhibits, we have determined there is a reasonable likelihood Petitioner would prevail with respect to at least one claim challenged in the Petition. We conclude that the threshold has been met for instituting *inter partes* review, and we institute on all challenged claims and all grounds. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354 (2018). We have not made a final determination on claim construction or as to the patentability of any of the challenged claims. Our final determination will be based on the record as fully developed during trial.

IV. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to challenged claims 1–11 of the '394 patent for all grounds raised in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which

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commences on the entry date of this Order.

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