

PUBLIC VERSION

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

VALTRUS INNOVATIONS LIMITED,
Patent Owner.

IPR2022-01545
Patent 6,728,704 B2

Before NORMAN H. BEAMER, KEVIN C. TROCK, and
SHARON FENICK, *Administrative Patent Judges*.

FENICK, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining No Challenged Claims Unpatentable

Denying Petitioner's Motion to Exclude

Granting Petitioner's and Patent Owner's Motions to Seal Except With
Respect to Paper 65

Granting Patent Owner's Motion for Entry of Protective Order
35 U.S.C. § 318(a)

I. INTRODUCTION

A. *Background and Summary*

Google LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–23 (“challenged claims”) of U.S. Patent No. 6,728,704 B2 (Ex. 1001, “the ’704 patent”). Valtrus Innovations Limited (“Patent Owner”) filed a Preliminary Response (Paper 6). With our prior authorization (Ex. 1019), Petitioner filed a Preliminary Reply (Paper 8) and Patent Owner filed a Preliminary Sur-reply (Paper 10). We determined after review of the record at that time that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims, and therefore we instituted this proceeding on April 11, 2023, as to all challenged claims and all grounds of unpatentability. Paper 12 (“Dec. on Inst.”).

After institution, Patent Owner filed a Response (Paper 32 (Parties and Board Version), Paper 34 (Public Version), “PO Resp.”); Petitioner filed a Reply (Paper 45 (Parties and Board Version), Paper 48 (Public Version), “Pet. Reply”); and Patent Owner filed a Sur-reply (Paper 53 (Parties and Board Version), Paper 55 (Public Version), “PO Sur-reply”). Thereafter, the parties presented oral arguments via a video hearing on February 8, 2024, and the Board entered a transcript into the record in two parts. Papers 74 (first portion) and 73 (second portion, filed as Parties and Board).

For the reasons set forth in this Final Written Decision pursuant to 35 U.S.C. § 318(a), we determine that Petitioner has not demonstrated by a preponderance of evidence that the challenged claims are unpatentable.

B. Real Parties in Interest

Petitioner identifies only itself as a real party in interest. Pet. 6.

Patent Owner states that “Valtrus Innovations Limited is a subsidiary of Key Patent Innovations Limited” and that “[b]oth Key Patent Innovations Limited and Valinvest LLC are financially interested in the outcome of the litigation between [Patent Owner] Valtrus [Innovations Limited] and [Petitioner] Google.” Paper 3 (Patent Owner’s Mandatory Notices), 1.

C. Related Matters

Petitioner and Patent Owner each identify *Valtrus Innovations Ltd. v. Google LLC*, No. 3-22-cv-00066 (N.D. Tex.) as a related matter. Pet. 6; Paper 3, 1.

D. The '704 Patent

The '704 patent relates to search engines, and specifically to querying multiple search engines and merging resulting search result lists to create a single result list. Ex. 1001, codes (54), (57), 1:7–10, 2:66–3:24, 4:21–24. Figure 2, reproduced below, depicts one embodiment of the invention, in which a single list is produced after queries to multiple search engines.

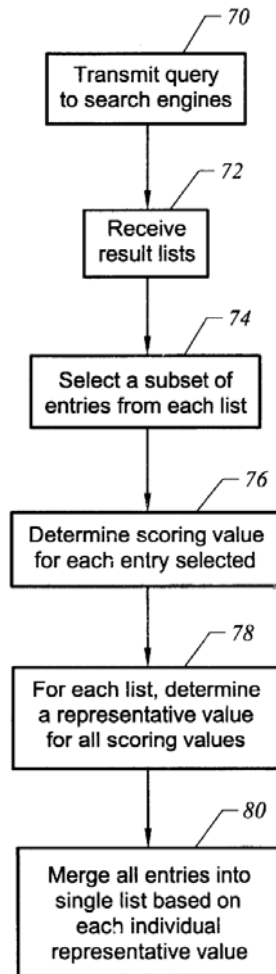


FIG. 2

Id. at 3:34–35, 5:28–6:28. In step 70 shown in Figure 2, a query is transmitted to a first search engine and from there to other search engines.

Id. at 5:29–32. These search engines return result lists to the first search engine, in step 72. *Id.* at 5:32–34.

The process of creating the single list then proceeds, towards “the goal of placing the most relevant entries first for the user’s convenience.” *Id.* at 5:35–37. In doing this, “[h]owever, to reduce the associated computational overhead, lists are not merged based on an examination of every single entry.” *Id.* at 5:37–39. Instead, in step 74, a subset of entries is selected

from each list. *Id.* at 5:44. These subsets are used to merge the lists. *Id.* at 5:45–46. “The subsets may be selected according to any technique for selecting a few items out of a larger group.” *Id.* at 5:46–48, 6:47–52. Three examples given, according the preferred embodiments recited in the ’704 patent are, for some chosen number *n*: (1) selection of the top *n* entries from each list; (2) selection of *n* entries uniformly spaced within each result list, and (3) selection of *n* entries randomly from the list. *Id.* at 5:48–55, 6:49–64.

Next, in step 76, a scoring value for each entry in the selected subsets is determined. *Id.* at 5:56–57, 6:65–66. These values “typically represent how closely the entry matches the query” and can be used to indicate an entry that is likely to be relevant to the user who made the query. *Id.* at 5:58–61, 7:1–5. In the next step, step 78, for each list, a representative score of all scoring values for the entries of that list is determined. *Id.* at 5:66–6:5, 7:5–9, 7:11–14.

Lastly, in the final step 80, all entries are merged from the result lists. *Id.* at 6:6–28, 7:9–10.

In one embodiment, merging occurs by selecting the first entry on a search engine’s result list with the highest representative score that has not yet been added to the merged list. *Id.* at 6:11–14, 7:15–18. The score for that search engine result list is decremented by a fixed amount and the process is repeated until all entries have been picked. *Id.* at 6:14–16, 7:18–34. If a score for any search engine result list drops below zero, it is reset to its initial value. *Id.* at 6:17–19. In another embodiment, each list is assigned a probability value that corresponds to the representative score for that list relative to the representative scores of other lists. *Id.* at 6:19–22, 7:35–37.

Entries are selected from the lists based on the probability values “in pseudorandom fashion,” so entries from lists with higher relative scores are more likely to be selected first. *Id.* at 6:22–28, 7:38–54.

The '704 patent also provides an example of merging multiple result lists into a single list in Figure 3, reproduced below.

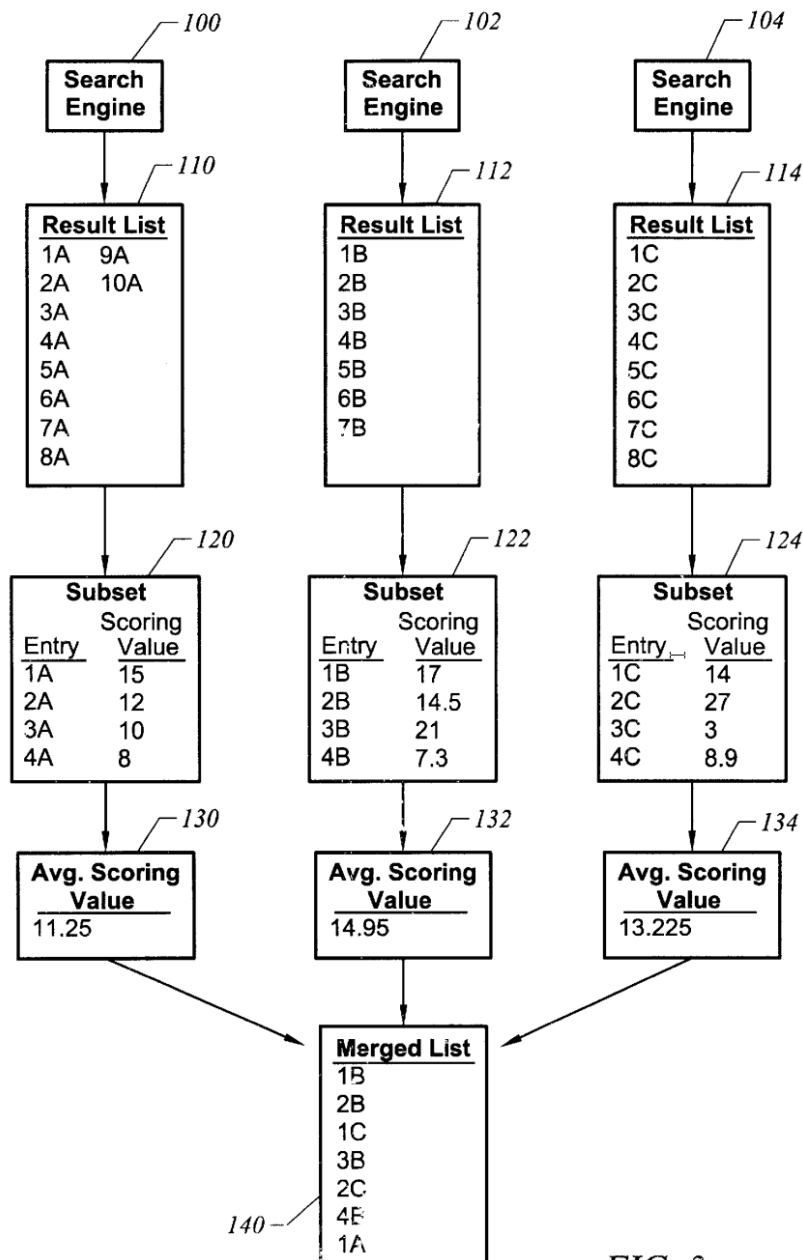


FIG. 3

Id. at 3:36–38, 6:29–30. Figure 3 shows three search engines, 100, 102, and 104, and illustrates how they process a query and how the result lists are used to produce a merged list. *Id.* at 6:29–36. Search engines 100, 102, and 104 produce result lists 110, 112, and 114, respectively. *Id.* at 6:29–32, 6:45–46. A subset of each result list is selected and a scoring value for each entry is calculated, resulting in subsets 120, 122, and 124. *Id.* at 6:47–7:5. A representative value for each subset is calculated, shown as average scoring values 130, 132, and 134. *Id.* at 7:5–6. The result lists are merged into merged list 140. *Id.* at 7:10–11.

E. Illustrative Claims

Claims 1, 7, 12, and 18 are independent. Claim 1, reproduced below with bracketed identifiers added as used by the parties, is illustrative.

1. [1a] A method of merging result lists from multiple search engines, said method comprising:
 - [1b] transmitting a query to a set of search engines;
 - [1c] receiving in response to said query a result list from each search engine of said set of search engines, each result list including one or more entries;
 - [1d] selecting a subset of entries from each result list to form a set of selected entries;
 - [1e] assigning to each selected entry of said set of selected entries a scoring value according to a scoring function;
 - [1f] assigning to each subset a representative value according to the scoring values assigned to its entries; and
 - [1g] producing a merged list of entries in a predetermined manner based on the representative value assigned to each result list,
 - [1h] wherein the representative value varies in accordance with predetermined manner.

Ex. 1001, 8:2–18.

F. Evidence

Petitioner relies on the following patent evidence.

Name	Patent Document	Exhibit
Voorhees	US 5,864,846	1005
Tso	US 6,385,602 B1	1006
Bushee	US 6,711,569 B1	1004
Koppel	US 7,257,766 B1	1013

G. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–23 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–3, 5–9, 11–14, 16–20, 22, 23	103	Bushee, Voorhees
3, 4, 9, 10, 14, 15, 20, 21	103	Bushee, Voorhees, Koppel
1–3, 5–9, 11–14, 16–20, 22, 23 ²	103	Voorhees, Bushee, Tso
3, 4, 9, 10, 14, 15, 20, 21	103	Voorhees, Bushee, Tso, Koppel

Pet. 7.

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103. Because the ’704 patent was filed before the effective date of the applicable AIA amendment, we refer to the pre-AIA version of the relevant statutes. *See* Ex. 1001, code (22).

² While the grounds table and header for the ground relating to Voorhees, Bushee, and Tso do not list claims 11, 16, and 22, these claims are discussed in the ground and we assume this was a typographical error. *Compare* Pet. 7, 41 *with id.* at 63, 64, 66.

II. ANALYSIS

A. *Legal Standards*

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring [*inter partes*] review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner must explain with particularity how the prior art would have rendered the challenged claims unpatentable. 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104 (“The petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.”).

Under 35 U.S.C. § 103(a), a claimed invention is unpatentable 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. *See 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) objective evidence of nonobviousness,

i.e., secondary considerations.³ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner argues that one of ordinary skill in the art would be “person having a Bachelor’s Degree in Computer Science or a related field and five years of experience in search technology, where a higher level of education may substitute for experience and vice versa.” Pet. 17 (citing Ex. 1002 (Declaration of Dr. Padhraic Smyth) ¶¶ 26–28). We adopted this as the level of ordinary skill in the art in our Institution Decision, for the purposes of that decision. Dec. on Inst. 21.

Patent Owner applies this level of ordinary skill in its analysis. PO Resp. 4; Ex. 2049 (Declaration of Dr. Eric Cole) ¶¶ 21–22.

We adopt Petitioner’s provided definition for the level of skill of a person of ordinary skill in the art. We view this definition as reasonable and consistent with the prior art, and as supported by the testimony of Dr. Smyth. Ex. 1002 ¶¶ 26–27.

C. Claim Construction

In an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b), including construing the claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). We apply the claim

³ The record does not include allegations or evidence of objective indicia of nonobviousness.

construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

No claim terms require construction to resolve the controversy before us. *See Realtime Data*, 912 F.3d at 1375.

D. Availability of Bushee as Prior Art

Petitioner asserts that claims 1–23 are unpatentable under various combinations of art, each including Bushee.

Petitioner argues that “Bushee is a U.S. patent that issued on March 23, 2004 from an application filed in the United States on July 24, 2001,” and that “[i]t is thus prior art under pre-AIA 35 U.S.C. §102(e).” Pet. 9.

1. Legal Standards

An inventor can antedate a reference by showing that the invention was conceived before the effective date of the reference, with diligence to actual or constructive reduction to practice. *In re Steed*, 802 F.3d 1311,

1320 (Fed. Cir. 2015) (citing 37 C.F.R. § 1.131); *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001). In an *inter partes* review, “a patent challenger has the burden of producing evidence to support a conclusion of unpatentability under § 102 or § 103,” but a patentee that “affirmatively seek[s] to establish a proposition not relied on by the patent challenger and not a necessary predicate for the unpatentability claim asserted,” such as establishing the benefit of an earlier priority date, bears the burden with respect to establishing that proposition. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375–76 (Fed. Cir. 2016) (citing *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015)).

“The filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application.” *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998); *Frazer v. Schlegel*, 498 F.3d 1283, 1288 (Fed. Cir. 2007).

“[A]n inventor's testimony, standing alone, is insufficient to prove conception—some form of corroboration must be shown.” *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993). The sufficiency of corroboration is determined according to a rule-of-reason analysis, where “all pertinent evidence is examined in order to determine whether the inventor’s story is credible.” *Fleming v. Escort Inc.*, 774 F.3d 1371, 1377 (Fed. Cir. 2014) (quoting *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001)); see also *Price v. Symsek*, 988 F.2d at 1195.

2. Parties’ Arguments Regarding Bushee’s Prior Art Status

Patent Owner asserts that “the inventors of the ’704 patent conceived the invention claimed in the ’704 patent before Bushee was filed, and

worked diligently to reduce it to practice,” and therefore “Bushee does not qualify as prior art.” PO Resp. 10. Patent Owner contends that “[t]he inventors of the ’704 patent conceived the claimed invention no later than

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] *Id.* at 12. In support of this, Patent Owner provides a declaration of Dr. Tsaparas, a named inventor of the ’704 patent. Ex. 1001, code (75); Ex. 2051 (“Tsaparas Decl.”); Ex. 2069.⁴ Dr. Tsaparas attaches two documents, [REDACTED] (the “Disclosure Documents”), which Dr. Tsaparas describes as, to the best of his knowledge, [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] Ex. 2069 ¶¶ 3, 5–6. Dr. Tsaparas testifies that his declaration includes [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]. Ex. 2069 ¶¶ 3–4. In the Declaration, Dr. Tsaparas testifies [REDACTED]

[REDACTED] *Id.* ¶ 5.

⁴ Exhibit 2069 is a corrected declaration replacing Exhibit 2051 and addressing issues with the oath in Exhibit 2051, pursuant to our order regarding the corrected declaration. Paper 58. The declarations are substantively the same except for the inclusion of a statement to conform to the requirements of 37 C.F.R. § 42.53(a) (*see* Paper 64, 5–6; *compare* Ex. 2051 *with* Ex. 2069); we refer to Exhibit 2069.

Patent Owner asserts that “[b]ased on the [Disclosure Documents] alone, a POSA would recognize that the inventors conceived and had possession of the invention claimed in ’704 patent no later than April 11, 2001.” PO Resp. 19–20. In support, Patent Owner provides a claim chart that it asserts “establishes possession of each of the limitations of claims 1–23.” *Id.* at 13–19.⁵ Patent Owner asserts that a draft patent application was prepared based on the Disclosure Documents and that “the applicant was reasonably continuously diligent for the approximately one-month period of time beginning just prior to Bushee’s filing date on July 24, 2001 to the date when the invention was constructively reduced to practice with the filing of the ’704 application on August 27, 2001.” *Id.* at 21–22.

Petitioner argues that Patent Owner has not met its burden to show that the inventors conceived of the invention by April 11, 2001, and diligently reduced the invention to practice. Pet. Reply 17–22. First, Petitioner argues that “*no inventor* testified that he or she conceived of the invention,” and that “[t]he lone inventor who did testify, Dr. Tsaparas, appears to have carefully worded his testimony to avoid any such direct statement.” *Id.* at 18. According to Petitioner, “Valtrus also put forward no evidence that any inventor’s conception occurred in the United States or in

⁵ Patent Owner further asserts that “[a]dditional evidence . . . supports and supplements the [Disclosure Documents] by showing that the applicant had a complete product on the market in 2001,” which would prove actual reduction to practice, including testimony from applicant employees regarding product availability and from Dr. Thomas Barr based on a source-code review. *Id.* at 20–21. As we do not base our decision that Patent Owner has antedated the Bushee reference on this asserted reduction to practice, we do not further review the parties’ assertions and evidence regarding them.

‘a NAFTA country or a WTO member country’, as required by pre-AIA 35 U.S.C. §104.” *Id.* at 18, n.2. According to Petitioner, “[t]he only document that might connect the named inventors to the patented ideas is the oath filed with the application, where signatures purporting to be those of the inventors appear with a statement that the signors believe themselves to be the first and true inventors.” *Id.* at 18–19 (citing Ex. 1007, 023–026).

Petitioner argues that there are issues with this oath. *Id.* at 19. Petitioner notes that the oath was signed after Bushee’s filing date, “between August 3 and 8, 2001.” *Id.* According to Petitioner, there is no evidence that connects the application that was eventually filed to the oath, and therefore, the claims or specification could have changed in the intervening three weeks prior to the filing of the application leading to the ’704 patent. *Id.* Petitioner also notes that “Valtrus itself argues that there was an actual reduction to practice in [REDACTED] before the filing date, [REDACTED] before the alleged [REDACTED] conception date, and a full year before named inventor Tsaparas even began work for Verity.” *Id.* at 19. Petitioner argues that “[t]hese facts raise real questions as to *who* invented the subject matter of the ’704 patent, and when.” *Id.*

As to Dr. Tsaparas’ declaration, Petitioner asserts that “[t]here is no independent, corroborating evidence for the dates he alleges nor the contents of the [REDACTED] documents he copied into his declaration.” *Id.* at 20. Further, Petitioner argues that the declaration does not bear the hallmarks of credibility needed to support critical details, arguing, for example, that the declaration initially failed to disclose that Dr. Tsaparas was being paid by counsel for Valtrus and was signed with an oath [REDACTED]
[REDACTED]

[REDACTED]. *Id.* Petitioner further notes that Dr. Tsaparas acknowledged that his own recollection of events was unclear and that he was relying on file metadata to establish dates. *Id.* (citing Ex. 1039, 18:3–11).

Petitioner also argues that “Valtrus offers essentially no evidence of diligence for the time period between the filing of Bushee and the filing of the application leading to the ’704 patent.” *Id.* at 21. In particular, Petitioner argues that there is no explanation of any activity during the period of time between August 8, 2001 (the date of the last inventor signature of the declaration) and August 27, 2001 (the date the application was filed). *Id.*

Patent Owner notes that Petitioner does not dispute that the Disclosure Documents discloses all claim limitations of the ’704 patent. PO Sur-reply 3. Patent Owner further points out that Dr. Tsaparas “testified that he

[REDACTED]
[REDACTED] and asserts that Petitioner “cross-examined Dr. Tsaparas, and chose not to ask a single question regarding authorship” and during this deposition Petitioner also “chose to avoid questions relating to the document metadata.” *Id.* at 3, 4. Patent Owner further asserts that “Dr. Tsaparas testified that [REDACTED]

[REDACTED]
[REDACTED]
Id. at 4–5. Patent Owner further asserts that “Dr. Tsaparas also testified that the [Disclosure Documents] [REDACTED]

[REDACTED] and that Petitioner “has failed to provide any reason why Dr.

Tsaparas' testimony or the document metadata" for the Disclosure Documents "is not credible." *Id.* at 5.

3. *Analysis*

a) *Date of Conception*

The evidence as a whole supports Patent Owner's contention that the claimed inventions were conceived no later than April 11, 2001.

As Patent Owner points out, Petitioner attempts to discredit Dr. Tsaparas' declaration testimony regarding the date of the Disclosure Documents, but Petitioner cross-examined Dr. Tsaparas and did not question Dr. Tsaparas' authorship of the documents or the document metadata. PO Sur-reply 3, 4. Dr. Tsaparas' testimony [REDACTED]

[REDACTED] is uncontroverted, as is his testimony that [REDACTED]

[REDACTED]
Ex. 2069 ¶¶ 5–6.

We look to the corroboration of this testimony, so as not to rely on "mere allegation or unsupported testimony." *Price v. Symsek*, 988 F.2d at 1194 (quoting *Mergenthaler v. Scudder*, 11 App. D.C. 264 (1897)). Patent Owner presents such corroboration in the form of the Disclosure Documents and the metadata for the documents, which indicates that [REDACTED]

[REDACTED]
[REDACTED]. Ex. 2069 ¶ 4; Ex. 2049 ¶ 41. While Petitioner argues that this metadata might be unreliable without more information about how the documents were maintained or what the access policies were (Pet. Reply 19–20), we view the corroboration to be sufficient under a rule-of-reason

analysis. Petitioner cites *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293 (Fed. Cir. 2018), to argue that the date of the Disclosure Documents is insufficiently corroborated. Pet. Reply 20. But in *Apator*, the Federal Circuit found that sufficient corroborating evidence had not been presented because copies of two emails to which the inventor testified that he had attached documents with drawings demonstrating the invention did not actually show that any documents were attached. 887 F.3d at 1296. Here we do not need to rely on Dr. Tsaparas' testimony alone for either the date of the Disclosure Documents or the content of these documents. The metadata and the documents themselves were provided with Dr. Tsaparas' declaration as separate corroboration of his testimony regarding [REDACTED]

Additionally, we have reviewed and credit Dr. Cole's analysis of the support for each of the claim elements of each claim in the '704 patent in the Disclosure Documents. PO Resp. 13–19; Ex. 2049 ¶ 42.⁶

For claim 1, we have analyzed and credit Dr. Cole's identification that the preamble's recitation of "a method of merging result lists from multiple search engines"⁷ is supported by, *inter alia*, the title and abstract of the Disclosure Documents, in addition to the description of [REDACTED]

[REDACTED] Ex. 2049 ¶ 42. For limitation 1b, "transmitting a query to a set of search engine," we credit Dr. Cole's identification of support including the Disclosure Documents' discussion of [REDACTED]

⁶ As noted *infra* at n.5, we do not base our decision on the "Additional Evidence" in the last column of the table presented in Ex. 2049 ¶ 42.

⁷ We do not determine whether the preamble is limiting.

[REDACTED] *Id.* For limitation 1c, “receiving in response to said query a result list from each search engine . . . ,” we credit Dr. Cole’s identification of the Disclosure Documents’ discussions of [REDACTED] *Id.* For limitation 1d, “selecting a subset of entries from each result list to form a set of selected entries,” we credit Dr. Cole’s identification of, *inter alia*,

[REDACTED] *Id.* For limitation 1e, “assigning to each selected entry of said set of selected entries a scoring value according to a scoring function,” we credit Dr. Cole’s identification that, according to the Disclosure Documents, [REDACTED]

[REDACTED]. *Id.* For limitation 1f, “assigning to each subset a representative value according to the scoring values assigned to its entries,” we credit Dr. Cole’s identification of support in the Disclosure Documents’ discussion of [REDACTED]

[REDACTED]. *Id.* For limitations 1g and 1h, “producing a merged list of entries in a predetermined manner based on the representative value assigned to each result list, wherein the representative value varies in accordance with the predetermined manner,” we credit Dr. Cole’s identification of the description of [REDACTED].
Id.

Each of these supports the conclusion that the conception of claim 1 is evidenced in the Disclosure Documents. Additionally, details regarding the other independent claims (claims 7, 12, and 18) selection (as further recited

in claims 2–4, 8–10, 13–15, and 19–21) and production of the merged list (as further recited in claims 5, 6, 11, 16, 17, 22, and 23) are similarly supported in the portions of the Disclosure Documents identified by Dr. Cole. *Id.*

Considering all the evidence under a rule-of-reason analysis, we determine that the preponderance of the evidence shows that the conception date for all the challenged claims is on or earlier than [REDACTED].

b) Reasonable Diligence

We find that Patent Owner has established reasonable diligence in constructively reducing the inventions to practice. As the Federal Circuit has explained, “Reasonable diligence must be shown throughout the entire critical period,” which in this case begins just prior to Bushee’s effective date (July 24, 2001) and ends on the date of the invention’s constructive reduction to practice (the August 27, 2001 filing date of the ’704 patent). *Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.*, 841 F.3d 1004, 1007 (Fed. Cir. 2016). Although “[a]n inventor’s testimony regarding his reasonable diligence must be corroborated by evidence,” a “variety of activities may corroborate an inventor’s testimony,” and “such corroborating evidence is considered ‘as a whole’ under a rule of reason.” *Id.* at 1007–08 (internal quotations omitted).

Diligence “need not be perfectly continuous—only reasonably continuous.” *Arctic Cat Inc. v. GEP Power Prods., Inc.*, 919 F.3d 1320, 1331 (Fed. Cir. 2019). “The point of the diligence analysis is not to scour the patent owner’s corroborating evidence in search of time where the patent owner has failed to substantiate some sort of activity.” *Id.* (quoting *Perfect Surgical*, 841 F.3d at 1009). “Rather, the adequacy of the reduction to

practice is determined by whether, ‘in light of the evidence as a whole, the invention was not abandoned or unreasonably delayed.’” *Id.* (quoting *Perfect Surgical*, 841 F.3d at 1009).

Patent Owner asserts that “the law firm provided a draft of the application somewhere between July 30 and August 3,” “[t]he inventors then were engaged in the signing process between August 3 and August 8,” and that the law firm “exercised reasonably continuous diligence” between August 8 and August 27, “working on various aspects of finalizing and filing of the application.” PO Sur-Reply 12–13; PO Reply 21–23. The dates that the inventors signed their declarations is cited as partial corroboration of these assertions. Ex. 1007, 23–26.

Petitioner argues that the conclusions from the dates in the file history show that “Verity set aside the application for nearly three weeks . . . after the last inventor signed the declaration.” Pet. Reply 21–22 (citing *In re Mulder*, 716 F.2d 1542, 1545 (Fed. Cir. 1983) for the proposition that a “two-day gap [was] not reasonably diligent given lack of evidence”). But the Federal Circuit has clarified that, in *In re Mulder*, “the patent owner did not produce any evidence of diligence during the critical period[, n]or could it point to any activity during the months between the drafting of the application and the start of the critical period.” *Perfect Surgical*, 841 F.3d at 1009. “*In re Mulder* does not hold that an inventor’s inactivity during a portion of the critical period can, without more, destroy a patent owner’s claim of diligence.” *Id.* In *Perfect Surgical*, the Federal Circuit remanded for the Board to consider whether the evidence showed “reasonably continuous diligence.” *Id.* at 1009–12.

Taken as a whole, we find that Petitioner's arguments amount to an attempt "to scour the patent owner's corroborating evidence in search of intervals of time where the patent owner has failed to substantiate some sort of activity." *See id.* at 1009. Here, the record shows that "in light of the evidence as a whole, 'the invention was not abandoned or unreasonably delayed.'" *Id.* The claimed invention was conceived by [REDACTED]. *Supra* § II.D.3.a. A patent application was drafted and finalized and the inventors signed their declarations by August 8, 2001. Ex. 1007, 23–26. The application was filed on August 27, 2001. No evidence has been presented that establishes abandonment or unreasonable delay, and we do not infer abandonment or unreasonable delay from the timeline established here.

Thus, we determine that Patent Owner has established a date of invention of the challenged claims before Bushee's filing date, demonstrated diligence from just prior to Bushee's filing date until a constructive reduction to practice on August 27, 2001, and determine that, on this record, Bushee is not prior art under 35 U.S.C. § 102(e).

4. Conclusion - Bushee

All instituted grounds of unpatentability rely at least in part on Bushee. Pet. 7. Because Petitioner has not demonstrated that Bushee is prior art, Petitioner fails to demonstrate by a preponderance of the evidence that any of claims 1–3, 5–9, 11–14, 16–20, 22, and 23, challenged under Ground 1, or claims 3, 4, 9, 10, 14, 15, 20, and 21, challenged under Ground 2, are unpatentable.

While Grounds 3 and 4 also apply Bushee, Petitioner asserts that the subject matter at issue is “taught redundantly by both Bushee and Tso.” Pet. 42, 66. We address Grounds 3 and 4 in further detail below.

E. Obviousness of Claims 1–3, 5–9, 11–14, 16–20, 22, and 23 over Combination of Voorhees and Tso

Petitioner presents grounds asserting that claims 1–3, 5–9, 12–14, 17–20, and 23 are unpatentable over a combination of Voorhees, Bushee, and Tso. Pet. 41–66. In these grounds, Petitioner describes Voorhees as “the primary reference” with modifications of the Voorhees system based on Bushee or Tso. *Id.* at 42. As addressed above, on the record before us, we determine that Bushee has not been shown to be prior art. Thus, we analyze the Petitioner’s assertions regarding unpatentability over Voorhees and Tso.

1. Voorhees (Ex. 1005)

Voorhees relates to facilitating web searches by combining search result documents provided by separate search engines into a single, more accurate integrated list with a ranked list of pages. Ex. 1005, code (57), 1:6–12.

Voorhees describes two “fusion” methods for combining the results of separate search engines, an average relevant document distribution method, and a centroid method. *Id.* at 1:60–65, 2:20–36, 2:43–49.

The average relevant document distribution method uses data from training queries to various search engines and data regarding the judged relevance of the search engine responses to the training queries. *Id.* at 2:21–27, 3:22–34. The method uses training queries similar to the user’s query to determine the correct number of documents from each search engine to use in the final integrated list. *Id.* at 3:35–66. The average relevant document distribution method is summarized by Voorhees in these steps:

- (a) forming a set of selected queries, the queries including respective terms, for which selected queries relevance data from past data is known, herein referred to as training queries, in a vector space comprising all training queries, the relevance data comprising judgments by a user as to whether a page is appropriate for a query which retrieved it;
- (b) identifying a set of k most similar training queries to current query q ;
- (c) computing an average relevant document distribution of the k queries within the training queries' search results for each of the search engines;
- (d) using the computed relevant document distributions, finding an optimal number of pages to select from the result set of each search engine [so] N total pages are to be retrieved; and
- (e) creating a final retrieved set by forming the union of the top λ_s pages from each search engine.

Id. at 2:20–36 (paragraphing and indenting added); *see id.* Fig. 1; 3:20–4:29.

To create the final retrieved set as discussed in step (e), Voorhees teaches that the pages be ranked probabilistically using a “biased c-faced die.” *Id.* at 4:1–11, 4:18–29. For each next page to be added to the integrated list, the c-faced die is biased by the number of pages remaining to be placed into the integrated list from each of the search engines, so the first page selected will be more likely to be selected from the search engine that will contribute the most pages to the integrated list. *Id.*

Voorhees's “centroid” method involves the use of training queries that are clustered using the number of common documents retrieved by a search engine between two queries as a similarity measure. *Id.* at 4:30–53, 5:36–44. The centroid of a query cluster is created by averaging the vectors of the queries contained within a cluster; this centroid “is the system's

representation of the topic covered by that query cluster.” *Id.* at 4:53–57, 5:45–56. During the training phase a weight is assigned to each cluster that reflects how effective queries in the cluster are for the search engine. *Id.* at 4:58–63, 5:57–64.

For the centroid method, after training, for a user’s query, for each search engine the cluster whose centroid vector is most similar to that query is used in order to obtain a weight for the search engine for that vector; the weights over all search engines are in turn used to determine how many pages to be retrieved from each search engine. *Id.* at 4:64–5:29, 5:65–6:18. The use of biased c-faced die is then used to select pages from the various search engines in the same way as in the average relevant document distribution method. *Id.* at 6:19–29.

2. *Tso (Ex. 1006)*

Tso relates to presenting search results in dynamic result categories. Ex. 1006, code (57), 1:6–8, 2:53–55, 3:52–66. The search results may be obtained from more than one data source. *Id.* at 5:2–7. After search results are received, dynamic categories are established based on attributes of the search results. *Id.* at 2:55–59, 4:4–55, Figs. 1, 2. These categories are used to present search results on a user interface. *Id.* at 2:60–67, 4:56–8:44, Figs. 2, 3A–3C.

Tso describes that the receipt of search results may be followed by the use of a relevancy rating in order to reduce the number of data items in a search result and obtain “qualifying data items” from among the data items received as search results. *Id.* at 5:9–38. Tso discloses that “[i]n situations where a query results in a large number of matching data items, it is often useful to reduce the amount of matching data items by discarding matching

data items that do not satisfy a minimum relevance threshold.” *Id.* at 5:16–20.

3. *Claim 1 – Obviousness Over Voorhees and Tso*

The ground of obviousness presented in the Petition for claim 1 relies mainly on Voorhees for many elements of claim 1. Pet. 45–57. The Petition argues that Voorhees teaches a method of merging result lists from multiple search engines (limitation 1a), which includes transmitting a query to a set of search engines (limitation 1b) and receiving a result list including one or more entries from each search engine (limitation 1c). *Id.* at 45–48 (citing Ex. 1005 code (57), 1:13–17, 1:35–63, 2:15–20, 6:41–46, 7:65–8:3; Ex. 1002 ¶¶ 140–145).

a) *Limitation 1d*

With respect to limitation 1d, reciting that the method entails “selecting a subset of entries from each result list to form a set of selected entries,” Petitioner contends that, “[i]n the relevant timeframe, it was well-known that search engines could produce a very large number of matching search results for a given query,” and that:

It would therefore have been obvious to select a subset of entries from the full result set returned by any particular search engine in response to a query, in order to reduce the result set to a more manageable number on which to perform the analyses and merger algorithms of Voorhees. It would have been obvious to a person of ordinary skill that a human user can only review so many search results, and that selecting the top thousand (or any suitable number) of references would have been beneficial for the Voorhees algorithm. Limiting the number of results would also have advantageously allowed the search engine to produce a results list faster, which was a well-known goal in the relevant timeframe.

Pet. 48–49 (citations omitted) (citing Ex. 1002 ¶ 148). Thus, the Petition sets forth two reasons why one of ordinary skill in the art would have selected a subset of entries from the full result list returned by each search engine: 1) to limit the search results presented to the user of Voorhees; and 2) to allow the Voorhees system to produce a final result faster.⁸ *Id.* Petitioner, in its Reply, additionally argues that “initially limiting the number of search results from each search engine to a workable number allows the *search engines themselves* to produce results faster by limiting the resources required to store and transmit the search results to the Voorhees system.” Pet. Reply 30.

Patent Owner argues that Voorhees already solves the problem of providing a limited number of search results for a human user because it discusses providing a pre-set number (N) of total results. PO Resp. 54–56 (citing Ex. 1005, code (57), 6:10–11, 6:28–29; Ex. 2052, 116:23–117:4; Ex. 2049 ¶¶ 81–83). We agree. Voorhees clearly describes a pre-determined number N of pages which is to be presented to a user. Ex. 1005, code (57), 6:28–29. Thus, no additional limitation on the result lists received from search engines could fairly be motivated by the desire to limit the presentation of pages to a user.

Additionally, Petitioner’s reply argument regarding limiting the number of search results initially received from each search engine to limit the resources required to store and transmit results, as Patent Owner argues, is not commensurate with the claim limitation, which requires a subset to be

⁸ While the Petition cites Tso in its arguments regarding limitation 1d, it does so only to show that one of ordinary skill would have known that “search engines could produce a very large number” of results, and not for any specific teaching related to limitation 1d.

formed from each result list received from each search engines, not to cause the search engine to limit result lists before they are provided. PO Sur-reply 22.

Thus we are left to determine whether Petitioner has adequately shown that one of ordinary skill in the art would have been motivated to perform the step of “selecting a subset of entries from each result list to form a set of selected entries,” in order to reduce the result lists from each search engine to a more manageable number and produce a results list faster. In support, we have only the bald statement by Dr. Smyth that this is so, with no further explanation. Ex. 1002 ¶ 148. It is difficult to accord significant weight to this statement. 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *see also Xerox Corp. et al., v. Bytemark*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential) (Conclusory expert testimony “is particularly problematic in cases where, like here, expert testimony is offered not simply to provide a motivation to combine prior-art teachings, but rather to supply a limitation missing from the prior art.”). Additionally, Voorhees performs its selection in a manner that does not seem to be significantly affected by the number of results in each search engine result list – by rolling a die, selecting the search engine whose number corresponds to the die roll, and “plac[ing] the next page from that engine’s ranking into the final ranking.” Ex. 1005, 3:66–12. The record does not clearly support Dr. Smyth’s statement that reducing the number of pages in each result list would produce a results list faster. For these reasons, we determine that Petitioner has not shown by a preponderance of

the evidence that one of ordinary skill would have found limitation 1d to be obvious in view of Voorhees.

b) Limitation 1e

Limitation 1e requires “assigning to each selected entry of said set of selected entries a scoring value according to a scoring function.” Ex. 1001, 8:10–11. Petitioner cites Voorhees’ disclosure of search engines ranking their web pages, and argues that it would have been clear to one of ordinary skill that the search engines in Voorhees would have been operating in accordance with this, and thus that “the overall Voorhees system” would have assigned to each entry in the returned list a scoring value according to a scoring function. Pet. 49–51 (citing Ex. 1005, 1:13–46, 2:1–2, 2:55–57, 2:65–3:7, 3:39–56, 4:1–11, 5:29; Ex. 1002 ¶¶ 151–152). Petitioner additionally argues that, to the extent the use of scoring values is not taught in Voorhees, it would have been obvious to assign each selected entry in each list a scoring function, as this was a standard search engine operation, and in order to cause more relevant search results to appear at the top of the resulting search list. *Id.* at 51–52 (citing Ex. 1002 ¶ 153).

Petitioner additionally argues that the “cosine similarity score” described in Voorhees is used by each of the search engines; that “Voorhees already prescribes methods for the internal function of individual search engines.” Pet. Reply 30–31 (citing Ex. 1005, 4:64–5:18, 5:30–6:30; Ex. 1002 ¶¶ 162–163; Ex. 2052, 53:1–24); Pet. 51.

Patent Owner argues, in Voorhees there is no “central authority” for scoring. PO Resp. 38–39 (citing Ex. 2052, 52:7–25; Ex. 1002 ¶¶ 144–145; Ex. 2049 ¶¶ 50, 61–62). Patent Owner contends that Petitioner’s relied-upon “retrieval status values” in Voorhees are generated by each individual search

engine which provides a list of search results. *Id.* at 57–58, 60–61 (citing Ex. 1005, 1:13–19, 1:29–2:2; Ex. 2052, 119:9–24; Ex. 2049 ¶¶ 100–101). Because each individual search engine performs its own scoring, Patent Owner argues that no one scoring function is shown in Voorhees which would teach or suggest the recited single scoring function (“a scoring function”) of claim limitation 1e. *Id.* at 58–59 (citing Ex. 2049 ¶¶ 97–99). Patent Owner argues that “that search engines have disparate scoring systems is precisely the problem to which Voorhees’ query training and search engine weights are directed” and that “[i]f Voorhees were able to calculate its own document scores, it would at that point function as a ‘central authority’ itself, effectively eliminating the need for its entire query clustering merging strategy.” *Id.* at 60–61 (citing Ex. 2049 ¶¶ 100–101).

We agree with Patent Owner that Voorhees relies on the individual search engine’s rankings rather than calculating a universal score for all entries on subsets of the result lists retrieved. Voorhees determines a number λ_s for each search engine s and “form[s] a union of the top λ_s pages from each search engine” through a process which iterates the selection of picking the next search engine to use a result from and “plac[ing] the next page from that engine’s ranking into the final ranking.” Ex. 1005, 3:11–20, 3:66–4:12; *see* Pet. 51 (“Voorhees also assumes that the results list returned by a search engine is ordered, such that more relevant documents . . . have lower rank values (where lower is better).”), 52 (“Voorhees selects results from individual search engines to place into an integrated list by choosing the top-ranked results first.”). Voorhees relies on the lists it receives to have been ranked by the retrieval status values, but to not contain those values. *See* Ex. 1005, 1:17–34 (describing prior art fusion methods which are not

applicable “when the component searches return only the ordered list of documents and not the individual status values”), 1:66–2:2 (describing the invention as “producing a single ranking despite the fact that most search engines do not return the similarities that are computed for individual pages”). Adding a global scoring function would render moot the fusion process Voorhees describes, and which Petitioner relies on to teach the balance of the limitations of claim 1. *See* Pet. 25–27, 56–57.

Additionally, the “cosine similarity score” Petitioner cites as teaching the scoring function of limitation 1e is not a scoring function that assigns a scoring value to each selected entry of said set of selected entries, but rather part of the training process which is not used during the merging process Petitioner cites for the prior claim limitations. *See* PO Sur-reply 22–23 (citing Ex. 1005, 3:5–7). Petitioner does not describe how the cosine similarity score used to calculate similarity between two queries teaches the use of such a score for “each selected entry” of result lists from search engines.

For these reasons, Petitioner has not shown by a preponderance of the evidence how the individual, disparate scoring performed by search engines in Voorhees prior to providing their results could teach or suggest a single scoring function, has not shown why one of ordinary skill in the art would have included a scoring function in the system which receives results from the search engines, and has not shown that Voorhees’ cosine similarity score teaches the scoring function of limitation 1e.

c) Conclusion – Claim 1

Because Petitioner has not shown by a preponderance of the evidence how the combination of Voorhees and Tso teaches or suggests limitation 1d,

or how the combination of Voorhees and Tso teaches or suggests limitation 1e, we find Petitioner has not shown by a preponderance of the evidence that claim 1 would have been obvious over Voorhees and Tso.

4. Claims 2, 3, 5–9, 11–14, 16–20, 22, and 23

Petitioner's arguments regarding the obviousness of independent claims 7, 12, and 18 over Voorhees and Tso rely on the arguments for claim 1's limitations 1d and 1e. Pet. 62, 63, 65. Petitioner's arguments regarding the obviousness of claims 2, 3, 5, 6, 8, 9, 11, 13, 14, 16, 17, 19, 20, 22, and 23 over Voorhees and Tso rely on the arguments with respect to the independent claims from which they depend. Pet. 57–61, 63, 64, 66.

For the same reasons described above, therefore, we find Petitioner has not shown by a preponderance of the evidence that claims 2, 3, 5–9, 11–14, 16–20, 22, and 23 would have been obvious over Voorhees and Tso.

*F. Obviousness of Claims 3, 4, 9, 10, 14, 15, 20, and 21
Combination of Voorhees, Tso, and Koppel*

Petitioner's arguments regarding the obviousness of claims 3, 4, 9, 10, 14, 15, 20, and 21 over Voorhees, Tso, and Koppel rely on the arguments with respect to the independent claims from which they depend. Pet. 66–67.

For the same reasons described above, therefore, we find Petitioner has not shown by a preponderance of the evidence that claims 3, 4, 9, 10, 14, 15, 20, and 2 would have been obvious over Voorhees, Tso, and Koppel.

III. MOTION TO EXCLUDE

Petitioner filed a motion to exclude Exhibits 2050, 2051, 2057–2062 and 2064–2067 in their entirety, as well as paragraphs 41–53 of Exhibit 2049. Paper 56, 1. We address each below.

A. Exhibits 2051 and 2069

Petitioner asserted in its Motion that Exhibit 2051, the Tsaparas Declaration, should be excluded in its entirety because it “lacks an oath which complies with the applicable statutory and regulatory requirements governing declarations and is therefore not a proper declaration.” *Id.* at 7. This issue was rendered moot with the filing of a corrected declaration (Exhibit 2069). Petitioner withdrew its objection to the oath in view of the submission of the corrected declaration. Paper 65, 1, n.1.

Petitioner further argues that the declaration⁹ contains inadmissible hearsay. Paper 56, 9–11; Paper 65, 1–3. Specifically, Petitioner argues that “Paragraphs 3–6 of Exhibit 2069 describe two purported invention disclosure documents which are also copied into the exhibit and which are offered for the truth of the matter.” Paper 65, 2. Petitioner also argues that “Dr. Tsaparas also relies on the file metadata to determine the alleged dates and authorship of the documents,” and that Patent Owner “provides no evidence that it is reasonable to rely on the metadata in question, and the evidence of record indicates that metadata can be changed and can be unreliable.” *Id.* at 3. Petitioner argues that “[e]ven if the metadata itself is not hearsay, it is contained within a hearsay document, and is thus inadmissible if the document does not qualify for an exception.” *Id.* Petitioner presents further arguments that no hearsay exception applies. Paper 56, 10–11; Paper 65, 2–3.

Petitioner also points out that paragraphs 3–6 of the Tsaparas Declaration describe two purported invention disclosure documents which

⁹ We understand the arguments to relate to both the original declaration, Exhibit 2051, and the corrected version, Exhibit 2069.

are also copied into the exhibit, and asserts that “paragraphs 3–6 as well as the attached documents are hearsay and should be excluded accordingly.” Paper 56, 9. Petitioner asserts that “Dr. Tsaparas has no independent recollection of the dates on which the documents were created or modified,” and that “the sole basis for any determination as to their dates is the metadata associated with the attached documents.” *Id.* Petitioner further asserts that Dr. Tsaparas “also relies on the file metadata to determine the alleged authorship of the documents.” *Id.* at 10. Petitioner argues that “[d]espite relying on this metadata, neither Dr. Tsaparas nor Valtrus provided any expert testimony that the metadata was reliable, and Valtrus’ deponent Dr. Barr testified that similar metadata would be unreliable without much more information about how the documents were maintained.” *Id.* Petitioner argues that “[b]ecause the attached documents are out of court statements offered for the truth of the matter asserted, they are hearsay,” and further argues that no hearsay exception applies. *Id.*

Petitioner also argues that “Exhibit 2051 attaches two purported invention disclosure documents and further describes and purports to depict the alleged metadata associated with those documents in paragraphs 3–6,” but that “original native files of the documents themselves (including any associated metadata) have not been filed or served and are thus not of record.” *Id.* at 12. Petitioner argues that “[t]he best evidence rule requires that the original of a document be presented as evidence” and that “[n]o reason has been given why original native copies of these documents could not be provided.” *Id.* at 12–13.

With respect to the Disclosure Documents, we agree with Patent Owner that “[t]hese documents are offered not to prove the truth of the

matter asserted in the documents, that is, what's described in the documents is true, but rather to prove that the inventors had possession of the claimed invention before the critical date." Paper 61, 6.

With respect to the metadata, while not binding precedent upon us, we agree with the statement that:

raw data generated by the machines [are] not hearsay statements as implicated by the Confrontation Clause. Hear-say is understood to be "a *statement*, other than one made by the *declarant* while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted." Fed. R. Evid. 801(c) (emphasis added). "A declarant is a *person* who makes a statement." Fed. R. Evid. 801(b) (emphasis added). And a "statement," . . . is an "(1) oral or written assertion or (2) nonverbal conduct of a *person*, if it is intended by the person as an assertion." Fed. R. Evid. 801(a) (emphasis added). Only a *person* may be a declarant and make a statement. Accordingly, "nothing 'said' by a machine . . . is hear-say." 4 Mueller & Kirkpatrick, Federal Evidence, § 380, at 65 (2d ed.1994).

United States v. Washington, 498 F.3d 225, 231 (4th Cir. 2007). Petitioner has had the opportunity to take testimony from Dr. Tsaparas regarding the metadata and has presented arguments regarding the reliability of the metadata. Ex. 1039; Pet. Reply 20.

Furthermore, we agree with Patent Owner that the metadata and documents in Exhibit 2051/2069 as presented by Patent Owner satisfies the notion of an "original" under the best evidence rule, and furthermore, that Petitioner could have sought additional discovery related to Exhibit 2051/2069 and did not. Paper 61, 10–12.

Therefore, we do not exclude Exhibit 2051 or Exhibit 2069.

B. Exhibit 2049

Petitioner argues that paragraphs 41–53 of Exhibit 2049 should be excluded because these paragraphs rely on Exhibit 2051. Paper 56, 14. As we have denied Petitioner’s motion as to Exhibit 2051, we therefore also deny the motion as to Exhibit 2049. Petitioner’s arguments as to whether it would be reasonable for Dr. Cole to rely on the information he cites to and that experts in the field would do so are moot.

C. Exhibits 2050, 2057–2062 and 2064–2067

Exhibits 2050, 2057–2062 and 2064–2067 are related to arguments based on the Verity® K2 product. As we do not rely on these exhibits, the motion to exclude Exhibits 2050, 2057–2062 and 2064–2067 is moot.

**IV. MOTIONS TO SEAL AND MOTION FOR ENTRY OF THE
AGREED PROTECTIVE ORDER AND SUPPLEMENTAL
PROTECTIVE ORDER**

Both Petitioner and Patent Owner have filed motions to seal selected exhibits and documents.

Patent Owner filed a Motion to Seal Patent Owner’s Response and Exhibits 2049–51 and also requested entry of an agreed Protective Order and Supplemental Protective Order. Paper 33. Patent Owner filed a complete version of its Patent Owner’s Response as Paper 32 and a redacted version as Paper 34. Patent Owner also filed a redacted version of Exhibits 2049 and 2050, but did not file a redacted version of Exhibit 2051. Petitioner did not file an opposition.

Petitioner filed a Motion to Seal Petitioner’s Reply and Exhibits 1036 and 1038–42 according to the agreed Protective Order and Supplemental Protective Order. Paper 47. Petitioner filed a complete version of its Reply as Paper 45 and a redacted version as Paper 48. Petitioner filed a redacted

version of Exhibits 1036 and 1038–40, but did not file a redacted version of Exhibits 1041 and 1042. Patent Owner did not file an opposition.

Patent Owner filed a Motion to Seal Patent Owner's Sur-Reply and Exhibit 2063 according to the agreed Protective Order and Supplemental Protective Order. Paper 54. Patent Owner filed a complete version of its Sur-Reply as Paper 53 and a redacted version as Paper 55. Patent Owner also filed a redacted version of Exhibit 2063. Petitioner did not file an opposition.

Petitioner filed a Motion to Seal Petitioner's Motion to Exclude according to the agreed Protective Order and Supplemental Protective Order. Paper 57. Petitioner filed a complete version of its Motion to Exclude as Paper 56 and a redacted version as Paper 63. Patent Owner did not file an opposition.

Patent Owner filed a Motion to Seal Patent Owner's Opposition to Petitioner's Motion to Exclude according to the agreed Protective Order and Supplemental Protective Order. Paper 62. Patent Owner filed a complete version of its Opposition as Paper 61 and a redacted version as Paper 64. Petitioner did not file an opposition.

Petitioner filed a Motion to Seal Petitioner's Reply in support of its Motion to Exclude according to the agreed Protective Order. Paper 66. Petitioner filed a complete version of its Reply as Paper 65 and did not file a redacted version. Patent Owner did not file an opposition.

Petitioner filed a Motion to Seal Petitioner's Demonstratives according to the agreed Protective Order and Supplemental Protective Order. Paper 69. Petitioner filed a public portion of its Demonstratives as Paper 68

and a confidential portion as Paper 67. Petitioner's motion seeks to seal Paper 67. Patent Owner did not file an opposition.

Patent Owner filed a Motion to Seal Patent Owner's Demonstratives according to the agreed Protective Order and Supplemental Protective Order. Paper 71. Petitioner filed a complete and a redacted version of its Demonstratives as Exhibit 2070. Petitioner did not file an opposition.

The record for an *inter partes* review shall be made available to the public, except as otherwise ordered, and a document filed with a motion to seal shall be sealed provisionally until the motion is decided. *See* 35 U.S.C. § 316(a)(1); 37 C.F.R. § 42.14. Additionally, "[a] party may file a motion to seal where the motion to seal contains a proposed protective order, such as the default protective order set forth in the Office Patent Trial Practice Guide." 37 C.F.R. § 42.54(a).

There is a strong public policy that favors making information filed in *inter partes* review proceedings open to the public. *See Garmin Int'l v. Cuozzo Speed Techs., LLC*, IPR2012-00001, Paper 34 at 1–2 (PTAB Mar. 14, 2013). The standard for granting a motion to seal is good cause. *See* 37 C.F.R. § 42.54(a). The Board has stated that

a movant to seal must demonstrate adequately that (1) the information sought to be sealed is truly confidential, (2) a concrete harm would result upon public disclosure, (3) there exists a genuine need to rely in the trial on the specific information sought to be sealed, and (4), on balance, an interest in maintaining confidentiality outweighs the strong public interest in having an open record.

Argentum Pharms. LLC v. Alcon Research, Ltd., IPR2017-01053, Paper 27 at 4 (PTAB Jan. 19, 2018) (informative) (citing 37 C.F.R. § 42.54(a)). The Consolidated Trial Practice Guide explains that "[t]he rules aim to strike a

balance between the public's interest in maintaining a complete and understandable file history and the parties' interest in protecting truly sensitive information." CTPG 19. Further, the moving party bears the burden of showing that the relief requested should be granted. *See* 37 C.F.R. § 42.20(c).

We have reviewed the redactions and we find that the parties have established good cause for the Motions to Seal. In particular, Patent Owner asserts that Exhibit 2051 contains non-public invention disclosure information relating to the '704 patent that is confidential business information reflecting internal invention development and documentation processes. Paper 33. We note that, as discussed, Exhibit 2069 is a corrected version of Exhibit 2051. Petitioner and Patent Owner assert that Patent Owner's Response, Petitioner's Reply, Patent Owner's Sur-Reply, Petitioner's Motion to Exclude, Patent Owner's Opposition to Petitioner's Motion to Exclude, Petitioner's Reply in support of its Motion to Exclude, Petitioner's Demonstratives, Patent Owner's Demonstratives, and Exhibits 1036, 1039, and 2049 refer to and include information from Exhibit 2051. Papers 33, 47, 54, 57, 62, 66, 69, 71. Petitioner additionally asserts that Exhibits 1041 and 1042 contain excerpts of non-public source code produced by a third party which requested confidentiality under the terms of the Supplemental Protective Order, discussed in Exhibit 1038, Exhibit 1040, and its Reply. Paper 33.

We are mindful that the non-public information in each case is that of a third party, produced according to our order granting third-party discovery in this case. *See* Paper 22. After balancing the public's interest in a complete and understandable file history with the third-party's interest in

protecting this information, we are persuaded that there is good cause to seal the information in Exhibits 1041, 1042, and 2051 and the information redacted from the documents filed discussing this information. Additionally, with respect to Exhibits 1038, 1040–1042, 2050, and the sealed version material in the Petitioner’s and Patent Owner’s Demonstratives, we do not rely on those exhibits in this Decision, and thus they do not add to the comprehensibility of the record.

Accordingly, for these reasons, and as detailed in the Motions, the parties have established good cause to seal the Patent Owner’s Response, Petitioner’s Reply, Patent Owner’s Sur-Reply, Petitioner’s Motion to Exclude, Patent Owner’s Opposition to Petitioner’s Motion to Exclude, the confidential portion of Petitioner’s Demonstratives (Paper 63), Patent Owner’s Demonstratives, and Exhibits 1036, 1038–1042, 2049–2051, and 2069.

As noted above, Petitioner and Patent Owner have agreed to the proposed Protective Order and Supplemental Protective Order. Paper 33. After review of these proposed protective orders, we find that entry of the proposed protective orders, Paper 33, Attachments A and B, is appropriate. Accordingly, we hereby enter Paper 33, Attachments A and B, as the Protective Order governing the treatment and filing and confidential information in this proceeding.

With respect to Petitioner’s Reply in Support of its Motion to Exclude (Paper 65), we note that while the Motion to Seal indicated a public version would be filed (Paper 66, 1–2), no such public version was filed. Thus, we will not rule on the Motion to Seal that paper at this time, but we order

Petitioner to file a public version of Paper 65 within 10 business days, and we will issue an order regarding that Motion in due course.

Additionally, the second portion of the transcript (Paper 73) of the oral hearing in this case was filed as Parties and Board only, and this Final Written Decision is being filed as Parties and Board only. Petitioner and Patent Owner are ordered to confer and to jointly file, within ten business days of this Decision, a motion to seal the second portion of the transcript and this Decision along with proposed redacted versions, in compliance with the Protective Order's agreement of the parties to use reasonable efforts to maintain the confidentiality of confidential information. A public version of this Final Written Decision and of Paper 73 will be issued after consideration of a motion to seal or expiration of the time period to file a motion to seal.

V. CONCLUSION

For the foregoing reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that any of claims 1–23 of U.S. Patent 6,728,704 B2 are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–3, 5–9, 11–14, 16–20, 22, 23	103	Bushee, Voorhees		1–3, 5–9, 11–14, 16–20, 22, 23
3, 4, 9, 10, 14, 15, 20, 21	103	Bushee, Voorhees, Koppel		3, 4, 9, 10, 14, 15, 20, 21
1–3, 5–9, 11–14, 16–20, 22, 23	103	Voorhees, Bushee, Tso		1–3, 5–9, 11– 14, 16–20, 22, 23
3, 4, 9, 10, 14, 15, 20, 21	103	Voorhees, Bushee, Tso, Koppel		3, 4, 9, 10, 14, 15, 20, 21
Overall Outcome				1–23

VI. ORDER

In consideration of the foregoing, it is hereby

ORDERED that claims 1–23 are not unpatentable based on the
instituted grounds of unpatentability;

FURTHER ORDERED that Petitioner’s Motion to Exclude is denied;

FURTHER ORDERED that the parties’ Motions to Seal are granted,
with the exception of Paper 66, Petitioner’s Motion to Seal Petitioner’s
Reply in support of its Motion to Exclude;

FURTHER ORDERED that Petitioner is ordered to file a public version of Paper 65, Petitioner's Reply in Support of its Motion to Exclude, within ten business days;

FURTHER ORDERED that Paper 33, Attachments A and B, are entered as protective orders governing the confidential information in this proceeding; and

FURTHER ORDERED that the parties are ordered to file, within ten business days of this Decision, a motion to seal this Decision in compliance with their duties having received confidential information from a third party under the agreed-upon Protective Order;

FURTHER ORDERED that the parties are ordered to file, within ten business days of this Decision, a motion to seal the second portion of the oral hearing transcript (Paper 73) in compliance with their duties having received confidential information from a third party under the agreed-upon Protective Order;

FURTHER ORDERED that a public version of this Decision will be issued in due course; and

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