

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,
Petitioner,

v.

THROUGHPUTER, INC.,
Patent Owner.

IPR2022-01566
Patent 11,036,556 B1

Before MICHAEL R. ZECHER, MATTHEW S. MEYERS, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

DIRBA, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

On November 7, 2022, Microsoft Corporation (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–8 of U.S. Patent No. 11,036,556 B1 (Ex. 1001, “the ’556 patent”). Paper 2 (“Pet.”). ThroughPuter, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). With our authorization (Paper 10), Petitioner filed a Preliminary Reply (Paper 11, “Prelim. Reply”), and Patent Owner filed a Preliminary Sur-Reply (Paper 12, “Prelim. Sur-Reply”).

An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . 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.” 35 U.S.C. § 314(a).

For the reasons given below, on this record, Petitioner has not established a reasonable likelihood that it would prevail in showing the unpatentability of at least one challenged claim. Accordingly, we do not institute an *inter partes* review of the ’556 patent.

I. BACKGROUND

A. Related Matters

The parties indicate that the ’556 patent has been asserted in *ThroughPuter, Inc. v. Microsoft Corp.*, No. 2:22-cv-00492-BJR (W.D. Wash.), which was consolidated with *ThroughPuter, Inc. v. Microsoft Corp.*, No. 2:22-cv-00344-BJR (W.D. Wash.). Pet. 76; Paper 4 (Patent Owner’s Mandatory Notices), 2. The parties also state that Petitioner has challenged other patents from that litigation in IPR2022-00527, IPR2022-00528, IPR2022-00574, IPR2022-00757, and IPR2022-00758. *Id.*

B. The Petition's Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 2):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4–8	103 ¹	Kupferschmidt ² , Tuan ³
1–8	103	Kupferschmidt, Tuan, Brent ⁴
4	103	Kupferschmidt, Tuan, Sandstrom-501 ⁵
4	103	Kupferschmidt, Tuan, Brent, Sandstrom-501

In support of its contentions, Petitioner relies on the testimony of Jeffrey S. Chase, Ph.D. (Ex. 1003) and June Ann Munford (Ex. 1007).

C. Summary of the '556 Patent

The '556 patent is titled “Concurrent Program Execution Optimization.” Ex. 1001, code (54). The application that led to the '556

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. The challenged patent was filed after March 16, 2013 and claims priority to applications filed after that date. As a consequence, we refer to the current version of the statute. *Accord* Pet. 2.

² US 2010/0333099 A1, published Dec. 30, 2010 (Ex. 1004).

³ Vu Manh Tuan, “A Study on a Multitasking Environment for Dynamically Reconfigurable Processors,” Doctoral Dissertation, School of Science for Open and Environmental Systems Graduate School of Science and Technology, Keio University (2009) (Ex. 1005).

⁴ US 2010/0131955 A1, published May 27, 2010 (Ex. 1006).

⁵ US 2012/0079501 A1, published Mar. 29, 2012 (Ex. 1010).

patent was filed on March 8, 2021, claiming priority to applications filed as early as August 23, 2013. *Id.* at (22), (60), (63).

The Specification is directed to “managing execution of multiple concurrent, multi-task software programs on parallel processing hardware.” Ex. 1001, 1:45–48. Figure 2 of the ’556 patent is reproduced below.

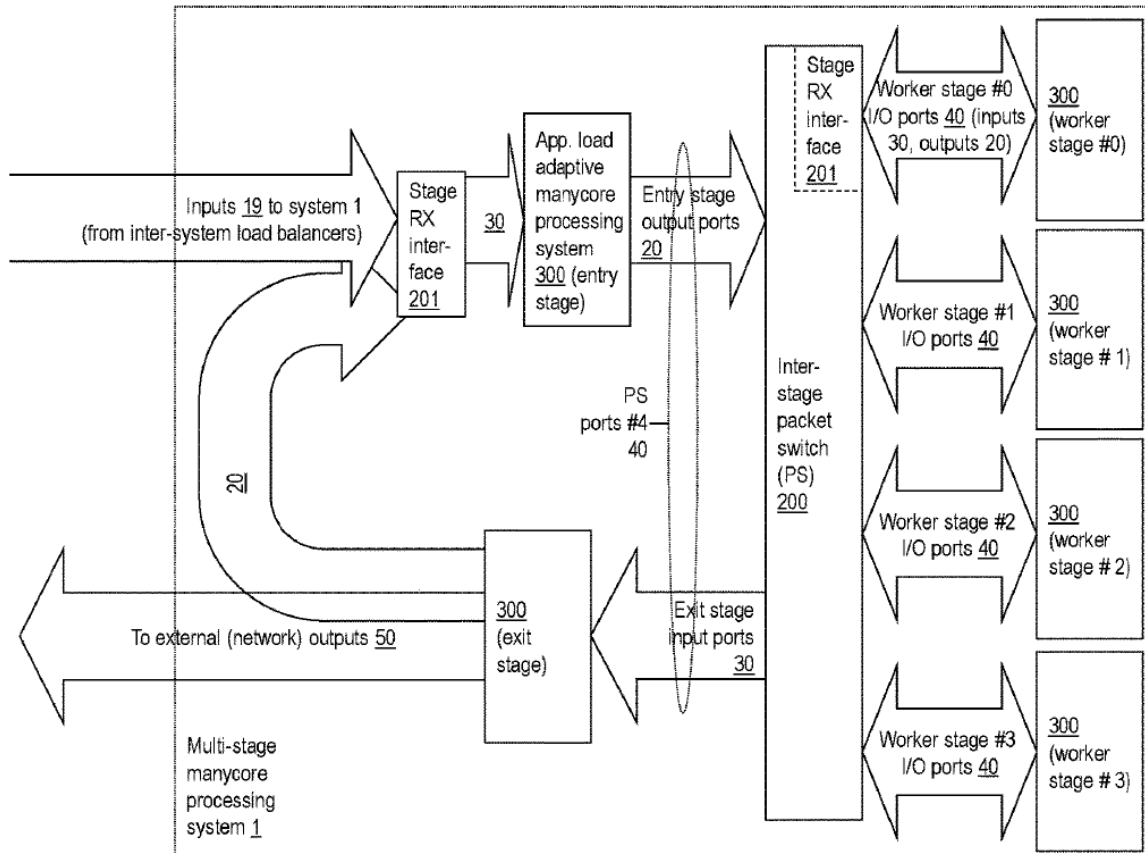


FIG. 2

Figure 2 is a functional block diagram of multi-stage manycore processing system 1, which is shared dynamically among tasks of multiple application programs (apps) and instances (insts) thereof. *Id.* at 5:18–21, 10:29–32. For each of the apps, each task is located at one of the processing stages 300. *Id.* at 10:32–33. Nevertheless, for any given app-inst, copies of same task

software can be located at more than one of the processing stages 300 of a given system 1, thus supporting any combination of pipelined and/or parallelized processing. *Id.* at 10:34–41. Hardware logic is implemented for scheduling tasks of application program instances and prioritizing inter-task communications (ITC) among tasks of a given app instance. *Id.* at 10:10–13.

D. Challenged Claims

Petitioner challenges all eight claims of the '556 patent. Of these, only claim 1 is independent. It recites:

1. A method performed in a data processing system, the method comprising:
 - receiving, by hardware logic and/or software logic, requests to perform different tasks on behalf of instances of a plurality of programs managed by a data processing system;
 - identifying, by the hardware logic and/or software logic for each of the instances, communication interdependencies between different processing stages of a set of processing stages of the respective instance;
 - based on conditions in the data processing system, dynamically varying, by the hardware logic and/or software logic, structures of field-programmable gate arrays used to process different tasks of the instances of the plurality of programs, the structures being dynamically varied by
 - identifying available field-programmable gate arrays of the data processing system that are available to process different processing stages of requesting instances of respective programs,
 - based at least on the conditions in the data processing system, identifying selected field-programmable gate arrays from the available field-programmable gate arrays to execute the different

processing stages of the requesting instances of the respective programs,

configuring the selected field-programmable gate arrays to process a respective processing stage of a respective requesting instance, and

configuring certain selected field-programmable gate arrays to support communicating, by the task executing on the respective field-programmable gate array, final results to a requesting client over a network in the data processing system.

Ex. 1001, 21:26–22:11.

II. ANALYSIS

A. Law on Obviousness

The legal 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; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

B. Level of Ordinary Skill in the Art

Petitioner asserts that the level of ordinary skill in the art corresponds to “a Master’s degree in computer science, computer engineering, or a related field, and 2–3 years of practical computer programming or engineering experience, including experience designing or researching

parallel processing systems.” Pet. 6 (citing Ex. 1003 ¶¶ 18–20). Patent Owner does not address the level of ordinary skill in the art. *See* Prelim. Resp.

On the present record, we are satisfied that Petitioner’s proposed definition generally comports with the level of skill necessary to understand and implement the teachings of the ’556 patent (*see* Ex. 1003 ¶ 19), and for purposes of this Decision, we adopt Petitioner’s proposed level of skill.

C. Obviousness Grounds Based on Kupferschmidt and Tuan

Petitioner relies on a combination of Kupferschmidt and Tuan for each of the grounds presented in the Petition. Pet. 2, 7–71. According to Petitioner, “Tuan is a doctoral dissertation” published in October 2009, over three years before the earliest possible priority date for the ’556 patent. *Id.* at 2, 10; Prelim. Reply 3–7. Patent Owner argues that Petitioner does not establish that Tuan qualifies as a printed publication. Prelim. Resp. 14–20; Prelim. Sur-Reply 4–7. For the reasons explained below, we agree with Patent Owner.

1. Legal Standard

For a reference to qualify as a printed publication, it “must have been sufficiently accessible to the public interested in the art.” *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (quoting *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989)). The touchstone is “public accessibility,” and this “is determined on a case-by-case basis based on the ‘facts and circumstances surrounding the reference’s disclosure to members of the public.’” *Id.* (quoting *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004); *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986)). “A given reference is

‘publicly accessible’ upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art[,] exercising reasonable diligence, can locate it.” *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008) (quoting *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006)).

“When a reference is uploaded to a website or deposited in a library, the fact that the reference is indexed or cataloged in some way can indicate that it is publicly accessible.” *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369 (Fed. Cir. 2019). “In certain situations, particularly for manuscripts or dissertations stored in libraries, courts may inquire whether a reference was sufficiently indexed, catalogued, and shelved.” *Hulu v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 9 (PTAB Dec. 20, 2019) (precedential). There is no strict requirement for indexing, searchability, cataloging, or shelving. *See, e.g., Samsung*, 929 F.3d at 1369; *Jazz Pharms., Inc. v. Amneal Pharms., LLC*, 895 F.3d 1347, 1359 (Fed. Cir. 2018). But it is “critical” that there be “some evidence that a person of ordinary skill could have reasonably found” the reference. *Samsung*, 929 F.3d at 1369. A reference “is not publicly accessible if the only people who know how to find it are the ones who created it.” *Id.* at 1372.

“[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication.” *Hulu*, IPR2018-01039, Paper 29 at 13. “[T]here is no

presumption in favor of institution or in favor of finding a reference to be a printed publication.” *Id.* at 16.

2. *The Parties’ Dispute*

Petitioner contends that Tuan, a doctoral dissertation, was published in the Keio University library in October 2009. Pet. 2, 10. To support this contention, Petitioner relies upon the testimony of Ms. Munford, “an experienced expert in library and information sciences.” *Id.* at 10 (citing Ex. 1007 ¶¶ 1–11, pp. 22–30). Ms. Munford testifies that she secured the MARC⁶ record for Tuan as held by the Keio University library, and she includes the MARC record and a certified translation of it as an appendix to her declaration. Ex. 1007 ¶ 10 (citing *id.* at 22–30). Ms. Munford also testifies that the “008 field” of this MARC record “indicates the Keio University library first acquired this dissertation as of October 1, 2009,” and from this, Ms. Munford testifies that Tuan “was made available to the public shortly after its initial acquisition in Fall 2009.” *Id.* ¶ 11. Petitioner submits that this date is consistent with the year on Tuan’s title page. Pet. 10 (citing Ex. 1005, 1).

Patent Owner contends that Petitioner fails to establish that Tuan qualifies as a printed publication for two independent reasons. Prelim. Resp. 14–20. First, Patent Owner argues that Petitioner fails to sufficiently show that the MARC record relates to the version of Tuan filed in this proceeding (i.e., Exhibit 1005) and, thus, that “Ms. Munford at best establishes that a *different* document that is not Ex. 1005 was available in 2008.” *Id.* at 15–17 (emphasis omitted and added). Second, Patent Owner

⁶ “MARC” is an acronym for Machine Readable Catalog. Ex. 1007 ¶ 5.

argues that, even if Petitioner shows technical availability, it fails to show public accessibility. *Id.* at 17–20; *see id.* at 19 (arguing that this “is a classic example of technical accessibility, which is insufficient to meet *Hulu*’s public accessibility requirement”) (citing *Hulu*, IPR2018-01039, Paper 29 at 10). According to Patent Owner, Petitioner fails to provide any explanation of how an ordinary artisan could have found Tuan with the exercise of reasonable diligence (*id.* at 18), and Petitioner fails to provide evidence to support such a finding (*id.* at 18–19).

3. *Analysis*

On this record, we agree with Patent Owner that Petitioner fails to provide evidence sufficient to show that Tuan (a doctoral thesis) was publicly accessible before the critical date, and as a result, we determine that Petitioner fails to sufficiently establish that Tuan qualifies as a printed publication. *See Hulu*, IPR2018-01039, Paper 29 at 13. For purposes of our analysis, we have assumed (without deciding) that all of Petitioner’s evidence relates to the same version of Tuan (i.e., Exhibit 1005), and we assume that Tuan was received by the Keio University library on October 1, 2009, as indicated by the MARC record located by Ms. Munford (*see* Ex. 1007, pp. 23–24).

We begin by observing that the Petition never squarely addresses whether Tuan was publicly accessible, and it also does not expressly contend that an ordinary artisan could have located Tuan with reasonable diligence. *See* Pet. 2, 10. Petitioner’s entire argument for qualifying Tuan as a printed publication is reproduced below:

Tuan is a doctoral dissertation titled “A Study on a Multitasking Environment for Dynamically Reconfigurable

Processors,” which published in 2009—i.e., some four years before the earliest possible priority date of the ’556 Patent. According to Ms. June Munford, an experienced expert in library and information sciences, Tuan “was made available to the public shortly after its initial acquisition [by the Keio University library] in Fall 2009.” Ms. Munford’s determination is supported by library records that demonstrate Keio University library’s acquisition of Tuan in October 2009, and is consistent with the year (2009) printed on Tuan’s title page.

Id. at 10 (citing Ex. 1003 ¶¶ 48–51; Ex. 1005, 1; Ex. 1007 ¶¶ 1–11, pp. 22–30). Although these contentions are relevant to Tuan’s *date*, they are not sufficient to establish its *accessibility* to an ordinary artisan. *See Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773 (Fed. Cir. 1998) (“‘[P]ublic accessibility’ requires more than technical accessibility.”).

We have considered the evidence Petitioner cites, but it also falls short. *See* Pet. 10. Petitioner points to Dr. Chase’s testimony and Tuan itself, but neither is probative of Tuan’s public accessibility—Dr. Chase simply summarizes the contents of Tuan (*see* Ex. 1003 ¶¶ 48–51), and Tuan itself has no conventional markers of publication (*see* Ex. 1005, 1). Petitioner also relies upon Ms. Munford’s declaration, but her testimony does not indicate that an ordinary artisan could have located Tuan with reasonable diligence. *See* Ex. 1007 ¶¶ 1–11, pp. 22–30. Ms. Munford testifies regarding her credentials (Ex. 1007 ¶¶ 1–5), provides background information on MARC records (*id.* ¶¶ 5–8), and states that she located the MARC record for Tuan from the library’s public catalog (*id.* ¶¶ 9–10). She also addresses Tuan’s date, stating:

The 008 field of the MARC record in Appendix TUAN01 indicates the date of record creation. The 008 field of Appendix TUAN01 indicates the Keio University library first

acquired this dissertation as of October 1, 2009. Considering this information, it is my determination that Exhibit 1005 *A Study on a Multitasking Environment for Dynamically Reconfigurable Processors* was made available to the public shortly after its initial acquisition in Fall 2009.

Id. ¶ 11; *see id.* at pp. 22–30 (Appendix TUAN01). Ms. Munford does not otherwise address Tuan, and Ms. Munford’s conclusory assertion that Tuan “was made available to the public” (*id.* ¶ 11) is insufficient. As our reviewing court has explained, it is “critical” that there be “some evidence that a person of ordinary skill could have reasonably found” the reference. *Samsung*, 929 F.3d at 1369; *see also id.* at 1372 (stating that a reference “is not publicly accessible if the only people who know how to find it are the ones who created it”). In other words, even assuming that Ms. Munford establishes Tuan was technically available to the public in October 2009, her testimony fails to support a finding that an ordinary artisan could have located Tuan with reasonable diligence.

In its Preliminary Reply, Petitioner relies on “the MARC . . . itself,” arguing that it “provides meaningful evidence of indexing and public accessibility.” Prelim. Reply 5–6. Petitioner’s argument is as follows:

For instance, the MARC record itself indicates that Tuan was “[a]vailable” and shelved at the “Main Building.” It further includes a range of searchable metadata including the title, author, and academic dissertation details. Tuan’s title is plainly descriptive of its subject matter, and would have ensured that the thesis could be readily accessed exercising reasonable diligence (e.g., a keyword search). The declaration even shows [the] webpage from which the MARC record was searched.

Id. at 6 (citing Ex. 1007, pp. 25–28; *Lister*, 583 F.3d at 1316; *M&K Holdings*, 985 F.3d at 1382). In addition, Petitioner contends that “[t]he specific function of MARC records is to provide searchable entries for

catalogued works in a library.” *Id.* at 6 n.2. Petitioner’s argument is not persuasive for several reasons.

First, Petitioner’s argument improperly conflates the MARC record itself with the website from which the MARC record was obtained. The Appendix at issue includes the MARC record itself (Ex. 1007, p. 23) and its translation (*id.* at p. 24), as well as a December 2021 screenshot of the library catalog used by Ms. Munford to obtain that record (*id.* at p. 25) and a translation of this screenshot (*id.* at pp. 26–29). *See also id.* pp. 25 (“screenshot-search.lib.keio.ac.jp-**2021.12.10**-07_29_47” (emphasis added)), 30 (translator’s certification attesting to translation of two documents); Prelim. Resp. 6 (“The declaration even shows [the] webpage from which the MARC record was searched.” (citing Ex. 1007, pp. 25–26)). In its Preliminary Reply, Petitioner cites the website screenshot when purporting to discuss “the MARC record itself” (Prelim. Reply 6 (citing Ex. 1007, pp. 25–28)), but the two are not the same (*compare* Ex. 1007 p. 23, *with id.* at p. 25).

This is important because the screenshot of the library catalog is dated December 2021 (Ex. 1007, p. 25), over eight years after the August 2013 critical date (*see* Pet. 2). Neither Petitioner nor Ms. Munford discuss the library catalog itself or the screenshot provided, and the record includes no evidence that the screenshot depicts an archived version of the library’s catalog. In fact, there is no evidence that this catalog (or a substantially similar one) existed on or before the critical date. Accordingly, we determine that the December 2021 screenshot (Ex. 1007, pp. 25–29) is not probative of whether Tuan was publicly accessible before the critical date. As a result, the evidence does not support Petitioner’s contention that Tuan

was “available” and shelved at the “Main Building” before the critical date, as this information is not apparent from the MARC record itself. Prelim. Reply 6 (cleaned up) (citing Ex. 1007, pp. 25–26); *see* Ex. 1007, p. 24.

Second, Petitioner’s speculation that an ordinary artisan might have found Tuan using a keyword search of the title field (*see* Prelim. Reply 6) is also unavailing. As Patent Owner observes, “Petitioner stops short of even providing attorney argument that Ex. 1005 could have been located through a keyword search in 2013.” Prelim. Sur-Reply 7. We agree. In our view, Petitioner’s vague reference to a keyword search is insufficient—it fails to explain *how* or *why* an ordinary artisan, exercising reasonable diligence, would have located Tuan. For example, Petitioner does not even propose a hypothetical keyword search that an ordinary artisan would have used. *Cf. Lister*, 583 F.3d at 1315–16 (finding public accessibility based on particular keyword search that would have yielded reference). This is problematic because Tuan’s title appears to have only two terms that could be relevant to such a search: “multitasking” and “dynamically reconfigurable processors.” Ex. 1007, p. 24. Petitioner does not explain why an ordinary artisan would have searched for both of these terms, and we question whether a search for only one of them would yield an excessive number of results.

Moreover, Petitioner fails to provide evidence that would support such an argument. The record includes no evidence that a keyword search of the title field could have been performed at the time. Although the library catalog allowed a “search” in December 2021 (*see* Ex. 1007, pp. 25–26 (“New search”)), there is no evidence regarding *any* search functionality before the critical date, over eight years prior. We are tempted to assume that at least one of the MARC fields would have been searchable at the

relevant time—the MARC record is, by definition, “Machine Readable” (Ex. 1007 ¶ 5)—but there is no evidence that any software (such as an online catalog) allowed a *keyword* search on the *title* field of the MARC records before the critical date.⁷ It is not our role to assume facts not in evidence. Rather, it is Petitioner’s burden to “identify, *with particularity*, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date.” *Hulu*, IPR2018-01039, Paper 29 at 13 (emphasis added).

Finally, Petitioner argues that previous Board decisions “have repeatedly sustained publication evidence based on MARC records and similar librarian analyses to those offered by Ms. Munford.” Prelim. Reply 7. We disagree. Petitioner cites four non-precedential Board decisions in support of its argument, but each is readily distinguishable. In the decision discussed by Petitioner, the Board did not find a MARC record alone sufficient to show public accessibility, as Petitioner suggests (*id.*), but rather determined that three articles published in conference proceedings were publicly accessible given “the indicia of publication and public accessibility on the face of each of the references, availability of the references on the IEEE website, and the cataloguing of the Proceedings for each of the papers in various libraries.” *Intel Corp. v. FG SCR LLC*, IPR2020-01449, Paper 13 at 43–44 (PTAB Mar. 3, 2021); *see id.* at 39–41, 43. For two other decisions, the disputed issue was whether the petitioner had sufficiently shown that an article was actually included in a conference’s

⁷ *Cf. Lister*, 583 F.3d at 1315 (indicating that, in the mid-1990s, the Copyright Office’s automated, electronic catalog “could only be searched by either the author’s last name or the first word of the title of the work”).

proceedings, and it appears the patent owner did not dispute that the conference proceedings themselves were publicly accessible. *Nearmap US, Inc. v. Eagle View Techs., Inc.*, IPR2022-01009, Paper 7 at 18–19 (PTAB Dec. 14, 2022); *Apple Inc. v. AliveCor, Inc.*, IPR2022-00872, Paper 7 at 34–35 (PTAB Nov. 10, 2022). The final decision addressed a different issue (i.e., whether the MARC record submitted by petitioner was for a different version of the document), and the document itself was a book with indicia of publication including a publisher and ISBN information. *Microchip Tech. Inc. v. Bell Semiconductor, LLC*, IPR2021-00148, Paper 19 at 28–30 (PTAB May 14, 2021). As a result, none of these four decisions support Petitioner’s contention that a MARC record (showing, at best, a library’s receipt of the document before the critical date) is sufficient by itself, without additional explanation or evidence, to show that a doctoral thesis was publicly accessible at that time.

4. Conclusion

For the reasons explained above, we determine that Petitioner fails to identify, with particularity, evidence sufficient to establish a reasonable likelihood that Tuan was publicly accessible before the critical date. *See Hulu*, IPR2018-01039, Paper 29 at 13. As a result, we determine that Petitioner fails to show a reasonable likelihood that Tuan qualifies as a printed publication. *See id.*

Each of the grounds presented in the Petition relies on a combination of Kupferschmidt and Tuan (Pet. 2), so we determine that Petitioner has not shown a reasonable likelihood that it will prevail with respect to its assertions that claims 1–8 would have been unpatentable over the proposed

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combinations of Kupferschmidt and Tuan. As a consequence, we do not institute an *inter partes* review.

III. ORDER

It is ORDERED that the Petition is denied and no *inter partes* review is instituted.

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