

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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JUNIPER NETWORKS, INC.,  
Petitioner,

v.

SWARM TECHNOLOGY LLC,  
Patent Owner.

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IPR2021-01445  
Patent 9,852,004 B2

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Before MICHAEL R. ZECHER, GREGG I. ANDERSON, and  
SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

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

## INTRODUCTION

### *A. Background and Summary*

Juniper Networks, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review (“IPR”) of claims 1–12 of U.S. Patent No. 9,852,004 B2 (Ex. 1001, “the ’004 patent”). Paper 1 (“Pet.”). Swarm Technology LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 11, “Pet. Prelim. Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 13, “PO Prelim. Sur-reply”).

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). *Inter partes* review may not be instituted unless “the information presented in the petition filed under section 311 and any response filed under section 313 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) (2018). “When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a) (2021).

For the reasons set forth below, upon considering the briefing and the evidence of record, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner will prevail with respect to at least one of the challenged claims. Accordingly, we institute *inter partes* review on all of the challenged claims based on all of the grounds identified in the Petition.

*B. Real Parties in Interest*

Petitioner identifies itself as the real party in interest (“RPI”). Pet. ix. Petitioner also states that it “will update its mandatory notices to identify Apstra [Inc.] as an RPI, if the Board determines that Apstra should be named as an RPI.” Pet. Prelim. Reply 3.

Patent Owner identifies itself as the RPI. Paper 5, 1 (Patent Owner’s Mandatory Notices).

*C. Related Matters*

The parties identify the following district court proceedings involving the ’004 patent: (1) *Juniper Networks, Inc. v. Swarm Technology LLC*, No. 3:20-cv-03137-JD (N.D. Cal.) and (2) *Swarm Technology, LLC v Amazon.com, Inc.*, 2:21-cv-00438-DJH (D. Az.). Pet. ix; Paper 5, 1.

Patent Owner also identifies an additional patent and patent application that claims or may claim the benefit of the filing date of the ’004 patent. Paper 5, 2.

*D. The ’004 Patent*

The ’004 patent is titled “System and Method for Parallel Processing Using Dynamically Configurable Proactive Co-Processing Cells” and is generally directed to “a processing architecture which involves autonomous co-processors configured to proactively retrieve tasks from a task pool populated by a central processing unit.” Ex. 1001, code (54), 1:14–18.

According to the ’004 patent, “[c]omputer processors traditionally execute machine coded instructions serially. To run a plurality of applications concurrently, a single processor interleaves instructions from various programs and executes them serially, although from the user’s perspective the applications appear to be processed in parallel.” Ex. 1001, 1:42–47. The ’004 patent further states that “[t]rue parallel or multi-core

processing, on the other hand, is a computational approach that breaks large computational tasks into individual blocks of computations and distributes them among two or more processors.” *Id.* at 1:47–50. “A typical multiprocessor system includes a central processing unit (‘CPU’) and one or more co-processors. The CPU partitions the computational requirements into tasks and distributes the tasks to co-processors. Completed threads are reported to the CPU, which continues to distribute additional threads to the co-processors as needed.” *Id.* at 1:56–61.

The ’004 patent identifies a problem with using the CPU to control the distribution of tasks:

Presently known multiprocessing approaches are disadvantageous in that a significant amount of CPU bandwidth is consumed by task distribution; waiting for tasks to be completed before distributing new tasks (often with dependencies on previous tasks); responding to interrupts from co-processors when a task is completed; and responding to other messages from co-processors. In addition, co-processors often remain idle while waiting for a new task from the CPU.

Ex. 1001, 1:61–2:3. The ’004 patent addresses that problem using a system that reduces CPU management overhead and which “more effectively harnesses and exploits available co-processing resources.” *Id.* at 2:4–7.

Figure 1 of the '004 patent is reproduced below.

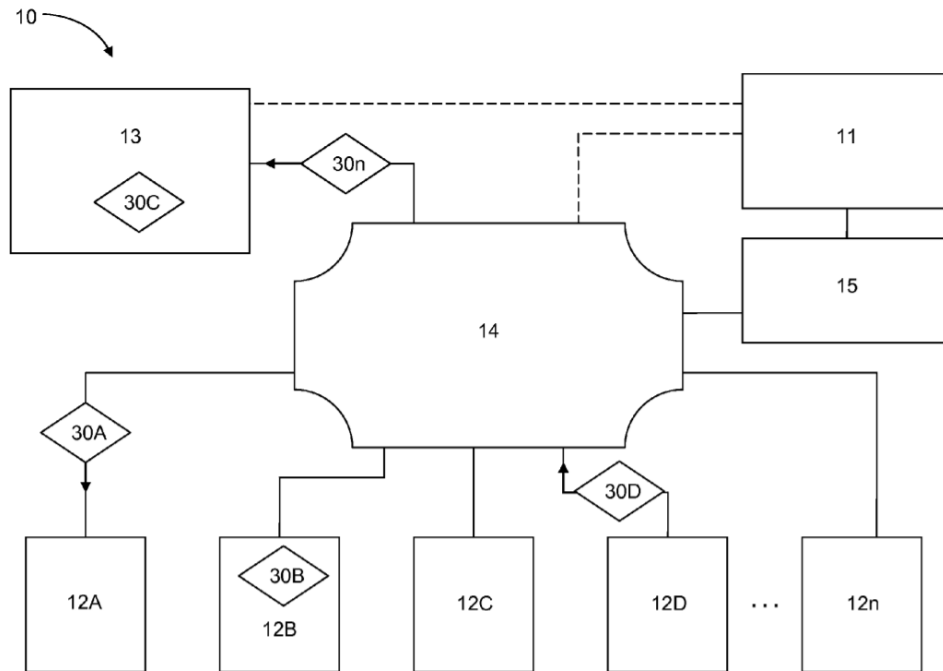


FIG. 1

Figure 1 “is a schematic block diagram of a parallel processing architecture including a CPU, memory, task pool, and a plurality of co-processors configured to communicate through a fabric.” Ex. 1001, 3:56–59. More specifically, Figure 1 shows “a single or multi-core CPU 11 and one or more solidarity or co-processing cells 12A-12[n] configured to communicate with a task pool 13 through a cross-bar switching fabric 14. The solidarity cells 12 may also communicate with each other through the switching fabric 14 or through a separate cell bus (not shown).” *Id.* at 4:30–36. “The CPU 11 may communicate with the task pool 13 directly or through the switching fabric 14 as shown. One or more memory units 15 each contain data and instructions” to perform computations. *Id.* at 4:36–39.

*E. Illustrative Claim*

Claims 1 and 3 are independent. Claim 1, reproduced below, is illustrative of the claimed invention.

1. A processing system, comprising:

a task pool;

a controller configured to populate the task pool with a plurality of first tasks and a plurality of second tasks;

a first co-processor configured to successively: retrieve a first task from the task pool; deliver the first task to the first co-processor; process the first task; generate first resulting data; and update the task pool to reflect completion of the first task, all without any communication between the first co-processor and the controller; and

a second co-processor configured to successively: retrieve a second task from the task pool; deliver the second task to the second co-processor; process the second task; generate second resulting data; and update the task pool to reflect completion of the second task, all without any communication between the second co-processor and the controller;

wherein the processing system is configured to dynamically accept the first co-processor, the second co-processor, and an additional co-processor into the processing system on a plug-and-play basis without any communication with the controller.

Ex. 1001, 14:10–32.

*F. Prior Art and Asserted Grounds*

Petitioner asserts that claims 1–12 would have been unpatentable based on the following grounds:

| Claim(s) Challenged | 35 U.S.C. § <sup>1</sup> | Reference(s)/Basis                                        |
|---------------------|--------------------------|-----------------------------------------------------------|
| 1–12                | 103(a)                   | Leong, <sup>2</sup> AppleTalkBook <sup>3</sup>            |
| 3–12                | 103(a)                   | Leong, AppleTalkBook, Ethernet Specification <sup>4</sup> |
| 9                   | 103(a)                   | Leong, AppleTalkBook, Bates <sup>5</sup>                  |
| 9                   | 103(a)                   | Leong, AppleTalkBook, Ethernet Specification, Bates       |

Petitioner also relies on the testimony of Dr. Jon B. Weissman (Ex. 1003 (Declaration of Dr. Weissman)) and Sylvia D. Hall-Ellis, Ph.D. (Ex. 1018 (Declaration of Dr. Hall-Ellis)).

## ANALYSIS

### *A. Legal Standards*

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under 35 U.S.C. § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and

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<sup>1</sup> The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Because the ’004 patent claims the benefit of the priority date of U.S. Patent Application No. 13/750,696, which was filed before March 16, 2013, and neither party has argued that the provisions of the AIA apply, we apply the pre-AIA versions of the statutory bases for unpatentability. *See* Ex. 1001, code (63).

<sup>2</sup> US 6,006,249, issued Dec. 21, 1999 (Ex. 1005).

<sup>3</sup> Rogers, M., & Bare, V. (1989). *Hands-on AppleTalk*. Brady Books (Ex. 1006). All citations are to the page numbers added by Petitioner.

<sup>4</sup> The Ethernet, A Local Area Network, Data Link Layer and Physical Layer Specifications, dated Sept. 30, 1980 (Ex. 1007). All citations are to the native pagination.

<sup>5</sup> US 2007/0074207, published Mar. 29, 2007 (Ex. 1008).

(4) if in evidence, “secondary considerations” of non-obviousness such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. “While the sequence of these questions might be reordered in any particular case,” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the U.S. Court of Appeals for the Federal Circuit has repeatedly emphasized that “it is error to reach a conclusion of obviousness until all those factors are considered,” *WBIP v. Kohler*, 829 F.3d 1317, 1328 (Fed. Cir. 2016).<sup>6</sup>

*B. Level of Ordinary Skill in the Art*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The “person having ordinary skill in the art” is a hypothetical construct, from whose vantage point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing

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<sup>6</sup> Because neither party address objective evidence of non-obviousness, we focus solely on the first three *Graham* factors.

*Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). “Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case.” *Id.*

Petitioner argues that a person having ordinary skill in the art “would have had a bachelor’s degree in computer science, electrical engineering, computer engineering, or a closely related field, and one or more years of experience in the design and development of parallel or distributed processing systems.” Pet. 11. Petitioner alternatively argues that a person having ordinary skill in the art “would have a master’s degree or similar post-graduate work in computer science, electrical engineering, computer engineering, or a closely related field, and less design and development experience.” *Id.* (citing. Ex. 1003 ¶¶ 62–67).

Patent Owner does not address the level of skill in the art. *See* Prelim. Resp.

Accordingly, for purposes of this Decision, we adopt Petitioner’s proposed formulation of the level of ordinary skill in the art, except that we delete the qualifier “or more” to eliminate vagueness as to the amount of practical experience. The qualifier expands the range indefinitely without an upper bound, and thus, precludes a meaningful indication of the level of ordinary skill in the art.

### *C. Claim Construction*

We apply the same claim construction standard used in the federal courts, in other words, the claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under the *Phillips* standard, the “words

of a claim ‘are generally given their ordinary and customary meaning,’” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312–13.

Petitioner states that “[f]or the purposes of this proceeding, Petitioner construes all terms as having their ordinary and customary meanings.” Pet. 11–12.

Patent Owner does not address claim construction. *See* Prelim. Resp. For purposes of this Decision, we need not expressly construe any claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*D. Alleged Failure to Name All Real Parties in Interest*

Patent Owner argues that Petitioner failed to name various entities as RPIs. Prelim. Resp. 2–16; PO Prelim. Sur-reply 1–2. These entities include Amazon.com, Inc., and Amazon Web Services, Inc., (collectively, “Amazon”), Apstra, Inc. (“Apstra”), Cisco, Arista, RPX, Intel, Oracle, Qualcomm, HP, AMD, Amtel, Google, Nest, Apple, and NVIDIA. Prelim. Resp. 2–16. Specifically, Patent Owner argues that Amazon was originally named as a RPI in a related IPR and Patent Owner is asserting the ’004 patent against both Amazon and Petitioner. *Id.* at 3–5. Patent Owner also argues that Apstra is a subsidiary of Petitioner and was added as a necessary party to Petitioner’s declaratory judgment action seeking a declaration of no infringement. *Id.* at 11–14. Patent Owner also argues that Petitioner had “secret communications and behind-the scenes coordination with several

parties having a vested interest in the validity of the '004 Patent.” *Id.* at 14; *see also id.* at 14–16 (discussing communications and the parties).

With respect to Amazon, Patent Owner further argues this proceeding is factually distinguishable from the one in our precedential decision, *SharkNinja Operating LLC v. iRobot Corp.*, IPR2020-00734, Paper 11 (PTAB Oct. 6, 2020) (precedential). First, Patent Owner argues that unlike *SharkNinja*, which was an omission, this case involves Petitioner affirmatively naming Amazon in a related case and then unname Amazon. Prelim. Resp. 9. Second, Patent Owner argues Petitioner has not offered to correct its Mandatory Notices to include Amazon. *Id.* Third, Patent Owner argues that “[u]nlike in *SharkNinja*, where the omitted real party-in-interest was simply the corporate parent of the petitioner, Amazon is a major customer of Juniper and is presently a defendant in a separate patent infringement litigation involving the '777 patent in Arizona.” *Id.* at 9–10. Fourth, Patent Owner argues that unlike in *SharkNinja*, “the evidence in this case suggest that Amazon was removed as a real party-in-interest in these IPRs to gain an improper legal advantage” by avoiding the statutory estoppel provision of 35 U.S.C. § 315(e)(2). *Id.* at 10.

Petitioner argues that none of entities identified by Patent Owner “are time barred or estopped from challenging the '004 Patent, as none were accused of infringing in a litigation more than a year before the petition’s filing.” Pet. Prelim. Reply 2 (citing Ex. 1019). According to Petitioner, under *SharkNinja*, this should end Patent Owner’s challenge. *Id.* at 1–2.

*SharkNinja* holds that the Board need not consider whether an unnamed party is a RPI when the addition of that party “would not create a time bar or estoppel under 35 U.S.C. § 315.” *SharkNinja*, Paper 11 at 18. In reaching that conclusion, the Board recognized that, even if the omitted

party was an unnamed RPI, “our jurisdiction to consider a petition does not require a ‘correct’ identification of all RPIs in a petition” and the petitioner would have been able to add the omitted party. *Id.* (citing *Lumentum Holdings, Inc. v. Capella Photonics, Inc.*, IPR2015-00739, Paper 38 at 6 (PTAB Mar. 4, 2016) (precedential); *Blue Coat Sys., Inc. v. Finjan, Inc.*, IPR2016-01444, Paper 11 at 10 (PTAB July 18, 2017); *Mayne Pharma Int’l Pty. Ltd. v. Merck Sharp & Dohme Corp.*, 927 F.3d 1232, 1240 (Fed. Cir. 2019)). Because the failure to name a RPI in those circumstances does not bar the proceeding, not considering the RPI issue “better serves the interest of cost and efficiency.” *Id.* at 20.

In this case, Patent Owner has not argued that the addition of any of the alleged omitted RPIs to the Petition would create, in this proceeding, a time bar under 35 U.S.C. § 315(b) or estoppel under 35 U.S.C. § 315(e)(1).<sup>7</sup> Nor do we find any of the reasons given by Patent Owner to distinguish this case from *SharkNina* persuasive. Although the facts of this case are not identical to those in *SharkNinja*, none of those differences go to the heart of *SharkNinja*’s holding: “cost and efficiency.” Accordingly, based on *SharkNinja* and in the interests of efficiency and controlling costs, we do not consider whether any of the fifteen identifies entities should have been named as RPIs.

*E. Alleged Failure to Identify All Related Matters*

Patent Owner argues that we should deny institution because Petitioner failed to accurately identify a co-pending litigation and failed to

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<sup>7</sup> Any potential estoppel in a civil action or other proceeding, under 35 U.S.C. § 315(e)(2), would not arise until after “an inter partes review . . . that results in a final written decision.” Any future estoppel in another proceeding has no bearing on the outcome of this proceeding.

identify another patent and a patent application that share the same effective filing date as the '004 patent. Prelim. Resp. 17–18 (citing 37 C.F.R. § 42.8).

We are not persuaded that we should decline to institute for those reasons. First, Petitioner has offered to “stipulate to [Patent Owner’s] September 16, 2021 Section 42.8(b)(2) Related Matters and/or update its Mandatory Notices to identify those matters.” Pet. Prelim. Reply 4–5. This cures all of the alleged deficiencies. *See* Paper 5, 1–2.

Second, Patent Owner has not identified any case where we have declined to institute for this reason. To the contrary, our precedent holds that other formalities under 35 U.S.C. § 312(a),<sup>8</sup> such as the identification of the RPI, are not jurisdictional and can be cured. *Lumentum Holdings, Inc. v. Capella Photonics, Inc.*, IPR2015–00739, Paper 38 (PTAB Mar. 4, 2016) (precedential).

Third, we see no error in the identification of the co-pending litigation. We have no rule that requires the listing of every party in a caption, and the inclusion of the names of multiple entities—as Patent Owner requires—is inconsistent with proper Blue Book citation.

*F. Discretionary Denial under 35 U.S.C. § 325(d)*

*1. Legal Standard*

Patent Owner urges us to exercise our discretion to deny institution of trial under 35 U.S.C. § 325(d). Prelim. Resp. 19–29. Under § 325(d), we have discretion to deny a petition that presents the same or substantially the

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<sup>8</sup> Section 312(a) of the United States Code requires, *inter alia*, that the Petition must include “such other information as the Director may require by regulation.” Our regulations require that the Petition must “[i]dentify any other judicial or administrative matter that would affect, or be affected by, a decision in the proceeding.” 37 C.F.R. §42.8.

same prior art or arguments as previously presented to the Office. In evaluating whether the factual predicate under § 325(d) is met, we consider a number of non-exclusive factors, as set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (Institution Decision) (precedential as to Section III.C.5, first paragraph) (“the *Becton Dickinson* factors”):

(a) the similarities and material differences between the asserted art and the prior art involved during examination;

(b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

*Becton, Dickinson*, IPR2017-01586, Paper 8 at 17–18.

In performing an analysis under § 325(d), “the Board uses the following two-part framework:

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. . . . If, after review of [*Becton, Dickinson*] factors (a), (b), and (d), it is determined that the same or substantially the same art or

arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.

*Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8, 10 (PTAB Feb. 13, 2020) (Institution Decision) (precedential) (footnote omitted). Consequently, we first turn to an analysis of *Becton Dickinson* factors (a), (b), and (d) to determine whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.

2. *Part One of the Advanced Bionics Analysis*

*Becton Dickinson* factors (a), (b), and (d) require us to determine, respectively: (a) “the similarities and material differences between the asserted art and the prior art involved during examination;” (b) “the cumulative nature of the asserted art and the prior art evaluated during examination,” and (d) “the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.” *Becton, Dickinson*, IPR2017-01586, Paper 8 at 17.

a) *Leong*

Patent Owner argues that Leong is substantially the same as Bates, which was considered during the prosecution of the '004 patent. Prelim. Resp. 21–22, 26–28. Patent Owner’s argument consists of an annotated figure showing the purported similarity of features and the following paragraph:

Like Leong, Bates discloses a plurality of processing units (104) connected via a memory bus to a memory (106) containing a task queue (114). Bates at 2–3, ¶¶ 0032–0033, 0036. Like

Leong, Bates discloses that the plurality of processing units 104 select tasks from the task queue. Bates at 6, ¶ 0057. Petitioner's use of Leong throughout the Petition mirrors Examiner Rashid's use of Bates throughout prosecution of the '004 Patent. (*See* Ex. 1002).

*Id.* at 27–28; *see also* PO Prelim. Sur-Reply 3–4 (referencing comparison figures).

We are not persuaded by Patent Owner's argument that Leong and Bates are substantially the same. The issue is not just whether the same elements can be found in each of the references, but whether the elements function the same way. That is, even though Leong and Bates have the same elements, that does not mean that the elements interact with each other the same way or perform the same functions as recited in the claims. Because Patent Owner does not provide a sufficiently detailed explanation as to how both Leong and Bates operate, Patent Owner has not sufficiently shown that Leong and Bates are substantially the same.

Patent Owner also argues that Leong is substantially the same as Inoue (U.S. Patent Publication No. 2005/0188372 A1). Prelim. Resp. 23. However, Inoue is not an exhibit to this proceeding, and Patent Owner improperly references the arguments made in another proceeding. *See* Prelim. Reply 23. We do not consider evidence not submitted in the record. Accordingly, Patent Owner has not sufficiently shown that Leong is substantially the same as Inoue.

*b) AppleTalkBook and Ethernet Specification*

Patent Owner argues that AppleTalkBook is cumulative of DeMent<sup>9</sup> and Tozlu.<sup>10</sup> Prelim. Resp. 21–22. Patent Owner also argues that Ethernet Specification is cumulative of Bates, DeMent, and Tozlu. *Id.*

Patent Owner’s argument consists of the following sentence: “Even assuming, *arguendo*, the authenticity of the AppleTalkBook reference, both it and the Ethernet Standard – as well as Petitioner’s related arguments – are merely cumulative of the art and arguments previously considered by the Office.” Prelim. Resp. 28.

We do not find Patent Owner’s conclusory argument persuasive. Nor has Patent Owner submitted evidence (such as DeMent and Tozlu) to support its argument.

*3. Conclusion*

Because we find that the evidence of record demonstrates that *Becton Dickinson* factors (a), (b), and (d) have not been satisfied, we find that the same or substantially the same art or arguments were not previously presented. Thus, our analysis ends at this point, and we need not proceed to step two of the *Advanced Bionics* framework. *See Advanced Bionics*, IPR2019-01469, Paper 6 at 8. We consequently decline to exercise our discretion to deny institution based on 35 U.S.C. § 325(d).

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<sup>9</sup> Patent Owner identifies DeMent as U.S. Patent Publication No. 2008/0168318. Prelim. Resp. 22. DeMent is not of record in this proceeding.

<sup>10</sup> Patent Owner identifies Tozlu as “Wi-Fi Enabled Sensors.” Prelim Resp. 22. Tozlu is not of record in this proceeding.

*G. Asserted Obviousness in View of Leong and AppleTalkBook*

Petitioner argues that claims 1–12 would have been obvious over Leong and AppleTalkBook. *See* Pet. 12–78. Based on the current record, we are sufficiently persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted obviousness ground with respect to at least one of claims 1–12.

*1. Summary of Leong*

Leong is titled “Method and Apparatus for Concurrent Data Processing” and is directed “to multi-tasking systems employing networked stand alone and independently operating micro-processing units each of which perform one or more tasks for manipulating electronic data.” Ex. 1005, code (54), 1:7–11. Leong states it is an improvement on prior art multi-tasking computing systems which used a CPU coupled to a plurality of processing units. *Id.* at 1:19–24, Fig. 1.

Leong Figure 2 is reproduced below.

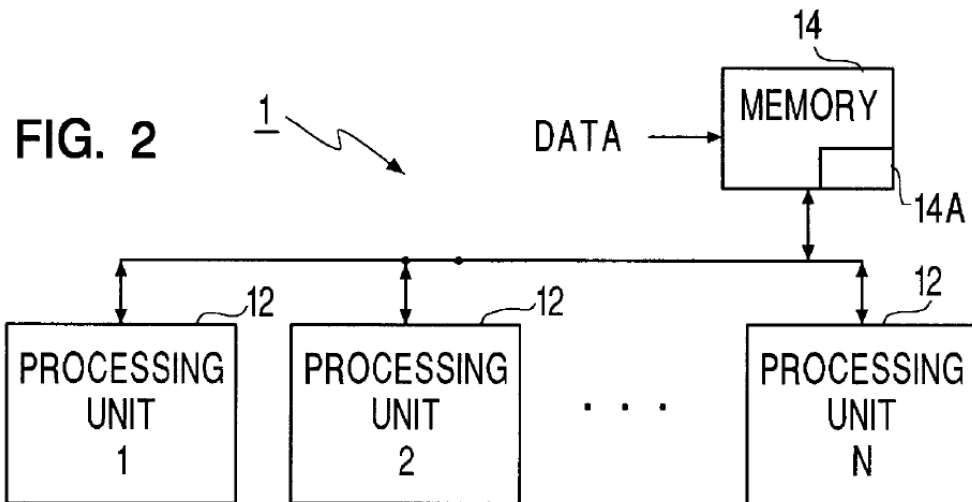


Figure 2 “is a block diagram of a multi-tasking computing system.”

Ex. 1001, 2:14–16. Each processing unit 12 “is self controlled using a software application running on its own operating system” and “there is no

central management and/or control unit.” *Id.* at 2:43–48. The one or more processing units 12 determine which tasks need to be performed and posts status information about the tasks on the bulletin board 14. *Id.* at 4:9–16. Additionally, each processing unit 12 is capable of reading the tasks on the bulletin board and executing tasks that it is capable of performing. *Id.* at 3:6–18.

## 2. *Summary of AppleTalkBook*

AppleTalkBook describes itself as “a practical book” that “is about the process of choosing and using an AppleTalk network.” Ex. 1006, 11. Relevant to this proceeding, AppleTalkBook discusses “dynamic configuration.” *Id.* at 104–10. Dynamic configuration refers to the “self-configuring, ‘automatic’ nature of AppleTalk” and is characterized by each device having the ability to pick its own unique network address and the ability of devices “to look up across the network and identify, at any given time, what resources are available.” *Id.* at 105.

## 3. *Admissibility of AppleTalkBook*

Patent Owner challenges the admissibility of AppleTalkBook based on the best evidence rule.<sup>11</sup> Prelim. Resp. 28. Specifically, Patent Owner argues that Petitioner has not provided a true copy of AppleTalkBook and, without such a copy, it is impossible to determine if Exhibit 1006 is missing any pages or has otherwise been altered.

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<sup>11</sup> Patent Owner does not cite the rule by that name or Federal Rule of Evidence 1002. However, Patent Owner’s challenge is based on the lack of an original document with which to compare the copy submitted as evidence, thus implicating the best evidence rule. *See* Fed. R. Evid. 1002 (“An original writing, recording, or photograph is required in order to prove its content unless these rules or a federal statute provides otherwise.”).

This argument is premature. Our regulations set forth a specific procedure governing rulings on the admissibility of evidence during a trial; namely, a party must object to such evidence within prescribed time frames after trial is instituted (37 C.F.R. § 42.64(b)(1)), the proffering party may then respond by serving supplemental evidence (37 C.F.R. § 42.64(b)(2)), and the objecting party must preserve its objection by filing a motion to exclude (37 C.F.R. § 42.64(c)), which then provides the proffering party the opportunity to file a responsive brief addressing the admissibility of the evidence. Significantly, each of these activities take place after institution of an IPR.

Here, Patent Owner has asserted in its Preliminary Response that certain evidence is inadmissible. Petitioner, however, has not yet had the opportunity to respond to the challenges raised by Patent Owner and by providing supplemental evidence as provided in 37 C.F.R. § 42.64(b)(2). Thus, it would be premature and improper for us to dismiss wholesale Petitioner's evidence at this stage of the proceeding. Provided that Patent Owner timely objects to the admissibility of Petitioner's evidence in accordance with our regulations, we will address such objection at the procedurally appropriate time.

#### *4. Status of AppleTalkBook as Prior Art*

Patent Owner further argues that Petitioner “has not demonstrated that [AppleTalkBalk] was publicly available in 1989 or at any time prior to 25 January 2013.” Prelim Resp. 28.

In determining whether Petitioner has sufficiently shown a reference is a printed publication in the Petition, we turn to *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 (PTAB Dec. 20, 2019) (precedential). In *Hulu*, the Board held that, “at 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.” Paper 29 at 13. In making that determination, “the indicia on the face of a reference, such as printed dates and stamps, are considered as part of the totality of the evidence.” *Id.* at 17–18. “The Board has often found a reasonable likelihood that a reference is a printed publication for institution of an *inter partes* review when the evidence relied on in a petition provides strong indicia that an asserted reference was publicly accessible.” *Id.* at 18. “Conversely, the Board has found evidence insufficient on this issue for institution of an *inter partes* review when a petitioner’s evidence of indicia was weak.” *Id.* at 19.

AppleTalkBook indicates that it was published by Brady Books, has a copyright date of 1989, and an ISBN of 0-13-039678-9. Ex. 1006, 3–4. Petitioner has also offered unrebutted declaration testimony that AppleTalkBook was publicly available prior to January 25, 2013. Ex. 1018 ¶¶ 26, 47–53. Based on the indicia on the title page and the unrebutted declaration testimony, we find that Petitioner has met its burden to demonstrate that AppleTalkBook qualifies as a prior art printed publication to the ’004 patent. As with all other findings and conclusions in this Decision, this determination is preliminary.

## 5. *Analysis of Claim 1*

### a) *Undisputed Limitations*

The preamble of claim 1 recites “[a] processing system.” Ex. 1001, 14:10. Petitioner argues Leong teaches the preamble. Pet. 21–22. Specifically, Petitioner argues Leong teaches a processing apparatus

including several processing units associated with a bulletin board. *Id.* at 21 (citing Ex. 1005, Fig. 2; Ex. 1003 ¶ 75).<sup>12</sup>

Claim 1 further recites “a task pool.” Ex. 1001, 14:11. Petitioner argues Leong teaches this limitation. Pet. 22–23. Specifically, Petitioner argues Leong teaches an electronic bulletin board which resides in memory. *Id.* at 22 (citing Ex. 1005, 3:9–11; Ex. 1003 ¶ 80). Petitioner also argues that “Leong’s processing units read the bulletin board contents when seeking additional tasks.”<sup>13</sup> *Id.* (citing Ex. 1005, 3:9–18; Ex. 1003 ¶ 80); *see also id.* at 22–23.

Claim 1 further recites “a first co-processor configured to successively: retrieve a first task from the task pool; deliver the first task to the first co-processor; process the first task; generate first resulting data; and update the task pool to reflect completion of the first task.” Ex. 1001, 14:14–20. Petitioner argues Leong teaches that limitation. Pet. 29–34. Specifically, Petitioner argues a person having ordinary skill in the art would have understood the Leong’s processors correspond to the claimed co-processors. *Id.* at 29. According to Petitioner, each of Leong’s processors “seek tasks for execution, retrieve tasks from the bulletin board, process the task, generate resulting data, and change the status of the task to complete in

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<sup>12</sup> On the current record, there is no dispute that Leong teaches a processing system. Accordingly, for purposes of institution, we need not decide whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017 (noting that “we need only construe terms ‘that are in controversy’” (quoting *Vivid*, 200 F.3d at 803)).

If Patent Owner argues that Leong does not teach a processing system in the Response, the parties must address whether the preamble is limiting.

<sup>13</sup> Petitioner uses color to denote various elements. All coloring has been removed from the quotes.

the bulletin board.” *Id.* at 32 (citing Ex. 1005, 3:32–35, 3:55–61, 6:47–50, 7:1–4, 7:34–52, Fig. 7C; Ex. 1003 ¶¶ 97–98).

Claim 1 further recites “a second co-processor configured to successively: retrieve a second task from the task pool; deliver the second task to the second co-processor; process the second task; generate second resulting data; and update the task pool to reflect completion of the second task.” Ex. 1001, 14:21–27. Petitioner argues Leong teaches that limitation. Pet. 34–35. Specifically, Petitioner relies on essentially the same evidence and arguments described above regarding the “first co-processor” limitation to explain how Leong teaches the “second co-processor” limitation. *Id.*

Claim 1 further recites “wherein the processing system is configured to dynamically accept the first co-processor, the second co-processor, and an additional co-processor into the processing system on a plug-and-play basis without any communication with the controller.” Ex. 1001, 14:28–32. Petitioner argues that the combination of Leong and AppleTalkBook teaches this limitation. Pet. 35–41. Specifically, Petitioner argues Leong teaches the need for a “readily scalable” computer system in which the number of processing units available to execute a given task changes. *Id.* at 35–36 (citing Ex. 1005, 1:44–52, 4:30–61, 5:26–35; Ex. 1003 ¶¶ 105–106). According to Petitioner, a person having ordinary skill “would have . . . investigated techniques to introduce new processing units to Leong’s bulletin board with as little configuration as possible to use the available processing capacity.” *Id.* at 36–37 (citing Ex. 1005, 6:4–14; Ex. 103 ¶ 107).

Petitioner further argues that a person having ordinary skill in the art would have considered using plug-and-play technology like that taught in AppleTalkBook so that there “is no need for manual configuration to add new processing units.” Pet. 37–39 (citing Ex. 1003 ¶ 110); *see also*

Ex. 1006, 104–105, 108–109 (discussing how AppleTalkBook works); Pet. 37–38 (same). According to Petitioner, implementing AppleTalkBook’s teaching into Leong’s system creates a plug-and-play system that “would have resulted in no manual system configuration being necessary and the bulletin board automatically connecting to the added processing unit.” Pet. 39 (citing Ex. 1003 ¶ 111). Petitioner further argues that such a modification would have had a “reasonable expectation of success.” *Id.* at 39–40 (citing Ex. 1003, 5:21–25; Ex. 1006, 126–130; Ex. 1003 ¶ 112).

After reviewing Petitioner’s arguments and information, including the Weismann Declaration (Ex. 1003), which Patent Owner does not address at this stage (*see* Prelim. Resp.), we are persuaded that Petitioner sufficiently demonstrates, for purposes of this Decision, that the combination of Leong and AppleTalkBook teaches all of the undisputed limitations recited in claim 1 and that a person having ordinary skill in the art would have combined the teachings of Leong and AppleTalkBook with a reasonable expectation of success.

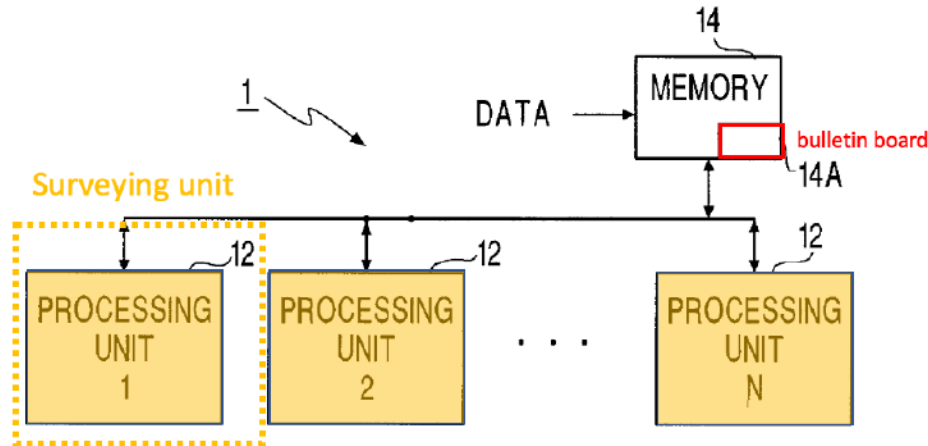
*b) A Controller Configured to Populate the Task Pool with a Plurality of First Tasks and a Plurality of Second Tasks.”*

*(1) The Parties’ Arguments*

Claim 1 further recites “a controller configured to populate the task pool with a plurality of first tasks and a plurality of second tasks.” Ex. 1001, 14:12–13.

Petitioner argues Leong teaches that limitation. Pet. 24–28. Specifically, Petitioner argues that the processing units can “change [their] behavior and ‘survey’ the queue in memory to determine whether new data has arrived” and, when there is new data, “the processing units determine tasks to be performed on the data, define status information for the tasks, and

post status information for the tasks on the bulletin board.” *Id.* at 25 (citing Ex. 1005, 4:10–11, 6:36–46, 9:1–4, 9:42–45, Figs 3, 5, 6; Ex. 1003 ¶ 86). Specifically, as shown in an annotated version of Leong Figure 2 reproduced below, Petitioner identifies “processing unit 1” as the surveying unit and maps that processor to the recited “controller. *Id.* at 25–26.



Leong FIG. 2 (Annotated)

Pet. 26. Leong Figure 2 “is a block diagram of a multi-tasking computing system.” Ex. 1005, 2:14–16. Petitioner annotated Figure 2 to identify the bulletin board as part of memory 14 and the various processing units in yellow. Pet. 26. Petitioner also identifies “Processing Unit 1” as the “surveying unit.” *Id.* According to Petitioner, the surveying unit posts the plurality of tasks to the bulletin board. *Id.* at 26–28.

Patent Owner argues that “Leong accomplishes [its] goal by completely removing the Central Managing Unit from the computing system.” PO Resp. 34–35 (citing Ex. 1005 Fig. 2, 2:47–48). According to Patent Owner, “[w]hen read in its proper light, Leong not only fails to teach a controller of the type found in the ’004 patent, but Leong expressly teaches away from incorporating such a controller into the claimed system.” *Id.* at 35 (emphasis omitted).

(2) *Our Analysis*

Although Leong teaches away from using a centralized controller, it does not teach away from a processor performing some of the tasks that a centralized controller would perform. To the contrary, as Petitioner argues, Leong explicitly teaches that one or more of Leong's processors—which Petitioner refers to as the “surveying unit”—will determine when new data has arrived, determine what tasks need to be performed, and then populate the bulletin board—which is mapped to the task pool—with those tasks:

It is preferred that one or more micro-processing units 12 be predisposed as agents to “survey” the queue in memory 14 to determine whether new data has arrived. When new data has arrived in the memory 14, the surveying agents 12 determine what task(s) need to be performed on the data and define the status information for those tasks. The surveying agents 12 then post the status information for the tasks on the bulletin board 14a.

Ex. 1005, 4:9–16. Thus, although Leong teaches away from a centralized controller that manages all aspects of the tasks, it explicitly teaches using that surveying agent to perform the tasks required by the controller in claim 1. That is, based on the current record, we are sufficiently persuaded that Leong's first processor—which Petitioner calls the “surveying agent”—performs the functions of the recited controller.

Patent Owner's argument is based on semantics: because Leong does not have a processor called a controller, then Leong does not teach the controller recited in claim 1. Based on the current record, we disagree. There is no requirement in an obviousness analysis for the prior art to “contain a description of the subject matter of the appealed claim in *ipsissimis verbis*.” *In re May*, 574 F.2d 1082, 1090 (CCPA 1978).

Accordingly, based on the current record, Petitioner sufficiently shows that Leong teaches “a controller configured to populate the task pool

with a plurality of first tasks and a plurality of second tasks” as recited in claim 1.

*c) “Without Any Communication”*

Claim 1 further recites that the “first co-processor” and the “second-coprocessor” limitations perform their recited functions “without any communication between the [first/second] co-processor and the controller.” *See* Ex. 1001, 14:14–27.

*(1) The Parties’ Arguments*

Petitioner argues that because Leong teaches “that the processing units ‘are not under the control of a central management computer or program,” Leong’s processors “are . . . independent and autonomous co-processors.” Pet. 30 (quoting Ex. 1005, 5:66–6:3) (citing Ex. 1005 2:38–48; Ex. 1003 ¶ 93); *see also id.* at 34. According to Petitioner, “the processing units perform [their] functions without any communication with the specialized surveying agent (i.e., controller).” Pet. 34 (citing Ex. 1003 ¶ 99); *see also id.* (making the same argument for the “second co-processor” limitation).

Patent Owner argues that “[c]laim 1 of the ’004 Patent includes the distinct and separate elements of ‘a controller’ and respective first and second co-processors.” Prelim. Resp. 33. According to Patent Owner, “[i]n order to make its argument of obviousness, the Petition advances various contradictory positions regarding Leong’s ‘processing units.’” *Id.* Specifically, Patent Owner argues that Petitioner identifies the Leong’s processors as both the controller and the co-processors. *Id.* at 33–34. Patent Owner also argues that “[t]he foregoing positions are contradictory (if not mutually exclusive) because Leong’s processing units cannot simultaneously

act as both the controller and a co-processor which does not require any instruction from the controller.” *Id.* at 34.

(2) *Our Analysis*

Based on the current record, there is no dispute that each of Leong’s processors retrieve tasks from the bulletin board, process the task at the processor to generate resulting data, and update the bulletin board to reflect the completion of the task without communicating with a different processor. *See* Ex. 1005 Figs. 7A–7C, 6:47–8:8; Prelim Resp. 33–34. Instead, Patent Owner’s argument focuses on whether Petitioner mapped the same functional element (a processing unit) to different structural limitations (the controller and the various co-processors). Prelim Resp. 33–34.

Claim 1 lists four separate elements: (1) a controller, (2) a task pool, (3) a first co-processor, and (4) a second co-processor. Ex. 1001, 14:10–32, 14:42–15:36. “Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.”” *Becton Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004)); *see also Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1404–05 (Fed. Cir. 1996) (concluding that where a claim provides for two separate elements, a “second portion” and a “return portion,” these two elements “logically cannot be one and the same”). There is nothing in the asserted claims to suggest that the controller can be the same structure as the first or second co-processors. *See CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings.”).

Moreover, the specification of the '004 patent confirms that the controller and the first and second co-processors are separate elements. Figure 1 of the '004 patent shows CPU 11—the controller—as a distinct and separate element from co-processing cells 12. Additionally, there is nothing in the specification to indicate that co-processing cell 12 can be used to populate the task pool by dividing the requirement into one or more threads and placing the threads in the task pool. *See* Ex. 1001, 7:7–14. In short, the specification comports with the plain language of the claims, fully supporting the conclusion that the controller and the first and second co-processors are separate structural components of the patented invention. *See Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1336 (Fed. Cir. 2004) (“A long line of cases indicates that evidence intrinsic to the patent—particularly the patent’s specification, including the inventors’ statutorily-required written description of the invention—is the primary source for determining claim meaning.”); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (The specification is “is the single best guide to the meaning of a disputed [claim] term.”).

Unlike in IPR2021-01317, Petitioner did not map two structural limitations to the same structure. As shown in the annotated version of Leong Figure 2, reproduced earlier, Petitioner identifies a specific processor—processing unit 1—as performing the task of the recited controller. Pet. 26. Petitioner further identifies the processing units generically as the first and second co-processors. *Id.* at 29–35. Thus, processing unit 2 can be considered the first co-processor and processing unit n as the second processing unit. *See* Pet. 26 (reproducing Leong Figure 2). Based on the current record, Petitioner has identified different structural elements for each of the structural limitations recited in claim 1.

According, based on the current record, Petitioner sufficiently shows that Leong teaches a first processor which performs its functions “without any communication between the first co-processor and the controller” and a second processor which performs its functions “without any communication between the second co-processor and the controller” as recited in claim 1.

*d) Conclusion Regarding Claim 1*

For the reasons set forth above, Petitioner has demonstrated, on this record, a reasonable likelihood of prevailing on its assertion that claim 1 would have been obvious over Leong and AppleTalkBook.

*6. Claims 2–12*

Because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '004 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See* 37 C.F.R. 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge in this ground, especially as Patent Owner has not presented any responsive argument beyond that addressed above for claim 1.

Nevertheless, we note that Petitioner provides detailed explanations supported by the testimony of Dr. Weissman and specific citations to the relevant references indicating where in the reference Petitioner argues the limitations of claims 2–12 are taught and why a person of ordinary skill in the art would have combined the various teachings of Leong and AppleTalkBook. *See* Pet. 41–78. Accordingly, at this stage of the proceeding, we are persuaded the information presented in the Petition establishes there is a reasonable likelihood that Petitioner would prevail on its assertion that claims 2–12 would have been obvious over Leong and AppleTalkBook.

*H. Asserted Obviousness in View of Leong, AppleTalkBook, and Ethernet Specification*

Petitioner argues that claims 3–12 would have been obvious over Leong and Ethernet Specification. *See* Pet. 78–81. Based on the current record, we are sufficiently persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted obviousness ground with respect to at least one of claims 3–12.

*1. Ethernet Specification*

Ethernet Specification “contains the specification of the Ethernet, a local area network.” Ex. 1007, i. Ethernet Specification “is intended as a design reference document, rather than an introduction or tutorial.” *Id.*

Relevant to Petitioner’s argument, chapter 6 provides the “Ethernet Data Link Layer Specification.” Ex. 1007, 19–44. Figure 6-1 is reproduced below.

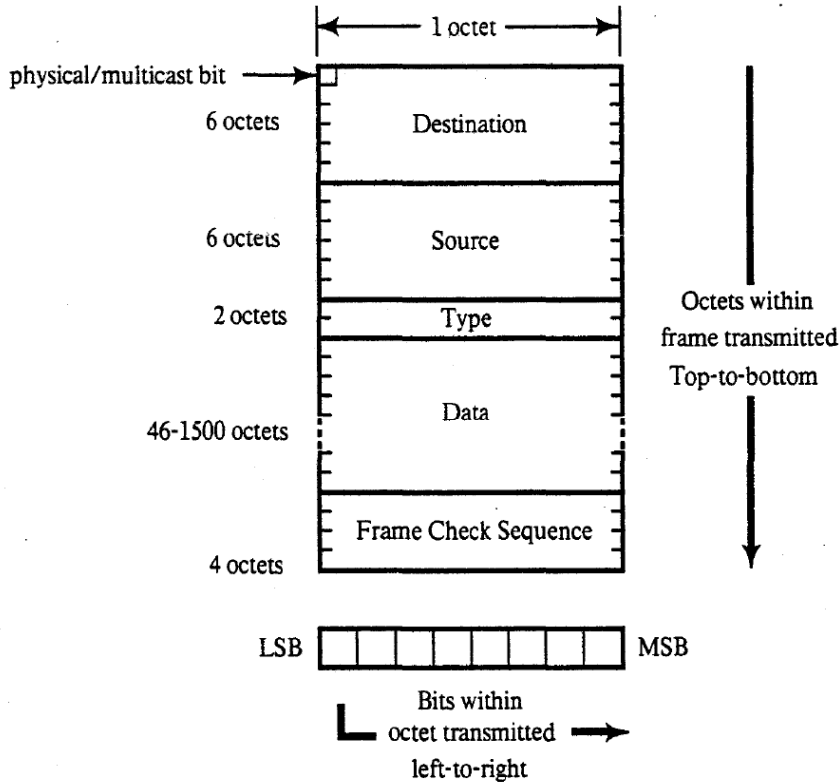


Figure 6-1: Data Link Layer Frame Format

Ex. 1007, 20. Figure 6-1 depicts a “Data Link Frame Format” which includes a destination, source, type, data, and frame check sequence. *Id.*

## 2. Analysis of Claims 3–12

As discussed above, because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’004 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge raised by Petitioner, especially as Patent Owner has not presented any additional argument not previously discussed. *See Prelim. Resp.*

Nevertheless, we note that Petitioner provides detailed explanations supported by the testimony of Dr. Weissman and specific citations to the relevant references indicating where in the reference Petitioner argues the

limitations of claims 3–12 are taught and why a person of ordinary skill in the art would have combined the various teachings of Leong, AppleTalkBook, and Ethernet Specification. *See* Pet. 78–81. Accordingly, at this stage of the proceeding, we are persuaded the information presented in the Petition establishes there is a reasonable likelihood that Petitioner would prevail on its assertion that claims 3–12 would have been obvious over Leong, AppleTalkBook, and Ethernet Specification.

*I. Asserted Obviousness in View of (1) Leong, AppleTalkBook, and Bates and (2) Leong, AppleTalkBook, Ethernet Specification, and Bates*

Petitioner argues that claim 9 would have been obvious over (1) Leong, AppleTalkBook, and Bates and (2) Leong, AppleTalkBook, Ethernet Specification, and Bates. *See* Pet. 81–86. Based on the current record, we are sufficiently persuaded that Petitioner has established a reasonable likelihood of prevailing on both asserted obviousness grounds with respect to claim 9.

*1. Bates*

Bates is titled “SPU [synergistic processing units] Task Manager for Cell Processor” and is generally directed “to parallel processing and more particularly to managing tasks in cell processors.” Ex. 1008, code (54), ¶ 6.

Bates teaches a “[c]ell processor task management in a cell processor having a main memory, one or more power processor units (PPU) and one or more synergistic processing units (SPU), each SPU having a processor and a local memory is described.” Ex. 1007, code (57). Both the PPU and SPU can add tasks to the task queue. *Id.* ¶ 36. The SPUs can automatically get more tasks whenever they run out. *Id.* ¶ 42.

2. *Analysis of Claim 9*

As discussed above, because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '004 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge raised by Petitioner, especially as Patent Owner has not presented any responsive argument directed to the additional limitation set forth in claim 9. *See* Prelim. Resp.

Nevertheless, we note that Petitioner provides detailed explanations supported by the testimony of Dr. Weissman and specific citations to the relevant references indicating where in the reference Petitioner argues the limitation of claim 9 is taught and why a person of ordinary skill in the art would have combined the various teachings of Leong, AppleTalkBook, and Bates, both with and without Ethernet Specification. *See* Pet. 81–86. Accordingly, at this stage of the proceeding, we are persuaded the information presented in the Petition establishes there is a reasonable likelihood that Petitioner would prevail on its assertion that claim 9 would have been obvious over both (1) Leong, AppleTalkBook, and Bates and (2) Leong, AppleTalkBook, Ethernet Specification, and Bates.

CONCLUSION

Following § 314, we have determined that the totality of the information presented at this stage shows there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition, and we institute on all grounds raised and all claims challenged in the Petition.

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record

developed thus far. This is not a final decision as to the patentability of claims for which IPR is instituted. Our final decision will be based on the record as fully developed during trial.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, an IPR of all challenged claims of the '004 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '004 patent is hereby instituted commencing on the entry date of this Decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

IPR2021-01445  
Patent 9,852,004 B2

FOR PETITIONER:

Joseph F. Edell  
Kyle K. Tsui  
FISCH SIGLER LLP  
Joe.Edell.IPR@fischllp.com  
kyle.tsui@fischllp.com

FOR PATENT OWNER:

Daniel Pote  
JENNINGS STROUSS & SALMON PLC  
p@jsslaw.com  
dpote@hsslaw.com

Michael K. Kelly  
BEUS GILBERT MCGRODER PLLC  
mkelly@beusgilbert.com