

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.,
Petitioner,

v.

SWARM TECHNOLOGY LLC,
Patent Owner.

IPR2022-00141
Patent 10,592,275 B2

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

ZECHER, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining No Challenged Claims Unpatentable

Dismissing Patent Owner's Revised Contingent Motion to Amend

35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner, Juniper Networks, Inc. (“Juniper”), filed a Petition requesting an *inter partes* review (“IPR”) of claims 1–7 and 9–17 of U.S. Patent No. 10,592,275 B2 (Ex. 1001, “the ’275 patent”). Paper 1 (“Pet.”). Patent Owner, Swarm Technology LLC (“Swarm”), filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). With our authorization, Juniper filed a Preliminary Reply (Paper 11) and Swarm filed a Preliminary Sur-reply (Paper 12), each of which were narrowly tailored to address the real party in interest (“RPI”) and 35 U.S.C. § 325(d) arguments raised in Swarm’s Preliminary Response. Taking into account the arguments presented in Swarm’s Preliminary Response, Juniper’s Preliminary Reply, and Swarm’s Preliminary Sur-reply, we determined that the information presented in the Petition established that there was a reasonable likelihood that Juniper would prevail with respect to challenging at least one of claims 1–7 and 9–17 of the ’275 patent as unpatentable. Pursuant to 35 U.S.C. § 314, we instituted this IPR on May 16, 2022, as to all challenged claims and all grounds raised in the Petition. Paper 14 (“Institution Decision” or “Dec. on Inst.”).

During trial, Swarm filed a Patent Owner Response (Paper 17, “PO Resp.”), Juniper filed a Reply to the Patent Owner Response (Paper 20, “Pet. Reply”), and PNC filed a Sur-reply to the Reply (Paper 24, “PO Sur-reply”). With our authorization (Paper 41), Swarm filed an additional brief (Paper 46, “PO Addt’l Brief”) and Juniper filed an additional brief (Paper 49, “Pet. Addt’l Brief”), each of which were tailored narrowly to address the following two issues: (1) whether the combination of Leong and AppleTalkBook teaches or suggest adding a co-processor “on a plug-and-

play basis without any communication with the controller,” as recited in each of independent claims 1, 6, and 11 of the ’275 patent; and (2) whether the deficiencies noted in the Final Written Decision in IPR2021-01445 equally apply to Juniper’s proposed combination of Leong and AppleTalkBook as set forth in the Petition filed in this proceeding.

After receiving Preliminary Guidance (Paper 22) from the panel regarding Swarm’s Contingent Motion to Amend (Paper 18), Swarm filed a Revised Contingent Motion to Amend (Paper 23), Juniper filed an Opposition to the Revised Contingent Motion to Amend (Paper 33), Swarm filed a Reply to the Opposition to the Revised Contingent Motion to Amend (Paper 44), and Juniper filed a Sur-reply to the Reply to the Opposition to the Revised Contingent Motion to Amend (Paper 48). In addition, an oral argument was held on March 16, 2023, and a transcript of the hearing is included in the record. Paper 52 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–7 and 9–17 of the ’275 patent. For the reasons we identify below, we hold that Juniper has not demonstrated by a preponderance of the evidence that all challenged claims are unpatentable. As a result, we *dismiss* Swarm’s Revised Contingent Motion to Amend as moot.

A. Real Parties in Interest

Juniper identifies itself as the only RPI. Paper 7, 1 (Juniper’s Updated Mandatory Notices). Swarm identifies itself as the only RPI. Paper 9, 1 (Swarm’s Updated Mandatory Notices).

B. Related Matters

The parties identify the following two district court cases involving the '275 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.*, No. 2:21-cv-00438-DJH (D. Az.). Paper 7, 1; Paper 42, 3 (Swarm's Updated Mandatory Notices). In addition to this proceeding, Swarm identifies the '275 patent as the subject of IPR2022-00633 filed by Amazon.com, Inc. and Amazon Web Services, Inc. Paper 42, 3. Swarm also identifies the following patents or patent application that claim or may claim the benefit of the earliest effective filing date—January 25, 2013—of the '275 patent: (1) U.S. Patent No. 9,852,004 B2 (“the '004 patent”), (2) U.S. Patent No. 9,146,777 B2 (“the '777 patent”), and (3) U.S. Patent Application No. 16/788,122. Paper 42, 3–4. Swarm identifies the '004 patent as the subject of IPR2021-01445 and the '777 patent as the subject of IPR2021-01317. Prelim. Resp. 3–4.

C. The '275 Patent

The '275 patent is titled “System and Method for Swarm Collaborative Intelligence Using Dynamically Configurable Proactive Autonomous Agents,” issued from U.S. Patent Application No. 15/852,480 (“the '480 application”), filed on December 22, 2017. Ex. 1001, codes (54), (21), (22). The '480 application is a continuation of U.S. Patent Application No. 14/340,332, filed on July 24, 2014—now the '004 patent—which, in turn, is a continuation of U.S. Patent Application No. 13/750,696 (“the '696 application”), filed on January 25, 2013—now the '777 patent. *Id.* at code (63), 1:8–13.

The '275 patent generally is directed to “parallel-process computing, and collaborative intelligence, and particularly relates to a processing architecture which involves autonomous co-processors (such as robotic vehicles, Internet of Things (IoT) components, and networked devices) configured to proactively retrieve tasks from a task pool populated by a central processing unit [(“CPU”)].” Ex. 1001, 1:16–24. According to the '275 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.” *Id.* at 1:49–54. The '275 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 1:54–57. “A typical multiprocessor system includes a [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 1:63–2:1.

The '275 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, 2:1–10. The '275 patent purportedly addresses this problem using a system that reduces CPU management overhead, and “more effectively harnesses and exploits available co-processing resources.” *Id.* at 2:11–15.

Figure 1 of the '275 patent is reproduced below.

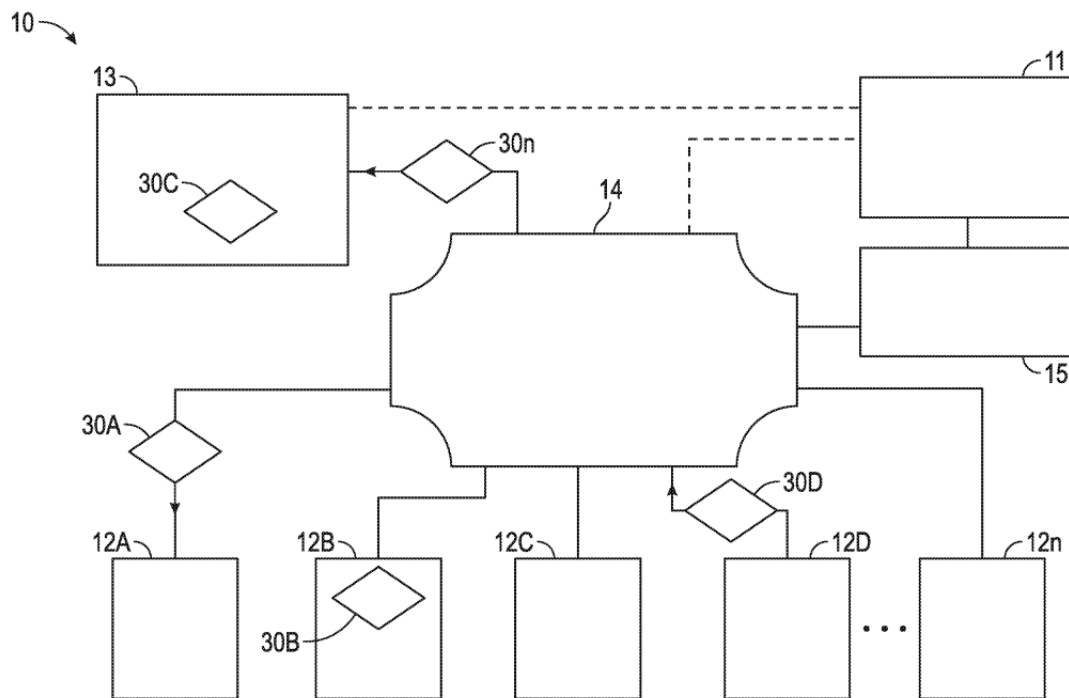


FIG. 1

Ex. 1001, 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.” *Id.* at 3:64–67. More specifically, Figure 1 shows the following:

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 4:43–49. “CPU 11 may communicate with the task pool 13 directly or through the switching fabric 14. One or more memory units 15 each contain data and/or instructions.” *Id.* at 4:49–52.

C. Challenged Claims

Of the challenged claims, claims 1, 6, and 11 are independent. Independent claims 1 and 6 are each directed to “[a] collaborative intelligence system,” whereas independent claim 11 is directed to “[a] method of using collaborative intelligence to achieve an objective.” Ex. 1001, 14:24, 15:8, 16:25–26. Claims 2–5 directly depend from independent claim 1; claims 7, 9, and 10 directly or indirectly depend from independent claim 6; and claims 12–17 directly depend from independent claim 11. *Id.* at 14:50–15:7, 16:8–11, 16:17–24, 16:42–64. Independent claim 1, reproduced below, is illustrative of the challenged claims.

1. A collaborative intelligence 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: proactively retrieve a first task from the task pool; 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: proactively retrieve a second task from the task pool; 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 collaborative intelligence 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;

the plurality of first tasks and the plurality of second tasks are associated with a common objective;

the first and second co-processors autonomously work together in solidarity with the task pool to complete the common objective.

Id. at 14:24–49.

D. Asserted Prior Art References

Juniper relies on the prior art references set forth in the tables below.

Name¹	Reference	Dates	Exhibit No.
Leong	U.S. Patent No. 6,006,249	issued Dec. 21, 1999; filed Aug. 19, 1997	1005

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

Printed Publication	Exhibit No.
Mike Rogers & Virginia Bare, <i>Hands-on AppleTalk</i> (1989) (“AppleTalkBook”). All citations are to the page numbers added by Juniper in the bottom, right-hand corner of each page.	1006
The Ethernet: A Local Area Network, Data Link Layer and Physical Layer Specifications (Sept. 30, 1980) (“Ethernet Specification”). All citations are to the native pagination in the top, left-hand or the top, right-hand corner of each page.	1007
Dinesh Datla et al., <i>Wireless Distributed Computing: A Survey of Research Challenges</i> , IEEE Communications Magazine, Jan. 2012, at 144–52 (“Datla”). All citations are to the page numbers added by Juniper in the bottom, right-hand corner of each page.	1019

E. Asserted Grounds of Unpatentability

Juniper asserts that claims 1–7 and 9–17 of the ’275 patent would have been unpatentable based on the grounds set forth in the table below. Pet. 3, 12–86.

Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
1–7, 9–17	103(a)	Leong, AppleTalkBook
1–7, 9–17	103(a)	Leong, AppleTalkBook, Ethernet Specification
16	103(a)	Leong, AppleTalkBook, Datla
16	103(a)	Leong, AppleTalkBook, Ethernet Specification, Datla

² 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 ’275 patent claims the benefit of the priority date of the ’696 application, 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).

Juniper supports its arguments in the Petition with the testimony of Dr. Jon B. Weissman (Ex. 1003 (Declaration of Dr. Weissman in support of Petition)) and Sylvia D. Hall-Ellis, Ph.D. (Ex. 1018 (Declaration of Dr. Hall-Ellis)). Juniper supports its arguments in the Reply with the testimony of Dr. Weissman. Ex. 1031 (Declaration of Dr. Weissman in support of the Reply). Swarm supports its arguments in the Patent Owner Response with the testimony of Dr. Brent Nelson. Ex. 2018 (Declaration of Dr. Nelson in support of Patent Owner's Response).

Swarm supports its argument in the Revised Contingent Motion to Amend with the testimony of Dr. Nelson. Ex. 2028 (Declaration of Dr. Nelson in support of Revised Contingent Motion to Amend). Juniper supports its arguments in the Opposition to the Revised Contingent Motion to Amend with the testimony of Dr. Weissman. Ex. 1039 (Declaration of Dr. Weissman in Support of Opposition to Revised Contingent Motion to Amend).

II. ANALYSIS

A. Claim Construction

In an IPR based on a petition filed on or after November 13, 2018, such as here, claim terms are construed using the same claim construction standard as in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2021). That is, claim terms generally are construed in accordance with their ordinary and customary meaning, as would have been understood by a person of ordinary skill in the art, in view of the specification and the prosecution history pertaining to the patent at issue. *See id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the

effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc).

In its Petition, Juniper states that, “[f]or the purposes of this proceeding, [Juniper] construes all terms as having their ordinary and customary meanings.” Pet. 11. In its Patent Owner Response, Swarm identifies sixteen claim terms where there apparently is a dispute between the parties regarding their “ordinary and customary” meaning. PO Resp. 11. Swarm, however, does not explain what it believes to be the ordinary and customary meaning of those claim terms in the context of the ’275 patent, nor does Swarm explain how those claim terms are implicated by its arguments and evidence presented during trial. *See id.*

In any event, we need not construe any of the sixteen claim terms identified by Swarm in its Patent Owner Response because, when evaluating the merits of Juniper’s Petition in light of the arguments and evidence presented by Swarm during trial, the scope and meaning of the sixteen claim terms are not in controversy. Accordingly, it is not necessary to reach those particular issues for purposes of deciding whether Juniper has met its burden of demonstrating by a preponderance of the evidence that the challenged claims are unpatentable. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e 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))).

In our obviousness evaluation below, we address the scope and meaning of the claim term “communication,” as this term pertains to the combined teachings of Leong and AppleTalkBook contested by the parties.

More specifically, we address below whether Juniper’s proposed combination of Leong and AppleTalkBook teaches or suggests adding a co-processor “on a plug-and-play basis without any communication with the controller,” as recited in each of independent claims 1, 6, and 11 of the ’275 patent.

*B. Obviousness Over the Combined Teachings of
Leong and AppleTalkBook*

Juniper contends that claims 1–7 and 9–17 of the ’275 patent are unpatentable under § 103(a) as obvious over the combined teachings of Leong and AppleTalkBook. Pet. 12–78. Juniper contends that the teachings of Leong and AppleTalkBook account for the subject matter of each challenged claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to combine the teachings of these references. *Id.* During trial, Swarm contends that Leong alone or in combination with AppleTalkBook does not teach or suggest adding a co-processor “on a plug-and-play basis without any communication with the controller,” as recited in each of independent claims 1, 6, and 11 of the ’275 patent. PO Resp. 35–37; PO Sur-reply 6–8; PO Addt’l Brief 1–4.

Based on the fully developed trial record, we determine that Juniper has not shown by a preponderance of the evidence that claims 1–7 and 9–17 of the ’275 patent are unpatentable as obvious over the combined teachings of Leong and AppleTalkBook. We begin our analysis with the principles of law that generally apply to an obviousness ground, an assessment of the level of skill in the art, followed by brief overviews of Leong and AppleTalkBook, and then we address the dispositive issue with respect to independent claims 1, 6, and 11.

1. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations, such as commercial success, long-felt but unsolved needs, failure of others, etc.). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze the asserted grounds based on obviousness with the principles identified above in mind.

2. Level of 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 (Fed. Cir. 1983) (citing *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.* at 696–97.

In its Petition, Juniper argues that a person of ordinary skill in the art “would’ve had at least 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. Juniper further argues that a person of ordinary skill in the art could, alternatively, “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 ¶¶ 60, 61). In its Patent Owner Response, Swarm appears to agree with Juniper because it repeats verbatim the same assessment of the level of ordinary skill in the art offered by Juniper in its Petition. *Compare* PO Resp. 11, *with* Pet. 11.

Accordingly, based on the fully developed trial record, we maintain our preliminary determination regarding the level of ordinary skill in the art. Dec. on Inst. 10. That is, we adopt Juniper’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,

therefore, precludes a meaningful indication of the level of ordinary skill in the art. We apply this modified version of the level of ordinary skill in the art in our obviousness evaluations below.

3. Overview of Leong

Leong is titled “Method and Apparatus for Concurrent Data Processing.” Ex. 1005, code (54). Leong 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.” *Id.* at 1:7–11. Leong discloses it is an improvement on prior art multi-tasking computing systems that used a CPU coupled to a plurality of processing units. *Id.* at 1:19–24, Fig. 1.

Leong Figure 2 is reproduced below.

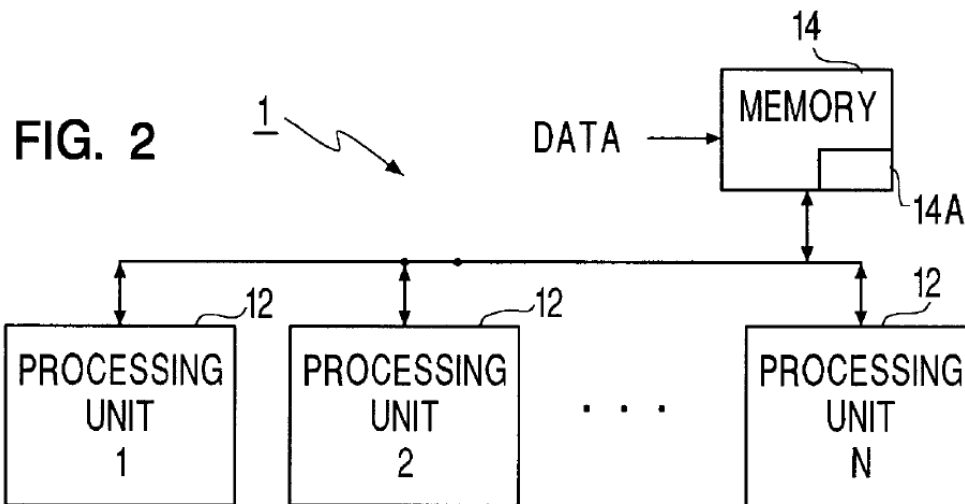


Figure 2 “is a block diagram of a multi-tasking computing system.” Ex. 1005, 2:14–16. Each processing unit 12 “is self controlled using a software application running on its own operating system” and “there is no central management and/or control unit.” *Id.* at 2:43–48. One or more processing units 12 labeled a “surveying unit” determine which tasks need to

be performed and post status information about the tasks on bulletin board 14A. *Id.* at 4:9–16. Additionally, each processing unit 12 is capable of reading the tasks on bulletin board 14A and executing tasks that it is capable of performing. *Id.* at 3:6–18.

4. Overview of AppleTalkBook

AppleTalkBook describes itself as “a practical book” that “is about the process of choosing and using an AppleTalk network.” Ex. 1006, 11. Of particular importance 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 these devices “to look up across the network and identify, at any given time, what resources are available.” *Id.* at 105.

AppleTalkBook discloses using broadcast packets “in browsing the network and identifying resources.” Ex. 1006, 108. According to AppleTalkBook, “[a] broadcast packet . . . is sent to every node on the network,” which, “[i]n turn, [results in] every node receiv[ing] a broadcast packet and, if appropriate, respond[ing] to it.” *Id.* AppleTalkBook makes clear that “[t]he broadcast packet is critical to the ease-of-use of AppleTalk; it allows for simple configuration and reconfiguration of the network without complicated administration tasks.” *Id.* at 109.

5. Claims 1, 6, and 11

Independent claim 1 recites, in relevant part, “wherein the collaboration intelligence system is configured to dynamically accept . . . an additional co-processor into the processing system *on a plug-and-play basis without any communication with the controller.*” Ex. 1001, 14:40–44

(emphasis added). Independent claims 6 and 11 recite similar limitations. *Id.* at 15:30–34, 16:30–34. Our analysis below focuses on the parties’ arguments directed to the italicized language regarding “on a plug-and-play basis without any communication with the controller.”

a. Adding a co-processor “on a plug-and play basis without any communication with the controller”

In its Petition, Juniper contends that the combined teachings of Leong and AppleTalkBook account for this limitation. Pet. 32–38. More specifically, Juniper argues that 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 32–33 (quoting Ex. 1005, 1:49–52) (citing Ex. 1005, 1:44–48, 4:30–5:11, 5:26–35, 6:62–7:34; Ex. 1003 ¶¶ 105–07). According to Juniper, a person of ordinary skill in the art “would’ve investigated techniques to introduce new processing units to Leong’s bulletin board with minimal configuration, even if the new units have different hardware or software configurations.” *Id.* at 33 (citing Ex. 1005, 6:4–14; Ex. 1003 ¶ 108). Juniper further argues that a person of ordinary skill in the art would have considered using plug-and-play technology, like that taught in AppleTalkBook, “to avoid the need for manual configuration when adding new processing units.” *Id.* at 34–35 (citing Ex. 1003 ¶ 111); *see also* Ex. 1006, 104–105, 108–109 (discussing how AppleTalkBook works); Pet. 34–38 (arguing the same).

Juniper describes the relevant teachings of AppleTalkBook and its combination with Leong as follows:

AppleTalkBook teaches implementing AppleTalk’s dynamic configuration system wouldn’t require any coordination with a central management computer or program because *each*

AppleTalk device obtains its own address and transmits a broadcast packet to identify available services. This is consistent with Leong’s decentralization teachings. As modified by AppleTalkBook’s teachings regarding the AppleTalk protocol, a new processing unit in Leong’s system would independently discover the bulletin board and obtain work. Leong, as modified by AppleTalkBook, therefore discloses a system configured to dynamically accept first and second co-processors, along with additional co-processors, on a plug-and-play basis without any communication with the controller (e.g., [Leong’s] co-processor acting as the surveying agent).

In one implementation, Leong’s modified processing units, when connected to the network, transmit a broadcast packet seeking bulletin board device type, as taught by AppleTalkBook. Any bulletin board device receiving the broadcast packet would respond with its address. The newly added Leong processing unit would connect and obtain tasks.

Pet. 35–36 (emphases added) (footnotes omitted) (citing Ex. 1005, 5:66–6:3; Ex. 1006, 108–09; Ex. 1003 ¶ 111) According to Juniper, this would have resulted in “adding a new processing unit” to Leong’s multi-tasking computing system “‘on a plug-and-play basis’ because the devices are automatically configured (e.g., the new processing unit and the bulletin board), as AppleTalkBook teaches.” *Id.* at 36 (quoting Ex. 1001, 14:43–44) (citing Ex. 1006, 104–09; Ex. 1003 ¶ 112). Juniper further argues that applying AppleTalkBook’s plug-and-play functionality to Leong’s standard Ethernet network “would’ve been an exercise of routine skill by a [person of ordinary skill in the art] with a reasonable expectation of success.” *Id.* at 36–37 (citing Ex. 1005, 5:21–25; Ex. 1006, 126–30; Ex. 1003 ¶ 113).

In its Patent Owner Response, Swarm contends that Leong alone does not teach or suggest adding a co-processor “on a plug-and-play basis without any communication with the controller,” as recited in each of independent

claims 1, 6, and 11. PO Resp. 35–37. Swarm’s arguments, however, focus on Leong’s purported disclosure of reducing the number of net processing units and how Juniper purportedly misunderstood Leong’s use of the phrase “readily scalable.” *Id.* at 35–37 (citing Ex. 1005, 5:29–36; Ex. 1003 ¶ 105; Ex. 2018 ¶ 138). Swarm does not address squarely Juniper’s position that adding an additional co-processor in the proposed combination of Leong and AppleTalkBook requires the use of broadcast packets. *See id.*

In its Reply, Juniper maintains its position set forth in the Petition that “AppleTalkBook describes network-connected devices that transmit broadcast packets to implement plug-and-play functionality.” Pet. Reply 18 (citing Pet. 36–38). In addition, Juniper directs us to the testimony from Swarm’s declarant, Dr. Nelson, that the “example implementation [set forth in the Petition] involving broadcast packets wouldn’t satisfy the claims,” but alleges that Dr. Nelson withdrew this testimony during cross-examination. *Id.* at 22 (citing Ex. 2018 ¶¶ 106–113; Ex. 1029, 17:5–18:6, 20:10–18). Juniper then argues that a person of ordinary skill in the art would have understood different techniques for limiting broadcast packets, such as by using the zones taught by AppleTalkBook. *Id.* (citing Ex. 1006, 220). Relying on the testimony of its declarant, Dr. Weissman, Juniper asserts that “[s]uch zones provide network optimization by limiting broadcast packet transmission to those devices working closely together.” *Id.* (citing Ex. 1031 ¶ 36). Moreover, Juniper asserts that Dr. Weissman explains how a person of ordinary skill in the art would have understood that “downstream devices, like Leong’s [surveying unit], often filter and drop broadcast packets to reduce CPU load.” *Id.* With this in mind, Juniper argues that, even under Dr. Nelson’s allegedly withdrawn theory, a person of ordinary

skill in the art would have appreciated “the benefits of having Leong’s [multi-tasking computing] system accept co-processors on a plug-and-play basis while using zones or filtering so broadcast packets don’t reach the [surveying unit].” *Id.*

In its Sur-reply, Swarm reiterates its contention that Leong alone does not teach or suggest adding a co-processor “on a plug-and-play basis without any communication with the controller,” as recited in each of independent claims 1, 6, and 11. PO Sur-reply 6–8. Once again, Swarm does not address squarely Juniper’s position that adding an additional co-processor in the proposed combination of Leong and AppleTalkBook requires the use of broadcast packets. *See id.*

After the filing of Swarm’s Sur-reply on December 12, 2022, but before the oral argument was held on March 16, 2023, we entered a Final Written Decision in related IPR2021-01445 involving claims 1–12 of the ’004 patent. *Juniper Networks, Inc. v. Swarm Technology LLC*, IPR2021-01445, Paper 62 (PTAB Feb. 7, 2023) (Final Written Decision). The very next day, on February 8, 2023, we entered an Order in this proceeding explaining that “the ’004 patent and the ’275 patent are continuations that share the same specification and similar claims,” and there are “overlapping issues raised by the parties in IPR2021-01445 and this proceeding.” Paper 41, 3. Based on our authority under 37 C.F.R. § 42.20(d), we requested that the parties provide additional briefing on the following two issues: “(1) whether the combination of Leong and AppleTalkBook teaches or suggest adding a co-process[or] ‘on a plug-and-play basis without any communication with the controller,’ as recited in each of independent claims 1, 6, and 11 of the ’275 patent; and (2) whether the deficiencies noted in the

Final Written Decision in IPR2021-01445 equally apply to Juniper’s proposed combination of Leong and AppleTalkBook as set forth in the Petition filed in this proceeding.” Paper 41, 3. Per our request, the parties filed additional briefs narrowly tailored to address these two issues. PO Addt’l Brief; Pet. Addt’l Brief. We also allowed the parties to raise the arguments presented and developed in their additional briefing at the oral argument.

As an initial matter, we reviewed and considered the parties’ arguments and evidence presented in the Petition, Patent Owner Response, Reply, Sur-reply, and additional briefing with respect to adding a co-processor “on a plug-and-play basis without any communication with a controller,” as recited in each of independent claims 1, 6, and 11 of the ’275 patent, but we are not persuaded we should alter our analysis from the Final Written Decision in IPR2021-01445 that addresses the same limitation recited in each of independent claims 1 and 3 of the ’004 patent. That is, we find that the combination of Leong and AppleTalkBook does not teach or suggest adding a co-processor “on a plug-and-play basis without any communication with the controller,” as recited in each of independent claims 1, 6, and 11. We expressly adopt and incorporate by reference our analysis from the Final Written Decision and the Decision Denying Petitioner’s Request for Rehearing of the Final Written Decision in the IPR2021-01145, and do not repeat it in full here. IPR2021-01445, Paper 62 at 21–30, Paper 64 at 6–14. We, however, take this opportunity to provide additional reasoning in support of our prior determination in IPR2021-01445 based on the arguments presented by the parties in the additional briefing filed in this

proceeding. We address the arguments presented by the parties in the additional briefing in turn.

- i. The record in this proceeding is essentially the same as the record in IPR2021-01445 and, therefore, justifies the same outcome*

In its additional brief, Swarm contends that the arguments and evidence advanced by Juniper in this proceeding to address adding a co-processor “on a plug-and-play basis without any communication with a controller,” as recited in each of independent claims 1, 6, and 11 of the ’275 patent, are the same as those advanced by Juniper in IPR2021-01445 to address the same limitation recited in each of independent claims 1 and 3 of the ’004 patent. PO Addt’l Brief 1–3 (*comparing* Pet. 35–37, *with* IPR2021-01445, Paper 1 at 38–41). Stated differently, like the proposed combination of Leong and AppleTalkBook asserted by Juniper against the challenged claims of the ’004 patent, the proposed combination of Leong and AppleTalkBook asserted by Juniper against the challenged claims of the ’275 patent “expressly require AppleTalk broadcast packets to facilitate the integration/configuration of co-processors on a plug-and-play basis.” *Id.* at 3.

Swarm then argues that, when considering the “critical nature of broadcast packets for network configuration as highlighted by AppleTalkBook,” Juniper’s proposed combination of Leong and AppleTalkBook clearly requires that “a newly added processing unit must necessarily communicate with [Leong’s] surveying unit because broadcast packets are read by all nodes on the network.” PO Addt’l Brief 3. As a result, Swarm concurs with our determination in the Final Written Decision in IPR2021-01445 that “AppleTalk’s broadcast packets constitute a

communication with or without a response, in part because both [Juniper] and [AppleTalkBook] expressly confirm that the broadcast packets are not only *sent to every node*, but they are also *received by every node*.” *Id.* at 4 (citing Pet. 35–37; IPR2021-01445, Paper 4 at 38–40).

In response, Juniper contends that the record in this proceeding “materially differs” from the record in IPR2021-01445 and “more fully supports [Juniper’s] interpretation of ‘without any communication,’” as claimed. Pet. Addt’l Brief 1. During cross-examination of Swarm’s declarant, Dr. Nelson, Juniper alleges that he offered “unprompted” testimony that, in the context of AppleTalkBook, communication does not occur when a broadcast is sent but a particular processor does not respond. *Id.* a 1–2 (citing 1029, 17:14–18:2). Juniper further alleges that, when Dr. Nelson was questioned about his cross-examination testimony on this particular issue, he confirmed that “‘communication’ requires two-way messaging.” *Id.* at 2 (citing Ex. 1029, 20:12–18, 22:13–18). According to Juniper, Dr. Nelson’s cross-examination testimony is consistent with how a person of ordinary skill in the art would have understood “communication” in the context of the ’275 patent. *Id.* Juniper also argues that its declarant, Dr. Weissman, confirms that “communication” in the context of the ’275 patent requires two-way messaging (i.e., a transmission and a response). *Id.* (citing Ex. 1003 ¶¶ 111, 112; Ex. 2021, 247:2–7). Juniper asserts that Swarm cannot disavow Dr. Nelson’s cross-examination testimony that communication requires two-way messaging only now that it has the Final Written Decision in IPR2021-01445 in hand. *Id.* at 3.

With one exception that applies to Dr. Nelson’s cross-examination testimony, we agree with Swarm that the arguments and evidence advanced

by Juniper in IPR2021-01445 are essentially the same as the arguments and evidenced advanced in this proceeding. There is no dispute that Juniper asserted the same combination of Leong and AppleTalkBook against both the challenged claims of the '004 patent and the challenged claims of the '275 patent. More importantly, we agree with Swarm that each of Juniper's proposed combination of Leong and AppleTalkBook "expressly require AppleTalk broadcast packets to facilitate the integration/configuration of co-processors on a plug-and-play basis." *Compare* Pet. 35–36, with IPR2021-01445, Paper 1 at 38–39. Given that Juniper's formulation of its proposed grounds common to both proceedings is based, in relevant part, on the same exact disclosures in Leong and AppleTalkBook, we see no reason to deviate from our analysis in the Final Written Decision in IPR2021-01445.

Turning to the cross-examination testimony of Swarm's declarant, Dr. Nelson, we find that his testimony on this particular issue should be accorded little to no weight for two reasons. First, Dr. Nelson offers inconsistent testimony in this proceeding. On the one hand, Dr. Nelson offers the following testimony in his declaration supporting the Patent Owner Response:

a [person of ordinary skill in the art] would understand that the combination of [AppleTalkBook] with Leong requires the use of broadcast packets among all of Leong's processing units, including the "surveying unit." As a result, a newly added processing unit would necessarily communicate with [Leong's] surveying unit by transmitting a broadcast packet to the surveying unit. This communication would necessarily be read by the surveying unit (broadcast packets are read by all the nodes on the network).

Ex. 2018 ¶ 108. This testimony, at the very least, implies that communication simply requires a message to be sent and received (i.e., that communication includes one-way communication).

On the other hand, during Dr. Nelson’s cross-examination, he offers the following testimony:

[w]hen – in the context of AppleTalkBook, there’s two cases of broadcast that goes on. *And in the first case, the broadcast is sent but a particular processor does not respond. And I would classify that as not a communication between the broadcaster and the particular process.*

The second case is when a broadcast occurs and a particular processor does respond. And I would classify that as a communication between the broadcaster and the particular processor. And that would be in the context of AppleTalk.

Ex. 1029, 17:14–18:2 (emphasis added); *see also id.* at 20:10–18, 22:13–16 (testifying to the same). Dr. Nelson appears to have changed his testimony without prompting to indicate that only two-way messaging was a communication in the context of AppleTalkBook (i.e., that a communication requires both the broadcast message and a response to that message). For this reason alone, we decline to credit Dr. Nelson’s cross-examination testimony as providing sufficient support for Juniper’s position that “communication” in the context of the ’275 patent requires two-way messaging (i.e., a transmission and a response).

Second, the aforementioned cross-examination testimony from Dr. Nelson appears to be directed to what qualifies as a communication in the context of AppleTalkBook. Ex. 1029, 17:14–18:2 (explicitly stating “in the context of AppleTalkBook” before discussing “two cases of broadcast,” and concluding with “that would be in the context of AppleTalk”).

Dr. Nelson, however, does not address the pivotal issue—namely, what qualifies as a “communication” in the context of the of the ’275 patent. Absent any references to the intrinsic record, such as the plain language of the challenged claims, the specification of the ’275 patent, or the prosecution history of the ’275 patent, we give Dr. Nelson’s cross-examination testimony that, in the context of AppleTalkBook, a broadcast message without a response does not qualify as a communication little to no weight.³ Put simply, Dr. Nelson’s cross-examination testimony as to how a person of ordinary skill in the art would have interpreted the “communication” in the context of AppleTalkBook has little to no bearing on how the same term

³ In its additional brief, Swarm directs us to the same declaration testimony from Dr. Nelson in support of the Patent Owner Response and his same cross-examination testimony, but asserts that, “[w]hile Dr. Nelson acted in good faith, his clarification during his deposition lacked any citation or reference, and should therefore be accorded little weight.” PO Addt’l Brief 9. This strikes us as unusual. Swarm is the party who offered Dr. Nelson as its declarant in this proceeding, yet requests that we don’t credit his cross-examination testimony. Whereas Juniper didn’t offer Dr. Nelson as a declarant in this proceeding, yet requests that we credit the same cross-examination testimony. Nevertheless, as we explain below, because the intrinsic record (e.g., the plain language of the challenged claims and the specification of the ’275 patent) is sufficient to determine the scope and meaning of “communication” as that term is used in the context of the ’275 patent, we need not rely on Dr. Nelson’s conclusory, unsupported assertions regarding what constitutes communication. *See Phillips*, 415 F.3d at 318 (stating that “a court should discount expert testimony ‘that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent’” (quoting *Key Pharms. v. Hercon Labs Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998))).

should be interpreted by a person of ordinary skill in the art in the challenged claims.

ii. The '275 patent does not limit “communication” to two-way messaging

In its additional brief, Juniper contends that the '275 patent uses “communication” to describe two-way messaging. Pet. Addt'l Brief 4. More specifically, Juniper argues that the '275 patent “describes a sequence of events including a ‘poll phase’ and an acknowledge message.” *Id.* (quoting Ex. 1001, 6:33–43) (citing Ex. 2042 ¶ 19 (discussing the same disclosure in the '004 patent)). In addition, Juniper argues that, when the '275 patent discusses the “communication channel” phase, it states that “the cell receives the task.” *Id.* (quoting Ex. 1001, 6:43–45) (citing Ex. 2042 ¶ 19 (discussing the same disclosure in the '004 patent)). According to Juniper, the disclosures in the '275 patent of “[t]he acknowledgement message and receipt of the task confirm the ['275] patent’s usage of ‘communication’ means two-way messaging, with an outgoing transmission and a response.” *Id.* Juniper further asserts that the negative limitation in the claims of “without any communication with the controller” “excludes such communication, but doesn’t implicate general broadcasts that don’t elicit a response from the controller.” *Id.* at 4–5.

We begin our analysis with the plain language of independent claims 1, 6, and 11. Each of these independent claims explicitly requires adding a co-processor “without *any* communication with the controller.” Ex. 1001, 14:40–44, 15:30–34, 16:30–34 (emphasis added). As we explained in the Final Written Decision in IPR2021-01445, the use of the word “any” precludes both communication with a response and communication without a response. IPR2021-01445, Paper 62 at 25.

Turning to the disclosure in the specification of the '275 patent cited by Juniper, we do not agree that those disclosures support limiting “communication” to only two-way messaging. The relevant passage in the specification states the following:

Each cell 12 [is] configured to perform one or a plurality of specialized tasks, as illustrated in the following sequence of events. During *a poll phase* each cell periodically sends an agent to the task pool until a matching task is found. To facilitate this matching, both the cell and the task pool may be equipped with a transceiver. In the case of the task pool, the transceiver maybe [sic] located in the task pool itself or in the switching fabric to which the task pool is connected. When a task match is found within a task pool, the task pool transmits *an acknowledgement* to the cell. The next step is *the “communication channel” phase*. During the communication channel phase, *the cell receives the task* and begins to execute the task. In one implementation, once the first task is completed, the communication channel is maintained so that the solidar[it]y cell can fetch another task without having to repeat the “poll” and “acknowledge” phase.

Ex. 1001, 6:33–48 (emphases added). We fail to see how each cell 12 transmitting an acknowledgement message during the “poll phase” or each cell 12 receiving a task during the “communication channel” phase implicates adding a co-processor “on a plug-and-play basis,” as required by each of independent claims 1, 6, and 11. Regardless, we do not view the cited disclosure in the specification as limiting the “communication” required by these independent claims to only two-way messaging. Instead, we view the cited disclosure as merely examples of how each cell 12 may communicate with the task pool. The U.S. Court of Appeal for the Federal Circuit “has repeatedly ‘cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.’”

Williamson v. CitrixOnline, LLC, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015)

(quoting *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002)). Stated differently, these two examples of transmitting an acknowledgment message and receiving a task in the specification, by themselves, are not enough to prevent a broad interpretation of “communication” that includes, among other things, one-way messaging that does not require a response.

In its additional brief, Juniper urges us to provide an express construction for the claim term “communication” as that term is used in the context of the ’275 patent. Pet. Addt’l Brief 5–6. Juniper alleges that we declined to construe expressly any claim terms in the Final Written Decision in IPR2021-01445, yet the outcome of that case turned on the construction of “communication,” and how Juniper’s proposed combination of Leong and AppleTalkBook failed to account properly for that term. *Id.* at 6.

Contrary to Juniper’s characterization of our Final Written Decision in IPR2021-01445, we took a position as to the scope and meaning of “communication” as that term is used in the context of the ’004 patent. Similar to its Petition filed in this proceeding, Juniper’s petition in IPR2021-01445 did not identify any claim terms in the ’004 patent that required an express construction. IPR2021-01445, Paper 1 at 11–12; *see also SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (stating that a petitioner is “master of its complaint”). As a result, Juniper correctly notes that we did not construe expressly any claim terms in that Final Written Decision under the header “*Claim Construction.*” IPR2021-01445, Paper 62 at 11–12.

Juniper, however, fails to mention that we addressed the scope and meaning of the claim term “communication,” as this term pertains to the

combined teachings of Leong and AppleTalkBook contested by the parties. IPR2021-01445, Paper 62 at 25–26. Indeed, when addressing the explicit requirement in each of independent claims 1 and 3 of the '004 patent of adding a co-processor “without any communication with the controller,” we stated that “the use of ‘any’ precludes both communication with a response and communication without a response.” *Id.* at 25. After addressing various disclosures in the specification of the '004 patent, we also stated that “the use of ‘any’ before communication in the claims implies a broad interpretation of communication that encompasses a one-way communication that does not require a response.” *Id.* at 26.

Together, these two statements make clear that our intent was to broadly construe the claim term “communication” in the context of the '004 patent as including, among other things, one-way messaging that does not require a response. As we explain above, we see no reason to deviate from construing the claim term “communication” in the '275 patent in the same way, especially because it complies with the Federal Circuit’s instruction to construe “communication” consistently across the '004 patent and the '275 patent. *See, e.g., SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (stating that, “[w]here multiple patents ‘derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents’” (quoting *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005))).

*iii. Juniper’s downstream and zone theories are belated,
but nevertheless, they are not persuasive*

Beginning with Juniper’s downstream theory, in its Reply Juniper relies on Dr. Weissman’s testimony to argue that a person of ordinary skill

in the art would have understood that “downstream devices, like Leong’s [surveying unit], often filter or drop broadcast packets to reduce CPU load.” Pet. Reply 22 (citing Ex. 1031 ¶ 36). In its additional briefing, Swarm contends that Juniper improperly raised its downstream theory for the first time in the Reply. PO Addt’l Brief 5. In any event, Swarm asserts that we should not credit Dr. Weissman’s supporting testimony on this particular issue because, similar to our analysis of the same issue in the Final Written Decision in IPR2021-01445, his testimony is conclusory and unsupported. *Id.*

As an initial matter, we agree with Swarm that Juniper’s downstream theory is a new argument raised for the first time in the Reply. At no point in its Petition does Juniper explain how Leong’s surveying unit may be capable of filtering or dropping broadcast packets to reduce CPU load. *See* Pet. 35–38. Nor does Juniper attempt to explain why we should consider this belated argument in its additional briefing. *See* Pet. Addt’l Brief.

Our Trial Practice Guide is clear—“[Juniper] may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.” Patent Trial and Appeal Board Consolidated Trial Practice Guide 73 (Nov. 2019)⁴ (citing *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1077–78 (Fed. Cir. 2015)). The Trial Practice Guide further explains that “[r]espond,’ in the context of 37 C.F.R. § 42.23(b), does not mean proceed in a new direction with a new approach as compared to the positions taken in a prior filing,” and “[w]hile replies and

⁴ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

sur-replies can help crystalize issues for decision, a reply or sur-reply that raises a new issue or belatedly presents evidence may not be considered.” *Id.* at 74. The Federal Circuit has cautioned that we must disregard such inappropriately presented argument and evidence. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016) (holding that the Board did not abuse its discretion in refusing to consider reply brief arguments advocating a “new theory” of unpatentability under 37 C.F.R. § 42.23(b)).

In any event, even if we were to consider Juniper’s downstream theory, we do not find this belated argument persuasive. To support its downstream theory, Juniper relies on the Dr. Weissman’s testimony that “[t]echniques for avoiding [broadcast packets flooding the network] are well known in the art and may include downstream devices dropping, or filtering, broadcast packets to minimize processing load.” Ex. 1031 ¶ 36. We decline to credit this testimony for two reasons. First, apart from generically asserting that dropping or filtering broadcast packets minimizes processing load, Dr. Weissman does not attempt to explain how Leong’s surveying unit would be considered a “downstream device” from a newly added co-processor, much less why Leong’s surveying unit would need to filter or drop a broadcast packet sent by the newly added co-processor. Second, Dr. Weissman does not cite to any underlying evidence to support his testimony. *See* 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.”).

Turning to Juniper’s zone theory, in its Reply Juniper argues that a person having ordinary skill in the art would have understood different

techniques for limiting broadcast packets, such as by using the zones taught by AppleTalkBook. Pet. Reply 22 (citing Ex. 1006, 220). Relying on the testimony of Dr. Weissman, Juniper asserts that “[s]uch zones provide network optimization by limiting broadcast packet transmission to those devices working closely together.” *Id.* (citing Ex. 1031 ¶ 36).

In its additional briefing, Swarm contends that Juniper improperly raised its zone theory for the first time in the Reply. PO Addt'l Brief 5. Swarm argues that the “Petition never mentions zones,” nor does it cite to the pages of AppleTalkBook that discuss using zones. *Id.* Swarm also argues that the Petition never suggests dividing Leong’s processing units into separate networks, but instead states that “Leong discloses [its] processing units are computers coupled over a standard network.” *Id.* (quoting Pet. 23) (citing Pet. 24 (presenting an annotated version of Leong’s Fig. 2 illustrating direct network coupling between the surveying unit and the other processing units))). In any event, Swarm contends that, even if we were to consider Juniper’s zone theory, it fails for the same reasons discussed in the Final Written Decision in IPR2021-01445. *Id.* That is, Swarm asserts that the processing units in Leong’s multi-tasking computing system are part of a single network. *Id.* (citing Pet. 24; Ex. 2041, 18:1–4).

In response, Juniper contends that its zone theory was properly raised in the Reply for the following reasons: (1) Swarm did not construe “without any communication” in its Patent Owner Response; (2) Dr. Nelson provides declaration testimony that general broadcast packets that don’t receive responses constitute a communication; (3) Juniper replies on AppleTalkBook’s discussion of zones to explain, and contradict Dr. Nelson’s declaration testimony, that not every node would necessarily

receive broadcast packets; and (4) to explain the general background knowledge in the art with respect to limiting the reach of broadcast packets. Pet. Addt'l Brief 8–9 (citing PO Resp. 11; Ex. 2018 ¶¶ 106–113).

We agree with Swarm that Juniper's zone theory is a new argument raised for the first time in the Reply. Similar to our analysis above, at no point in its Petition does Juniper explain how Leong's surveying unit and processing units may be separated into different zones to limit the reach of broadcast packets. *See* Pet. 35–38. Nor are there any citations in the Petition to the pages of AppleTalkBook (i.e., pages 2020 and 2021) that explain how a zone operates. *See id.* For these reasons alone, Juniper's zone theory is a new argument that was improperly raised in the Reply and, therefore, is not entitled to consideration.

We also do not agree with the reasons Juniper outlines in its additional briefing to support its contention that the zone theory was properly raised in the Reply. As the Petitioner with the burden of persuasion, Juniper is responsible for identifying what claim terms may require an express construction—not Swarm. *See* 37 C.F.R. § 42.104(b)(3) (“the petition must set forth . . . [h]ow the challenged claim is to be construed”). In addition, Dr. Nelson's declaration testimony identified by Juniper (Ex. 2018 ¶¶ 106–113) was not presented nor developed by Swarm in its Patent Owner Response. *See* PO Resp. As such, Juniper cannot rely on this declaration testimony as sufficient justification for introducing its belated zone theory. Finally, for the reasons set forth above, we decline to credit Dr. Nelson's cross-examination testimony that, in the context of AppleTalkBook, general broadcast packets that don't receive responses do not constitute a communication because it is inconsistent with his declaration testimony that

general broadcast packets that don't receive responses constitute a communication. *See supra* Section II.B.5.a.i.

In any event, even if we were to consider Juniper's zone theory, we do not find this belated argument persuasive. AppleTalkBook discloses using zones for the following two purposes: (1) "to divide devices on an internetwork into logical groups," and (2) "to limit internetwork traffic." Ex. 1006, 219–20. AppleTalkBook further discloses that, although a zone may include multiple networks, "*all devices on a single network will belong to the same zone.*" *Id.* (emphasis added). Based on these disclosures, we find that AppleTalkBook teaches that, if all devices are on a single network, they will belong to the same zone.

Leong discloses that micro-processing units 12 are stand alone computers that "are coupled over *a standard network* (such as an Ethernet, Local Area Network, or the like)." Ex. 1005, 5:20–24 (emphasis added); *see also* Ex. 2041, 18:1–4 (during oral argument in IPR2021-01445, Juniper's counsel admitted that all of Leong's processing units are part of a single network). Based on this disclosure in Leong together with Juniper's admission, we find that Leong teaches its processing units are part of a single network. Juniper does not reconcile how its zone theory applies to Leong's multi-tasking computing system, especially when each of Leong's processing units are part of a single network and, therefore, would all belong to the same zone in Juniper's proposed combination.

b. Summary

In summary, based on the fully developed record, Juniper's proposed combination of Leong and AppleTalkBook does not teach or suggest adding a co-processor "on a plug-and-play basis without any communication with

the controller,” as recited in each of independent claims 1, 6, and 11. Accordingly, Juniper has not demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 6, and 11 would have been obvious over the combined teachings of Leong and AppleTalkBook.

6. Claims 2–5, 7, 9, 10, and 12–17

By virtue of their dependency, claims 2–5, 7, 9, 10, and 12–17 include the same limitations as at least one of independent claims 1, 6, and 11. Juniper does not present additional arguments and evidence with respect to these dependent claims that remedy the deficiency in its analysis of the combined teachings of Leong and AppleTalkBook. *See* Pet. 41–56, 69–71, 74–78. Accordingly, for the same reasons discussed above, Juniper has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2–5, 7, 9, 10, and 12–17 would have been obvious over the combined teachings of Leong and AppleTalkBook.

C. Remaining Obviousness Grounds

Juniper also contends that (1) claims 1–7 and 9–17 of the ’275 patent are unpatentable under § 103(a) as obvious over the combined teachings of Leong, AppleTalkBook, and Ethernet Specification; (2) claim 16 of the ’275 patent is unpatentable under § 103(a) as obvious over the combined teachings of Leong, AppleTalkBook, and Datla; and (3) claim 16 of the ’275 patent is unpatentable under § 103(a) as obvious over the combined teachings of Leong, AppleTalkBook, Ethernet Specification, and Datla. Pet. 79–86. Juniper does not present additional arguments and evidence with respect to these remaining grounds that remedy the deficiency in its analysis of the combined teachings of Leong and AppleTalkBook. *See id.*

Accordingly, for the same reasons discussed above, Juniper has not demonstrated by a preponderance of the evidence that (1) the subject matter of claims 1–7 and 9–17 of the '275 patent would have been obvious over the combined teachings of Leong, AppleTalkBook, and Ethernet Specification; (2) the subject matter of claim 16 of the '275 patent would have been obvious over the combined teachings of Leong, AppleTalkBook, and Datla; and (3) the subject matter of claim 16 of the '275 patent would have been obvious over the combined teachings of Leong, AppleTalkBook, Ethernet Specification, and Datla.

D. Swarm's Revised Contingent Motion to Amend

Swarm's Revised Contingent Motion to Amend is contingent on the US determining that originally challenged claims 1 and 3 are unpatentable. Mot. 1. As we discuss above, because Juniper has not demonstrated by a preponderance of the evidence that claims 1 and 3 of the '275 patent are unpatentable under § 103(a) as obvious, Swarm's request to amend originally challenged claims 1 and 3 and replace them with proposed substitute claims 18 and 19 is *dismissed* as moot.

III. CONCLUSIONS

Based on the fully developed record, Juniper has not demonstrated by a preponderance of the evidence that claims 1–7 and 9–17 of the '275 patent are unpatentable under § 103(a) as obvious. A summary of our conclusions is set forth in the table below.

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–7, 9–17	103(a)	Leong, AppleTalkBook		1–7, 9–17
1–7, 9–17	103(a)	Leong, AppleTalkBook, Ethernet Specification		1–7, 9–17
16	103(a)	Leong, AppleTalkBook, Datla		16
16	103(a)	Leong, AppleTalkBook, Ethernet Specification, Datla		16
Overall Outcome				1–7, 9–17

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	
Substitute Claims Proposed in the Amendment	18, 19
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	
Substitute Claims: Not Reached	18, 19

IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1–7 and 9–17 of the '275 patent have not been
shown to be unpatentable;

FURTHER ORDERED that Swarm's Revised Motion to Amend is
dismissed as moot; and

FURTHER ORDERED that, because this is a Final Written Decision,
parties to this proceeding seeking judicial review of our decision must
comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-00141
Patent 10,592,275 B2

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