Trials@uspto.gov
571-272-7822

Paper 84
Entered: November 14, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION, CAVIUM, LLC, and DELL, INC.,
Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2017-01405
Patent 7,124,205 B2[1]

Before STEPHEN C. SIU, DANIEL N. FISHMAN, and CHARLES J. BOUDREAU, *Administrative Patent Judges*.

PER CURIAM.

Opinion Concurring-in-part and Dissenting-in-part filed by *Administrative Patent Judge* SIU.

---

[1] Cavium, Inc., which filed a Petition in Case IPR2017-01735, and Dell, Inc., which filed a Petition in Case IPR2018-00336, were joined as petitioners in this proceeding. According to updated mandatory notices filed in this proceeding, Cavium, Inc., has now been converted to Cavium, LLC. Paper 79.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a)

I. INTRODUCTION

Responsive to the filed Petition (Paper 1, "Pet."), we instituted an *inter partes* review of all challenged claims (claims 3, 9, 10, 16, 22, 24–33, 35, and 36) of U.S. Patent No. 7,124,205 B2 ("the '205 patent," Ex. 1001). Papers 8, 43. Alacritech, Inc. ("Patent Owner") filed a Corrected Patent Owner's Response (Paper 32, "PO Resp."), and Intel Corporation filed a Petitioner Reply (Paper 44, "Pet. Reply"). Responsive to petitions and requests for joinder filed in IPR2017-01735 and IPR2018-00336, we joined Cavium, Inc. (now Cavium, LLC) and Dell, Inc., respectively, as petitioners in this proceeding. Paper 8 in IPR2017-01735; Paper 9 in IPR2018-00336. According to updated mandatory notices filed in this proceeding, Cavium, Inc. has now been converted to Cavium, LLC. Paper 79. Petitioners Intel Corporation, Cavium, LLC, and Dell, Inc. are identified herein collectively as "Petitioner."

Patent Owner filed a first Contingent Motion to Amend (Paper 20), directed to claims 3, 9, 10, 16, 22, 24–30, 35, and 36; Petitioner filed an Opposition (Paper 39); and Patent Owner filed a Reply to Petitioner's Opposition (Paper 45).

With respect to claims 31–33, Patent Owner filed a Supplemental Patent Owner Response (Paper 56), and Petitioner filed a Supplemental Reply (Paper 68).

Patent Owner filed a second Contingent Motion to Amend (Paper 57), directed to claims 31–33; Petitioner filed an Opposition (Paper 66); and Patent Owner filed a Reply to Petitioner's Opposition (Paper 70).

Petitioner filed a Motion to Exclude (Paper 60), Patent Owner filed an Opposition (Paper 61), and Petitioner filed a Reply to Patent Owner's Opposition (Paper 63).

Patent Owner filed a Motion to Seal (Paper 30).

A transcript of an oral hearing held on September 13, 2018 (Paper 80) has been entered into the record.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). We base our decision on the preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Having reviewed the arguments of the parties and the supporting evidence, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 3, 9, 10, 16, 22, 24–30, 35, and 36 are unpatentable but Petitioner has not shown claims 31–33 are unpatentable. We also deny Petitioner's Motion to Exclude and Patent Owner's first Contingent Motion to Amend and dismiss Patent Owner's second Contingent Motion to Amend.

THE '205 PATENT (EXHIBIT 1001)

The '205 patent describes a system and method for accelerating data transfer between a network and storage unit. Ex. 1001, 3:42–43.

ILLUSTRATIVE CLAIMS

Challenged claim 3, and claim 1 from which it depends, are illustrative of the claimed subject matter and are reproduced below:

> 1. An apparatus comprising:
>
> a host computer having a protocol stack and a destination memory, the protocol stack including a session layer portion, the session layer portion being for processing a session layer protocol; and
>
> a network interface device coupled to the host computer, the network interface device receiving from outside the apparatus a response to a solicited read command, the solicited read command being of the session layer protocol, performing fast-path processing on the response such that a data portion of the response is placed into the destination memory without the protocol stack of the host computer performing any network layer processing or any transport layer processing on the response.
>
> 3. The apparatus of claim 1, wherein the session layer protocol is ISCSI.

Id. at 43:44–58, 66–67.

GROUNDS OF INSTITUTION

We instituted trial on all proposed challenges to patentability, as follows:

Claims 3, 9, 10, 16, 22, 27–33, 35, and 36 as unpatentable under 35 U.S.C. § 103(a) over Thia,[2] Satran I,[3] and Satran II;[4]

Claims 24–26 as unpatentable under 35 U.S.C. § 103(a) over Thia, Satran I, Satran II, and Carmichael.[5]

ANALYSIS

Claim 3 – obviousness (depends from claim 1)

Petitioner cites Thia as disclosing a "host computer having a protocol stack and a destination memory" (e.g., a "host memory") and a "network interface device" (or "Reduced Operation Protocol Engine (ROPE)") "coupled to the host computer," as recited in claim 1, that "provides a fast-path for eligible data traffic" by "performing a 'bypass test' on data packets." Pet. 38, 42–43, 46–47 (citing Ex. 1015, .001–.004, .006, .007, .013, Fig. 2). As Petitioner explains, Thia discloses a "Host Processor" and "Host Memory" coupled to a "Reduced Operation Protocol Engine (ROPE)" that performs "[a] bypass for multiple layers" that includes processes in which "the full protocol stack can be offloaded," "at least for the transport and session layers" and also including other layers "like the network and application layers." *Id.* at 42–43, 46–47 (citing Ex. 1015 Fig. 2, .002, .004, .013).

---

[2] Y.H. Thia and C.M. Woodside, "A Reduced Operation Protocol Engine (ROPE) for a Multiple-Layer Bypass Architecture," 1995 ("Thia," Ex. 1015).
[3] J. Satran, et al., "SCSI/TCP (SCSI over TCP)," 2000 ("Satran I," Ex. 1056).
[4] J. Satran, et al., "iSCSI (Internet SCSI)," 2000 ("Satran II," Ex. 1057).
[5] US Patent 5,894,560, issued April 13, 1999 ("Carmichael," Ex. 1053).

Patent Owner argues that "Thia by its terms does not disclose network layer bypass." PO Resp. 35. However, we are persuaded by Petitioner's evidence and arguments that Thia discloses the disputed features. Pet. Reply 8–11. For example, as Patent Owner acknowledges, "[t]he seven layers of the OSI model are . . . Application Layer . . . Presentation Layer . . . Session Layer . . . Transport Layer . . . Network Layer . . . Data Link Layer . . . [and] Physical Layer." PO Resp. 2. As previously discussed, Thia discloses "hardware 'fast path'" for "multiple layers," including "implementing an entire service through all layers for certain cases." Ex. 1015, .002. In other words, Thia discloses "fast path" (or bypass) for "all layers." One of ordinary skill in the art would have understood that "all layers" would include each of the "seven layers of the OSI model." One of ordinary skill in the art would have also understood that "all layers" of the OSI model would have included the "network layer," the "network layer" being one of the seven layers of the OSI model.

Also, as Petitioner explains, Thia discloses that "multiple-layer bypass" includes "[a] bypass for multiple layers instead of just one," that the bypassed layers may include "some layers, like the network and application layers" (and that further subdividing certain layers may provide additional advantages). Pet. Reply 8–9; Ex. 1015, .004. Patent Owner argues that "advantages" of bypassing multiple layers as disclosed by Thia are "theoretical" and that Thia fails to "include network layer bypass." PO Resp. 38–39. We are not persuaded by Patent Owner's argument. As noted previously, Thia discloses "bypass" that includes "multiple layers" and that the "multiple layers" include "some layers, like the network . . . layer[]." Thus, one of skill in the art would have understood that if the "bypass"

includes certain layers and that the "certain" layers include the "network layer," then the "network layer" could be included in the "multiple layers." Therefore, as Petitioner argues, and we agree, because Thia discloses bypassing "multiple layers," one of skill in the art would have understood that bypassing "multiple layers" would include bypassing the "network layer," which Thia discloses may be one of the "multiple layers" bypassed. *See* Pet. Reply 8–9.

Although Patent Owner argues that Thia discloses advantages of bypassing the network layer that are "theoretical," Patent Owner does not explain sufficiently how the "advantages" (even assuming that the "advantages" are "theoretical," as Patent Owner contends) enumerated by Thia somehow indicate that one of ordinary skill in the art would not have understood that the bypassing of Thia includes bypassing the "network layer" in view of Thia's explicit disclosure of bypassing the "network layer."

Patent Owner argues that "[c]rucially, Thia ***never mentions the network layer again***," and "makes no conclusions as to the network layer." PO Resp. 39. However, Patent Owner does not assert or demonstrate persuasively any specific claim feature that Thia fails to disclose, or how "mention[ing] the network layer again" within the Thia reference would be necessary to meet the disputed claim feature.

Patent Owner argues that "a POSA [would not] infer network layer bypass" from the teachings of Thia because, according to Patent Owner, if Thia's disclosure of bypassing "multiple layers" that includes the "network layer" means bypassing the network layer, then such an interpretation would "effectively render[] the remainder of Thia redundant" because "a person of skill in the art . . . would have seen no reason to include Sections 3 or 4

[because] they could simply have said 'do bypass.'" PO Resp. 40. We are not persuaded by Patent Owner's argument at least because, as discussed previously, Thia discloses bypassing "multiple layers," which includes bypassing the "network layer" regardless of whether "Sections 3 or 4" of the Thia reference are included or deleted. Patent Owner also does not explain sufficiently how Thia's inclusion of "Sections 3 or 4" in the Thia reference, as opposed to replacing "Sections 3 or 4" with the phrase "do bypass," indicates that Thia fails to disclose bypassing "multiple layers" including the network layer. As discussed previously, we find Thia discloses this feature.

As quoted above, claim 1 recites "performing fast-path processing . . . without the protocol stack of the host computer performing . . . any transport layer processing on the response." Petitioner persuasively maps Thia's disclosure of a "bypass test" and routing of data for fast-path processing to this limitation. Pet. 46–49 (citing Ex. 1015, .001, .003, .004, .006, .007, .013, Figs. 1, 2). Patent Owner argues that "[t]he combination of the Thia, Satran I, or Satran II references does not preclude the host computer from performing any transport layer processing on 'the response.'" PO Resp. 42. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. 46–49; Pet. Reply 12–14. As discussed and as Petitioner explains, Thia discloses "implement[ing] the bypass stack . . . at least for the . . . transport layer[]" and that it was known in the art that "the transport protocol layer is offloaded." Ex. 1015, .002, .013. Based on the testimony of Petitioner's expert, Dr. Bill Lin, we find that one of skill in the art would have understood that when the bypass stack of Thia is implemented for the transport layer, as Thia discloses, the entire transport layer would have been bypassed, and thus the host computer would be

precluded from performing any transport layer processing as claimed. *See* Ex. 1003, A-12–A-16; *see also* Ex. 1223 ¶¶ 11–15. Notably, Thia does not disclose implementing the bypass stack for only a portion of the transport layer.

Patent Owner argues that Thia discloses that "[t]here is no segmentation/reassembly within the bypass path." PO Resp. 43 (citing Ex. 1015, .014). As Petitioner explains, however, the disputed claims do not recite bypassing of "segmentation/reassembly." Pet. Reply 12.

Claim 3 depends from claim 1 and recites a protocol stack including a session layer portion for processing a session layer protocol that is iSCSI. Petitioner explains that Thia discloses a protocol stack including a session layer portion for processing a session layer protocol and that Satran "confirms that iSCSI is capable of maintaining a session" and "discloses the iSCSI protocol, which a POSA would recognize operates at the session layer in the OSI model." Pet. 40, 45, 50 (citing Ex. 1057, .053; Ex. 1003, A-17). Petitioner further provides expert testimony explaining sufficient reasons, based on evidence of record, to support the conclusion that the combination would have been obvious. Ex. 1003 ¶¶ 92–99.

Patent Owner argues that the system of Thia is a "simulated experiment" and a "feasibility study" and that one of skill in the art would not have "believe[d] that [a] . . . feasibility study could be somehow improved by using different simulated packets," and that "a person of skill in the art would have no reason to . . . [use] iSCSI packets as opposed to any other form of packet." PO Resp. 50–53. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 17–19.

Patent Owner provides insufficient evidence or expert testimony to overcome the weight of persuasive evidence and expert testimony provided by Petitioner showing that the combination of the cited references is obvious. In addition, Patent Owner provides insufficient evidence or expert testimony to support the contention that, even if the engine and architecture of Thia is a "feasibility study" or "simulation" as Patent Owner contends, this mere presumed fact would have refuted Petitioner's showing of obviousness. For example, Patent Owner argues that one of ordinary skill in the art would not have "believed" that a "feasibility study" could be improved and that one of ordinary skill in the art would have "no reason" to use a known protocol (iSCSI) in a system that uses such protocols. However, the issue before us is whether it would have been *obvious* to one of ordinary skill in the art to use a particular known protocol (iSCSI) in a known system that uses such known protocols to achieve a predictable and expected result of a system using a known protocol in a known way to achieve the known result, and not whether one of skill in the art would have *believed* or had *reason* to use the known protocol.

Patent Owner also argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references, alleging that the claimed invention addressed a "long-felt but unresolved need" to address a problem of "bottlenecks" to "reliably offload[] certain protocol processing," and that there is a "clear and direct" nexus between that long-felt need and the claimed invention. PO Resp. 54–56. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 21. We agree with Petitioner that Patent Owner has not persuasively established any connection between

resolution of those bottlenecks and the patented invention. To be accorded substantial weight, there must be a nexus between the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). Nexus is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden of showing that there is a nexus lies with the Patent Owner. *See Paulsen*, 30 F.3d at 1482. In the absence of an established nexus with the claimed invention, secondary consideration factors are not entitled to much, if any, weight and generally have no bearing on the legal issue of obviousness. *See In re Vamco Mach. & Tool, Inc.*, 752 F.2d 1564, 1577 (Fed. Cir. 1985). Moreover, to the extent that Patent Owner argues that there was a "long-felt need" to place a response into the destination memory without the protocol stack of the host computer performing processing, as previously discussed, Thia previously satisfied this need. The "long-felt need" must not have been satisfied by another before the patentee. *Newell Co. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

Patent Owner also argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references because "the challenged claims . . . enjoyed great commercial success" by "the offloading . . . technology described in the challenged claims." PO Resp. 56. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 21–23. Patent Owner does not provide sufficient information or evidence to establish that

the claimed invention, in fact, experienced "commercial success." In fact, as Petitioner argues, evidence of record indicates that the claimed invention "never went anywhere" and was ultimately "disabled." Pet. Reply 22 (citing Exs. 1224, 1227). In any event, even assuming that the claimed invention experienced "commercial success," as Patent Owner alleges, the feature Patent Owner alleges to have resulted in the presumed "commercial success" was previously disclosed by Thia. *See* discussion above. Under these circumstances, any alleged commercial success stems from what was known in the prior art so that there can be no nexus. *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369 (Fed. Cir. 2011).

Patent Owner argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references because "Alacritech's patent portfolio covering network acceleration techniques was the subject of several successful commercial licenses." PO Resp. 56. We are not persuaded by Patent Owner's arguments for at least the reasons set forth by Petitioner. Pet. Reply 22–23. For example, as Petitioner explains, Patent Owner does not demonstrate sufficiently that the alleged licenses were the result of the claimed invention and, therefore, fails to establish a nexus between the claimed invention and the alleged licenses. Pet. Reply 23. Rather, as Petitioner points out, the licenses were the result of reasons not related to the claimed invention (e.g., as a result of an infringement lawsuit). Pet. Reply 23 (citing Ex. 2038). In any event, even assuming that there were "successful commercial licenses," as Patent Owner contends, and the alleged "successful commercial licenses" were the result of some unspecified feature recited in claim 3, for example, as previously discussed, Thia discloses these features. There can be no

nexus if the feature relied upon was previously known in the prior art. *Tokai Corp.*, 632 F.3d at 1369.

Patent Owner argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references because the claimed invention was alleged to be the subject of industry "praise." PO Resp. 57–58. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 23. For example, Patent Owner argues that various sources stated that Patent Owner's network interface card "is able to sustain network bandwidth," "achiev[es] lower processor utilization," and "is an evolutionary advancement of [Patent Owner's] . . . protocol acceleration" (PO Resp. 57–58 (citing Ex. 2040; Ex. 2026 ¶ 130)), but Patent Owner does not demonstrate sufficiently that any of these alleged statements, assuming that any of these statements would have been considered to be "praise" at all, pertain to the claimed invention and in what way. Hence, Patent Owner fails to establish sufficient nexus between the alleged "praise" and the claimed invention.

Patent Owner argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references because "prior attempts at 'TCP offload [have] repeatedly failed.'" PO Resp. 58 (citing Ex. 2041, 2). We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 24. For example, Patent Owner states that "TCP offload" supposedly "repeatedly failed" but does not demonstrate sufficiently that claim 3 recites "TCP offload." In any event, even if TCP offload is a form of network

processing offload, the Patent Owner provides no evidence linking the failure of others to any limitations of the challenged claims.

Patent Owner argues that it would not have been obvious to one of ordinary skill in the art to have combined the teachings of the cited references because "experts and industry were skeptical of offloading processing of complex protocols." PO Resp. 59. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 24. For example, as previously discussed, Thia, for example, discloses "offloading processing of complex protocols." There can be no nexus if the feature relied upon was previously known in the prior art. *Tokai Corp.*, 632 F.3d at 1369.

Claim 16 – obviousness

We are persuaded by Petitioner's mapping of Thia and Satran with respect to the challenged limitations of claims 1 and 3 for the reasons stated above and the unchallenged limitations of claim 8. Patent Owner has accordingly waived any such arguments per the Scheduling Order (Paper 9, 3 ("The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived.")) Claim 16 depends from claim 8 and recites that the bus is a PCI bus. Petitioner argues that Thia discloses a "Host Processor Bus" and provided evidence and expert testimony (e.g., Ex. 1003 (Lin Decl.)) supporting the contention that a "PCI bus" was a known processor bus as would have been used by those of ordinary skill in the art. Pet. 62–63; Ex. 1033, .008; Ex. 1053, 2:28–31.

Patent Owner argues that "[t]here is no disclosure of a ***PCI*** bus in any of the Thia, Satran I, or Satran II references." PO Resp. 45. We are not

persuaded by Patent Owner's arguments for at least the reasons set forth by Petitioner. Pet. Reply 14–15. For example, as previously discussed, Thia discloses a "bus" and we credit Petitioner's expert's testimony (and associated evidence) that one of skill in the art would have understood that a "bus" in the context of computer systems would have included a "PCI bus," as a known computer system bus. *See* Ex. 1003 ¶¶ A-35–A-36 (citing Ex. 1033, .008; Ex. 1053, 2:28–31).

Claim 27 – obviousness

Claim 27 depends from claim 22 and recites that the response is received via a single cable. Petitioner argues that Thia discloses a "transmission medium" in a network, which one of skill in the art would have understood to include "Ethernet" and that "Ethernet is a . . . network that uses a single cable for network transmission." Pet. 72–74 (citing Ex. 1003 A-50–52, Ex. 1001, 42:49–51; Ex. 1006, .028, .294, Ex. 1057, .092)); *see also* Dec. 11. Patent Owner argues that Petitioner's contention "that '[a] POSA would understand a bus to be a cable'" is "dubious[]" and that "the relevant question is . . . whether Thia discloses . . . any cables at all." PO Resp. 46–47. Hence, Patent Owner argues that Thia discloses a "bus" but fails to disclose a "cable." We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply. 15–16. For example, Petitioner explains that Thia discloses a "transmission medium" that supports an "end-system single-connection" and provides supporting evidence indicating the examples of Thia are "well-known fiber optical cable and copper cable standards, which a POSA would have known

required a single cable." Pet. Reply 15–16 (citing Ex. 1015, .002, Fig. 2; Ex. 1223 ¶ 19).

Claim 30 – obviousness

Claim 30 recites an "enclosure" that contains the host computer and the network interface device. Petitioner argues that Thia discloses a computer system and that one of skill in the art would have understood that a computer system "would be in an enclosure." Pet. 78–79. Patent Owner argues that the computer system of Thia is a "model" and that one of skill in the art "would see no reason to place abstract models of system components in an actual, physical computer housing." PO Resp. 48. We are not persuaded by Patent Owner's argument for at least the reasons set forth by Petitioner. Pet. Reply 16–17. In addition, Patent Owner asserts that Thia discloses a "model" of a computer system and supposedly fails to disclose an "actual, physical" computer but Patent Owner does not indicate where Thia discloses the system as being limited to a "model." PO Resp. 48. In any event, we note that claim 30 recites an "enclosure" but does not recite or otherwise require an "actual, physical computer housing." Therefore, we need not consider whether Thia's "Reduced Operation Protocol Engine (ROPE) for a multiple layer bypass architecture" (even assuming Patent Owner to be correct that Thia discloses a "model" only) discloses this hypothetical claim limitation.

We are also persuaded by Petitioner's showing with respect to the remaining claims challenged under this ground: claims 9, 10, 24–26, 28, 29, 35, and 36. *See, e.g.*, Pet. 33–97.

Claims 31–33 – obviousness

Claim 31 recites a means for performing a number of functions including, *inter alia*, "fast-path processing a portion of the response" and "slow-path processing [of] the subsequent portion." Petitioner argues, and we agree, that the claim itself does not recite any structure, let alone sufficient structure, for performing the recited functions. Pet. 28. Petitioner contends this claim element is indefinite because "the 205 Patent fails to disclose any structure, coupled to the host computer, that performs all four functions." *Id*. Petitioner asserts that, "[a]t best, the 205 Patent discloses a network adaptor that performs" three of the four recited functions, including fast-path processing but excluding slow-path processing. *Id*. (citing Ex. 1001, 8:61–64, 8:25–40, 39:48–49, 40:19–26).

We agree that the '205 patent Specification discloses structure that performs fast-path processing—namely INIC 22. *See, e.g.*, Ex. 1001, Fig. 1, 8:25–40. INIC 22 is coupled to host 20. *Id*. at 6:43–45, Fig. 1. Host 20 includes CPU 30. *Id*. at 6:30–32, Fig. 1. INIC 22 "chooses when to send the packet to the host memory 33 for 'slow-path' processing of the headers by the CPU 30." *Id*. at 8:25–27. Thus, INIC 22, coupled to host 20, performs fast-path processing and CPU 30 in host 20 performs slow-path processing. The recited means is coupled to the recited host, and the recited means must perform *both* fast-path processing and slow-path processing. INIC 22, a structure coupled to the host system, does not perform *both* fast and slow processing. Conversely, CPU 30 within host 20, to which INIC is coupled, performs slow-path processing but does not also perform fast-path processing. Therefore, we discern no structure disclosed in the '205 patent

Specification that is coupled to the host and performs *both* fast-path and slow-path processing.

In an *inter partes* review, we do not consider issues of validity under 35 U.S.C. § 112. However, our rules require a petition for *inter partes* review to set forth how the challenged claims are to be construed and, for each means-plus-function element recited in the claims, to identify the structure disclosed in the challenged patent's specification that corresponds to the recited element. 37 C.F.R. § 42.104(b)(3). After identifying such a structure in the patent at issue, Petitioner also bears the burden to identify, in the petition, where equivalent structure is found in the applied references. 37 C.F.R. § 42.104(b)(4). The Petition does not provide these required discussions. Petitioner's Supplemental Reply acknowledges that the Petition did not provide a specific construction of the recited means element and that "the Board has insufficient information with which to make a determination regarding the patentability of" claims 31–33. Paper 68, 2.

Thus, we find Petitioner has failed to show by a preponderance of the evidence that claim 31 is unpatentable. For the same reasons as claim 31, we find the Petition fails to show by a preponderance of the evidence that claims 32 and 33, dependent from claim 31, are unpatentable.

Real Parties in Interest

Intel Corporation identifies itself as a real party in interest in these proceedings and represents that "[n]o other parties exercised or could have exercised control over this Petition; no other parties funded or directed this Petition." Pet. 2; Paper 42. Patent Owner argues that Intel "identifies only one real party-in-interest" but "fails to identify . . . Cavium [and] Dell," who

"are either a co-defendant or intervenor in Alacritech's patent infringement lawsuit over the challenged patent." PO Resp. 61. Patent Owner further argues that "Dell is both Intel's and Cavium's customer and indemnitee," that "Dell, Cavium, and Intel have closely intertwined financial interests and business relationships," have "common litigation strategy with respect to their defense against Alacritech's patents-in-suit," and "filed almost verbatim petitions and share the same expert." PO Resp. 61–62.

We note that Dell and Cavium have been joined as petitioners in the present matter. Therefore, Patent Owner's argument is moot.

MOTION TO EXCLUDE

Patent Owner filed a Declaration of Kevin Almeroth, Ph.D. (Ex. 2026). Petitioner moves to exclude portions of Exhibit 2026 because, according to Petitioner, portions of Exhibit 2026 "are identical to the arguments in the" Patent Owner's Corrected Response to the Petition and, "[when] counsel for Petitioner asked [Patent Owner's expert, Dr. Almeroth] why portions of the Patent Owner's oppositions were identical to the expert's purported declaration . . . Counsel for Patent Owner instructed Dr. Almeroth not to answer on the basis of privilege." Paper 60, 2–3.

However, we agree with Patent Owner that "Petitioner's complaints go to the weight of Dr. Almeroth's opinions and not their admissibility." Paper 61, 4. Accordingly, Petitioner's motion to exclude is denied.

CONCLUSION

For the foregoing reasons, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 3, 9, 10, 16, 22, 27–30, 35, and 36 are unpatentable under 35 U.S.C. § 103(a) over Thia,

Satran I, and Satran II and claims 24–26 are unpatentable under 35 U.S.C. § 103(a) over Thia, Satran I, Satran II, and Carmichael.

MOTIONS TO AMEND

Patent Owner filed a contingent motion to substitute independent claims 41, 49, and 50 for original claims 22, 35, and 36, respectively, and dependent claims 37–40 and 42–48 for original claims 3, 9, 10, 16, and 24–30, respectively, if the original claims are found unpatentable. Paper 20. Patent Owner also filed a supplemental contingent motion to substitute claims 51–53 for claims 31–33, respectively, if those claims were found unpatentable. Paper 57.

In a Motion to Amend, responsive to a ground of unpatentability involved in a trial, a Patent Owner may propose a reasonable number of substitute claims that do not expand the scope of the claim or introduce new matter. 35 U.S.C. § 316(d)(3), 37 C.F.R. § 42.121; *see Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1300–01 (Fed. Cir. 2017). A final substantive decision on the patentability of originally issued and amended claims must be based on the entirety of the IPR record, without placing the burden of persuasion on the Patent Owner. *See Aqua Prods*., 872 F.3d at 1325–26, 1328.

Proposed substitute claim 37 further limits original claim 3 by adding a recitation that fast-path processing reassembles the data portion of the response with a second data portion of a second response. Proposed substitute claims 38–40 further limit original claims 9, 10, and 16, respectively, by adding a recitation that fast-path processing reassembles the data of the packet with a second data of a second packet. Proposed

substitute claim 41 further limits original independent claim 22 by adding a recitation of receiving and processing a "second portion" of a response and that the first portion "and a second data portion of the second portion are reassembled." Proposed substitute claim 49 further limits original claim 35 by adding a recitation of receiving a "first and second" response and that the "first" data portion of the "first" response is placed "reassembled" into a memory "with a second data portion of the second response." Proposed substitute claim 50 further limits original claim 36 by adding a recitation of "receiving onto the host bus adapter a second response to the ISCSI solicited read request" and processing the "first and second responses" such that a "first" data portion of the "first" response is placed "reassembled with a second data portion of the second response" into memory. Proposed claim 51 further limits claim 31 by adding a recitation of a "first and second" data that "are reassembled." Proposed substitute claims 42–48, 52, and 53 change the dependencies of originals claims 24–30, 32, and 33, respectively. Papers 20, 57.

Written Description Support

Patent Owner argues that substitute claims 37–53 find written description support in the Specification. Paper 20, App'x A (citing Ex. 2022, Abstract, Figs 3, 4, 8, 11, ¶¶ [0008], [0009], [0056]–[0058], [0063], [0064], [0090]–[0097]); Paper 57, App'x A, App'x B. Petitioner contends that the Specification fails to provide sufficient written description support for any of substitute claims 37–53 because "there is no support for reassembly during fast-path processing." Paper 39, 4; Paper 66, 2. In particular, Petitioner argues that the citations to the Specification disclose

"reassembly [that] is done . . . outside of fast-path processing (*see, e.g.*, Paper 39, 5 (citing Ex. 2002 ¶ 92)). However, as Patent Owner points out, the Specification discloses that a "controller . . . responds . . . by . . . sending . . . frames over network . . . to INIC [i.e., a network interface]" and that "[t]he frames . . . received by the INIC . . . [are] reassembled." Ex. 2022 ¶ [0092]. In other words, the Specification discloses reassembly of data of a response in an INIC (i.e., in a network interface – or during "fast-path processing"). Accordingly, we determine that the Specification provides sufficient written description support for the proposed substitute claims.

Obviousness

Substitute claim 37 (corresponding to original claim 3) recites that the fast-path processing reassembles the data portion of the response with a second data portion of a second response. Substitute claims 38–53 recite a similar limitation. Papers 20, 57. Patent Owner argues that the substitute claims "are patentable over the cited art." Paper 20, 5. We are persuaded by Petitioner's arguments, however, that the substitute claims are unpatentable. Paper 39, 9–24.

Patent Owner argues that "*Thia* explicitly *rejects* doing reassembly in its bypass process." Paper 20, 5 (citing Ex. 1015, .014). Thia discloses that "[t]here is no segmentation/reassembly within the bypass path, but we do not see this as a major restriction, as research suggests that fragmentation of PDUs should be restricted only to the lower layers and should occur only once in the protocol stack." Ex. 1015, .014. In other words, Thia discloses an example in which "segmentation/reassembly" is not performed "within the bypass path" under the presumption that "fragmentation of PDUs [is]

restricted only to the lower layers" and "occur[s] only once." We also note that Thia discloses that one of skill in the art would have known that, under certain circumstances, "the full protocol stack can be offloaded." Ex. 1015, .002.

We are not persuaded by Patent Owner's argument that Thia supposedly "explicitly *rejects* doing reassembly in its bypass process" at least because, contrary to Patent Owner's implication, Thia merely discloses one example in which "segmentation/reassembly" need not be performed in the bypass stack because "segmentation/reassembly" is presumed to be "restricted only to the lower layers" and "occur[s] only once." In the example disclosed by Thia, resources required by processing "segmentation/reassembly" are minimal because "segmentation/reassembly" occurs only once and is restricted only to the lower layers. Therefore, in this example, Thia discloses that "segmentation/reassembly" need not be (and is not) performed in the bypass stack. Thia does not discourage one of skill in the art from performing "segmentation/reassembly" in the bypass stack when processing resources are more substantial (e.g., when occurring more than once or not being restricted only to the lower levels). This fact is confirmed by the explicit disclosure of Thia that it was known in the art that "the full protocol stack can be offloaded." Ex. 1015, .002. Therefore, it would have been obvious to one of ordinary skill in the art to have provided a system in which the "full protocol stack" (including "segmentation/reassembly") can be offloaded (as disclosed by Thia), which would have included processes that required a substantial amount of resources such as when "segmentation/reassembly" occurs more than once and/or is not restricted only to the lower levels (also disclosed by Thia) to achieve the predictable

and expected result of conserving processing resources by performing "segmentation/reassembly" in the bypass stack when "segmentation/reassembly" requires a substantial amount of processing resources.

In view of the above, Patent Owner's first Contingent Motion to Amend is denied.

Regarding Patent Owner's second Contingent Motion to Amend, we have determined that Petitioner has failed to establish that claims 31–33 are unpatentable and, thus, the contingency has not been met. *See* Paper 57, 1. Therefore, Patent Owner's second Contingent Motion to Amend is dismissed as moot.

MOTION TO SEAL

Patent Owner filed a Motion to Seal on February 23, 2018, requesting that we seal Exhibit 2038 and that we enter a protective order in this proceeding. Paper 30. On March 15, 2018, the parties filed a Joint Motion to Enter a Stipulated Protective Order, which was granted on March 27, 2018.

We have reviewed the motion to seal and we agree that good cause exists to seal the requested exhibit (Exhibit 2038). Accordingly, we grant the motion to seal.

The record will be maintained undisturbed, with Exhibit 2038 remaining sealed, pending the outcome of any appeal taken from this decision. At the conclusion of any appeal proceeding, or if no appeal is taken, the sealed document will be made public. *See* Office Patent Trial

Practice Guide, 77 Fed. Reg. 48,756, 48,760–61 (Aug. 14, 2012). Further, either party may file a motion to expunge the sealed document from the record pursuant to 37 C.F.R. § 42.56. Any such motion will be decided after the conclusion of any appeal proceeding or the expiration of the time period for appealing, and it will be denied with respect to any sealed document identified in this decision.

CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 3, 9, 10, 16, 22, 27–30, 35, and 36 are unpatentable under 35 U.S.C. § 103(a) over Thia, Satran I, and Satran II and that claims 24–26 are unpatentable under 35 U.S.C. § 103(a) over Thia, Satran I, Satran II, and Carmichael.

ORDERS

In consideration of the above it is:

ORDERED that claims 3, 9, 10, 16, 22, 24–30, 35, and 36 of the ’205 patent are unpatentable;

FURTHER ORDERED that claims 31–33 of the ’205 patent are not unpatentable;

FURTHER ORDERED that Patent Owner’s first Contingent Motion to Amend (Paper 20) is DENIED;

FURTHER ORDERED that Patent Owner’s second Contingent Motion to Amend (Paper 57) is DISMISSED as moot;

FURTHER ORDERED that Petitioner’s Motion to Exclude (Paper 60) is DENIED;

FURTHER ORDERED that Patent Owner's Motion to Seal (Paper 30) is GRANTED; and

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

FOR PETITIONER:

Garland T. Stephens
Jeremy Jason Lang
Anne Cappella
Adrian Percer
WEIL, GOTSHAL & MANGES LLP
Garland.stephens@weil.com
Jason.lang@weil.com
Anne.cappella@weil.com
Adrian.percer@weil.com

Patrick D. McPherson
David T. Xue
DUANE MORRIS LLP
PDMcPherson@duanemorris.com
DTXue@duanemorris.com

FOR PATENT OWNER:

James M. Glass
Joseph M. Paunovich
Brian E. Mack
Ziyong Li

QUINN EMANUEL URQUHART & SULLIVAN LLP
jimglass@guinnemanuel.com
joepaunovich@quinnemanuel.com
brianmack@quinnemanuel.com
seanli@quinnemanuel.com

Mark Lauer
SILICON EDGE LAW GROUP LLP
mark@siliconedgelaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION, CAVIUM, LLC, and DELL, INC.,
Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2017-01405
Patent 7,124,205 B2[6]

SIU, *Administrative Patent Judge*, Concurring-in-part, Dissenting-in-part.

I agree with the Majority decision and reasoning for challenged claims 3, 9, 10, 16, 22, 24–30, 35, and 36 but respectfully disagree with the Majority's position that Petitioner has failed to demonstrate by a preponderance of the evidence that claims 31–33 are unpatentable. Claims 31–33 recite "means . . . for fast-path processing a portion of the response to

---

[6] Cavium, Inc., which filed a Petition in Case IPR2017-01735, and Dell, Inc., which filed a Petition in Case IPR2018-00336, were joined as petitioners in this proceeding. According to updated mandatory notices filed in this proceeding, Cavium, Inc. has now been converted to Cavium, LLC. Paper 79.

the ISCSI read request command" and "for slow-path processing the subsequent portion" of the response to the ISCSI read request command. Ex. 1001. 46:15–29. In my view, Petitioner has demonstrated persuasively that claims 31–33 are unpatentable.

The Majority states that "'the Board has insufficient information with which to make a determination regarding the patentability of' claims 31–33" because the Majority "discern[s] no structure disclosed in the '205 patent Specification that is coupled to the host and performs *both* fast-path and slow-path processing." Maj. Dec. 17.

Both parties agree the claims should be construed under 35 U.S.C. § 112, sixth paragraph. Pet. 28–29; Prelim. Resp. 17. "For computer-implemented means-plus-function claims where the disclosed structure is a computer programmed to implement an algorithm," "the patent must disclose . . . enough of an algorithm to provide the necessary structure under § 112, ¶ 6." *Finisar Corp. v. DirecTV Group, Inc*., 523 F.3d 1323, 1340 (Fed. Cir. 2008). A "patentee [may] express that algorithm in any understandable terms including as a mathematical formula, in prose, . . . or as a flow chart, or in any other manner that provides sufficient structure." *Id*. In other words, a Specification provides sufficient "structure" for purposes of 35 U.S.C. § 112, sixth paragraph, when the Specification discloses "enough of an algorithm" in any format understandable to one of skill in the art. Also, "a general purpose computer programmed to carry out a particular algorithm creates a 'new machine' . . . [and] in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." *Aristrocrat Technologies Australia Pty Ltd. V. Int'l. Game Tech*., 521 F.3d 1328, 1333

(Fed. Cir. 2008) (citing *WMS Gaming, Inc. v. Int'l. Game Tech*., 184 F.3d 1339, 1348 (Fed. Cir. 1999).

The Specification discloses "a processor such as central processing unit (CPU) 30 . . . with an operating system . . . for overseeing various tasks and devices." Ex. 1001, 6:31–34. One such "task" includes "a header portion of an initial packet of a message is sent . . . to be processed by the CPU **30** and protocol stack **38**" in which "processing of the session layer header by a session layer of protocol stack **38** identifies the data as belonging to the file and indicates the size of the message." Ex. 1001, 8:63–64; 9:1–3. Also, "'slow-path' processing of the headers by the CPU **30** running protocol stack **38**" may be performed. In other words, the Specification discloses, in a format that would have been understandable to a skilled artisan (i.e., "prose"), an algorithm in which a "special purpose computer" performs "slow-path processing."

The Specification also discloses an algorithm in a format that would have been understandable to a skilled artisan (i.e., "prose") that includes "send[ing] the packet data directly to either INIC file cache **80** or host file cache **24**, according to a 'fast-path' . . . [which is] selected for . . . data traffic having plural packets per message that are sequential and error-free." Ex. 1001, 8:27–31; *see generally* Ex. 1001, 8:41–10:25. In other words, the Specification also provides an algorithm in which a "special purpose computer" performs "fast-path processing."

Despite these disclosures in the Specification, the Majority concludes that there is insufficient disclosure of "structure" for purposes of 35 U.S.C. § 112, sixth paragraph, because even though "the '205 patent Specification discloses structure that performs fast-path processing—namely INIC 22,"

"INIC 22 . . . does not perform *both* fast and slow processing," as recited in claim 31. Maj. Dec. 16, 17. The Majority does not appear to explain how the disclosure (in "prose") of sufficient algorithms that transform a general purpose computer into a "special purpose computer" performing slow- and fast-path processing (see above discussion) supposedly provides insufficient "structure" for purpose of 35 U.S.C. § 112, sixth paragraph.

Based on the Majority's focus on "INIC 22" as a "means for" fast-path processing and the "host" as a "means for" slow-path processing, it appears the Majority takes the position that disclosure of sufficient "structure" in the Specification for purposes of 35 U.S.C. § 112, sixth paragraph requires more than an algorithm (disclosed in an understandable format) that transforms a general purpose computer into a "special purpose computer." Specifically, the Majority appears to conclude that actual hardware devices are required. I cannot agree with the Majority's presumed conclusion based on at least the above discussion.

However, even assuming that actual hardware devices are required to satisfy the "structure" requirement of 35 U.S.C. § 112, sixth paragraph, I would still conclude that Petitioner has demonstrated by a preponderance of the evidence that the Specification discloses such "hardware devices." Patent Owner argues that the "means" as recited in claims 31–33 corresponds to "a network interface device, a processor in a network interface device, and equivalents thereof," as determined by the District Court in related proceedings. Paper 56, 5. Petitioner argues that the Specification fails to disclose that the "network interface device" or "processor in a network interface device" performs "slow path processing," as recited in claim 31. Paper 68, 3.

As Petitioner points out, the Specification discloses that the "network interface device, a processor in a network interface" and equivalents thereof, perform fast-path processing. The Majority agrees that the "INIC 22" constitutes the "structure" disclosed in the Specification corresponding to the claimed "means" fast-path processing. *See, e.g.*, Maj. Dec. 16. Petitioner also argues that "[t]he only structure disclosed by the 205 Patent that performs slow-path processing is the host computer." Pet. 85. As Petitioner alleges, the Specification discloses that "the CPU **30** running protocol stack **38**" performs slow path processing. Ex. 1001, 8:25–27. Patent Owner does not assert or demonstrate persuasively that the "CPU **30** running protocol stack **38**" also performs fast path processing and/or the network interface device also performs slow path processing.

Therefore, as Petitioner suggests, one of skill in the art would have understood that the "structure" (or actual hardware device, according to the Majority's presumed requirement) corresponding to the means for "fast path processing" *and* "slow path processing," as recited in claim 31, includes the "network interface device" (that performs fast path processing, as disclosed in the Specification) *and* "the CPU **30** running protocol stack **38**" (Ex. 1001, 8:25–27 – "'slow path' processing . . . by the CPU **30** running protocol stack **38**"), and equivalents thereof.

The Majority states that "[t]he recited means is coupled to the recited host" and "must perform both fast-path processing and slow-path processing." Maj. Dec. 17. While not entirely clear, it appears the Majority may take issue with the fact that claim 31 recites a "host computer" and a "means" that is "coupled to the host computer" such that, presumably, the "means" cannot include any portion of the "host computer." Assuming this

is the Majority's reasoning, I cannot agree with the Majority. Aside from the fact that claim 31 does not recite or otherwise require such a limitation, it is my view that, given the disclosure in the Specification that a host computer "contains a . . . CPU" and that the CPU contained within the host computer runs a "protocol stack 38" for fast-path processing (*see, e.g.*, Ex. 1001, 8:27-29), one of skill in the art would have understood that at least the "protocol stack" is "coupled to" the host computer (and the processor). The Majority does not elaborate on how one of skill in the art would have understood that a "protocol stack" contained within a processor that itself is coupled to the host computer (i.e., contained within the host computer) is somehow not "coupled to" the host computer. In any event, as noted above, in my view, there is no requirement for a disclosure of actual hardware devices to provide sufficient "structure" for purpose of 35 U.S.C. § 112, sixth paragraph.

Having determined that the Specification provides sufficient "structure" for purposes of 35 U.S.C. § 112, sixth paragraph, I would have proceeded to evaluate claims 31–33 on the merits as challenged by the Petitioner. In this regard, Patent Owner argues that Thia fails to disclose "any ***network layer bypass***," that Thia "merely describes ***theoretical*** advantages of bypassing communications layers," that Thia "does not preclude the host computer from performing any transport layer processing on 'the response' or 'the packet,'" that "Thia explicitly rejects bypassing reassembly," that "it is unlikely a person of skill in the art would see any reason to modify Thia in any way," and that there is supposedly "strong objective indicia of nonobviousness." Paper 56, 9–10, 12–14. These arguments were previously addressed. Therefore, I would have concluded

that claims 31–33 have been demonstrated to be unpatentable. *See, e.g.*, Paper 68, 4–7.

Trials@uspto.gov
571-272-7822

Paper No. 8
Entered: December 15, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAVIUM, INC.,
Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2017-01735
Patent 7,124,205 B2

Before STEPHEN C. SIU, DANIEL N. FISHMAN, and CHARLES J. BOUDREAU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review and
Granting Petitioner's Motion for Joinder
35 U.S.C. §§ 314(a), 315(c); 37 C.F.R. §§ 42.108, 42.122

I. INTRODUCTION

Cavium, Inc. ("Cavium" or "Petitioner"), filed a Petition (Paper 1, "Pet.") for *inter partes* review of claims 3, 9, 10, 16, 22, 24–33, 35, and 36 of U.S. Patent No. 7,124,205 B2 ("the '205 Patent") (Ex. 1001) pursuant to 35 U.S.C. §§ 311–319. Within days of filing the Petition, Petitioner filed a Motion for Joinder. Paper 3 ("Joinder Motion" or "Mot."). The Joinder Motion seeks to join Petitioner as a party to *Intel Corp. v. Alacritech*, Case IPR2017-01405 ("the 1405 IPR"). Mot. 1. The Joinder Motion indicates Intel Corp. ("Intel"), Petitioner in the 1405 IPR, does not oppose Cavium's request to join that proceeding. *Id.*

As explained further below, we institute trial in this *inter partes* review on the same grounds as instituted in IPR2017-01405 for claims 3, 9, 10, 16, 22, 24–30, 35, and 36 and we grant Petitioner's Motion for Joinder.

II. DISCUSSION

A. Institution of Trial

In IPR2017-01405, Petitioner Intel challenges the patentability of claims 3, 9, 10, 16, 22, 24–33, 35, and 36 of the '205 Patent on the following grounds:

Reference(s)	Basis	Claims challenged
Thia,[1] Satran I,[2] and Satran II[3]	§ 103	3, 9, 10, 16, 22, 27–33, 35, and 36
Thia, Satran I, Satran II, and Carmichael[4]	§ 103	24–26

IPR2017-01405, Paper 1.

After considering the Petition and the Patent Owner's Preliminary Response in IPR2017-01405, we instituted trial for claims 3, 9, 10, 16, 22, 27–30, 35, and 36 under 35 U.S.C. § 103(a) as unpatentable over Thia, Satran I, and Satran II and claims 24–26 under 35 U.S.C. § 103(a) as unpatentable over Thia, Satran I, Satran II, and Carmichael. *See* IPR2017-01405, Paper 8. Petitioner here (Cavium) represents that this Petition is substantively identical to the Petition in IPR2017-01405 and challenges the same claims based on the same grounds. Mot. 1. We have considered the relevant Petitions and we agree with Petitioner's representation that this Petition is substantially identical to the Petition in IPR2017-01405. *Compare* Pet., *with* IPR2017-01405, Paper 1.

Patent Owner's Preliminary Response does not point out any differences from its Preliminary Response in the 1405 IPR. However, after reviewing Patent Owner's Preliminary Response here and in the 1405 IPR, we find the two responses to be substantially identical, with one exception.

[1] Y.H. Thia and C.M. Woodside, "A Reduced Operation Protocol Engine (ROPE) for a Multiple-Layer Bypass Architecture," 1995 ("Thia," Ex. 1015).
[2] J. Satran, et al., "SCSI/TCP (SCSI over TCP)," 2000 ("Satran I," Ex. 1056).
[3] J. Satran, et al., "iSCSI (Internet SCSI)," 2000 ("Satran II," Ex. 1057).
[4] US Patent 5,894,560, issued April 13, 1999 ("Carmichael," Ex. 1053).

We note that, here, Patent Owner argues that QLogic, Inc. ("QLogic") should have been named as a real party-in-interest because QLogic, a wholly owned subsidiary of Cavium, is a supplier to, and indemnitor of, Dell (the defendant in related infringement litigation), and Cavium's only interest in the '205 patent is that of its subsidiary QLogic. *See* Prelim. Resp. 28–36. In the 1405 IPR, Patent Owner presented a similar argument in its Preliminary Response that Petitioner Intel should have named Cavium and Dell as real parties-in-interest because of the alleged supplier-indemnitor relationship between Intel and Dell and Cavium and Dell. IPR2017-01405, Paper 7. Here, Patent Owner argues the parent/subsidiary relationship between Petitioner and QLogic and the supplier/indemnitor relationship between QLogic and Dell require that QLogic be named as a real party-in-interest. *See* Prelim. Resp. 28–36.

We have reviewed Patent Owner's arguments. On the record before us and for purposes of this Decision, and for the similar reasons as in the 1405 IPR, we determine there is insufficient evidence that QLogic controlled, or had the opportunity to control, this Petition and, thus, is not a real party-in-interest. *See* Case IPR2017-01405, Paper 8, 15–19. Moreover, as in the 1405 IPR, there is no allegation that naming additional real parties-in-interest such as QLogic or Dell would bar Petitioner in the instant proceeding. *See id*. Accordingly, the issue Patent Owner raises is not jurisdictional. *See Lumentum Holdings, Inc. v. Capella Photonics, Inc*., Case IPR2015-00739, slip op. at 6 (PTAB March 4, 2016) (Paper 38) (precedential).

Accordingly, for essentially the same reasons stated in our Decision to Institute in IPR2017-01405, we conclude Petitioner has established a

reasonable likelihood of prevailing with respect to at least one challenged claim and we institute trial in this proceeding for claims 3, 9, 10, 16, 22, 24–30, 35, and 36 on the same grounds as in IPR2017-01405.

B. Motion for Joinder

Based on authority delegated to us by the Director, we have discretion to join a petitioner for *inter partes* review to a previously instituted *inter partes* review. 35 U.S.C. § 315(c). Section 315(c) provides, in relevant part, that "[i]f the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311." *Id*.

Without opposition to the Joinder Motion from any party, we grant Petitioner's Motion for Joinder with the 1405 IPR, subject to the condition that Cavium will be bound by all substantive and procedural filings and representations of Intel in the 1405 IPR, without a separate opportunity to be heard, whether orally or in writing, unless and until the proceeding is terminated with respect to Intel.

In view of the foregoing, we determine that joinder based upon the above-noted condition will have little or no impact on the timing, cost, or presentation of the trial on the instituted grounds. Moreover, discovery and briefing will be simplified if Cavium is joined as a party to the 1405 IPR.

III. ORDER

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted for claims of the ’205 Patent as follows: (1) claims 3, 9, 10, 16, 22, 27–30, 35, and 36 as obvious under 35 U.S.C. § 103(a) over Thia, Satran I, and Satran II and (2) claims 24–26 as obvious under 35 U.S.C. § 103(a) over Thia, Satran I, Satran II, and Carmichael;

FURTHER ORDERED that Petitioner’s Motion for Joinder with IPR2017-01405 is *granted* and Cavium, Inc. is joined as a petitioner in IPR2017-01405;

FURTHER ORDERED that the grounds on which an *inter partes* review was instituted in Case IPR2017-01405 remain unchanged, and no other grounds are instituted in the joined proceedings;

FURTHER ORDERED that Petitioner here (i.e., Cavium, Inc.) will be bound in IPR2017-01405 by all substantive and procedural filings and representations of current Petitioner in IPR2017-01405 (i.e., Intel Corp.), without a separate opportunity to be heard, whether orally or in writing, unless and until the proceeding is terminated with respect to Intel Corp.;

FURTHER ORDERED that the Scheduling Order in place for IPR2017-01405 (Paper 9) shall govern the proceeding;

FURTHER ORDERED that IPR2017-01735 is terminated under 37 C.F.R. § 42.72, and that all future filings are to be made only in IPR2017-01405;

FURTHER ORDERED that the case caption in IPR2017-01405 for all further submissions shall be changed to add Petitioner (Cavium, Inc.) as a

named Petitioner, and to indicate by footnote the joinder of Petitioner Cavium, Inc. to that proceeding, as indicated in the attached sample case caption; and

FURTHER ORDERED that a copy of this Decision shall be entered into the record of IPR2017-01405.

PETITIONER:

Patrick McPherson
pdmcpherson@duanemorris.com

David Xue
dtxue@duanemorris.com

PATENT OWNER:

Jim Glass
jimglass@quinnemanuel.com

Joseph Paunovich
joepaunovich@quinnemanuel.com

Brian Mack
brianmack@quinnemanuel.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORP. and
CAVIUM, INC.,
Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2017-01405[1]
Patent 7,124,205 B2

[1] Cavium, Inc., which filed a Petition in Case IPR2017-01735, has been joined as a petitioner in this proceeding.

Trials@uspto.gov
571-272-7822

Paper No. 9
Entered: May 18, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DELL, INC.,
Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2018-00336
Patent 7,124,205 B2

Before STEPHEN C. SIU, DANIEL N. FISHMAN, and CHARLES BOUDREAU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review and
Granting Petitioner's Motion for Joinder
35 U.S.C. § 314(a), 37 C.F.R. §§ 42.108, 42.122

I. INTRODUCTION

Dell, Inc. ("Dell" or "Petitioner") filed a Petition (Paper 2, "Pet.") for *inter partes* review of claims 3, 9, 10, 16, 22, 24–30, 35, and 36 of U.S. Patent No. 7,124,205 B2 ("the '205 Patent") (Ex. 1001) pursuant to 35 U.S.C. §§ 311–319. Petitioner also filed a Motion for Joinder. Paper 3 ("Joinder Motion" or "Mot."). The Joinder Motion seeks to join Dell as a petitioner in *Intel Corp. v. Alacritech*, Case IPR2017-01405 ("the 1405 IPR"), to which Cavium, Inc. ("Cavium") has previously been joined. Mot. 1; *see* IPR2017-01735, Paper 8. The Joinder Motion indicates Intel Corp. ("Intel") and Cavium, current Petitioners in the 1405 IPR, do not oppose Dell's request to join the proceeding. *Id.* Alacritech, Inc. ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp.").

As explained further below, we institute trial in this *inter partes* review on the same grounds as instituted in IPR2017-01405 for claims 3, 9, 10, 16, 22, 24–30, 35, and 36, and we grant Petitioner's Motion for Joinder.

II. DISCUSSION

A. Institution of Trial

In IPR2017-01405, Intel and Cavium challenge the patentability of claims 3, 9, 10, 16, 22, 24–33, 35, and 36 of the '205 Patent on the following grounds:

Reference(s)	Basis	Claims challenged
Thia,[1] Satran I,[2] and Satran II[3]	§ 103	3, 9, 10, 16, 22, 27–33, 35, and 36
Thia, Satran I, Satran II, and Carmichael[4]	§ 103	24–26

IPR2017-01405, Paper 1.

After considering the Petition and the Patent Owner's Preliminary Response in IPR2017-01405, we instituted trial for claims 3, 9, 10, 16, 22, 27–30, 35, and 36 under 35 U.S.C. § 103(a) as unpatentable over Thia, Satran I, and Satran II and claims 24–26 under 35 U.S.C. § 103(a) as unpatentable over Thia, Satran I, Satran II, and Carmichael. *See* IPR2017-01405, Paper 8. Petitioner here (Dell) represents that this Petition is substantively identical to the Petition in IPR2017-01405 and challenges the same claims based on the same grounds. Mot. 1. We have considered the relevant Petitions and we agree with Petitioner's representation that this Petition is substantially identical to the Petition in IPR2017-01405. *Compare* Pet., *with* IPR2017-01405, Paper 1.

Accordingly, for essentially the same reasons stated in our Decision to Institute in IPR2017-01405, we conclude Petitioner has established a reasonable likelihood of prevailing with respect to at least one challenged

[1] Y.H. Thia and C.M. Woodside, "A Reduced Operation Protocol Engine (ROPE) for a Multiple-Layer Bypass Architecture," 1995 ("Thia," Ex. 1015).
[2] J. Satran, et al., "SCSI/TCP (SCSI over TCP)," 2000 ("SatranI," Ex. 1056).
[3] J. Satran, et al., "iSCSI (Internet SCSI)," 2000 ("SatranII," Ex. 1057).
[4] US Patent 5,894,560, issued April 13, 1999 ("Carmichael," Ex. 1053).

claim, and we institute trial in this proceeding for claims 3, 9, 10, 16, 22, 24–30, 35, and 36 on the same grounds as in IPR2017-01405.

B. Motion for Joinder

Based on authority delegated to us by the Director, we have discretion to join a petitioner for *inter partes* review to a previously instituted *inter partes* review. 35 U.S.C. § 315(c). Section 315(c) provides, in relevant part, that "[i]f the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311." *Id.*

Without opposition to the Joinder Motion from any party, we grant Petitioner's Motion for Joinder with the 1405 IPR subject to the condition that, in the joined proceeding, Dell will be bound by all substantive and procedural filings and representations of Intel and Cavium in the 1405 IPR, without a separate opportunity to be heard, whether orally or in writing, unless and until the joined proceeding is terminated with respect to both Intel and Cavium.

In view of the foregoing, we determine that joinder based upon the above-noted condition will have little or no impact on the timing, cost, or presentation of the trial on the instituted grounds. Moreover, discovery and briefing will be simplified if Dell is joined as a petitioner in the 1405 IPR.

III. ORDER

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted for claims of the '205 Patent as follows: (1) claims 3, 9, 10, 16, 22, 27–30, 35, and 36 as obvious under 35 U.S.C. § 103(a) over Thia, Satran I, and Satran II and (2) claims 24–26 as obvious under 35 U.S.C. § 103(a) over Thia, Satran I, Satran II, and Carmichael;

FURTHER ORDERED that Petitioner's Motion for Joinder with IPR2017-01405 is *granted* and Dell, Inc., is joined as a petitioner in IPR2017-01405 pursuant to 37 C.F.R. § 42.122(b), on the condition that, in the joined proceeding, Petitioner here (i.e., Dell, Inc.) will be bound by all substantive and procedural filings and representations of current Petitioner in IPR2017-01405 (i.e., Intel Corp. and Cavium, Inc.), without a separate opportunity to be heard, whether orally or in writing, unless and until the joined proceeding is terminated with respect to Petitioner Intel and Cavium in IPR2017-01405;

FURTHER ORDERED that the grounds on which an *inter partes* review was instituted in Case IPR2017-01405 remain unchanged, and no other grounds are instituted in the joined proceedings;

FURTHER ORDERED that the Scheduling Order in place for IPR2017-01405 (Paper 9) shall govern the joined proceedings;

FURTHER ORDERED that IPR2018-00336 is terminated under 37 C.F.R. § 42.72, and that all future filings in the joined proceeding are to be made only in IPR2017-01405;

FURTHER ORDERED that the case caption in IPR2017-01405 for all further submissions shall be changed to add Petitioner (Dell, Inc.) as a named Petitioner, and to indicate by footnote the joinder of Petitioner Dell to that proceeding, as indicated in the attached sample case caption; and

FURTHER ORDERED that a copy of this Decision shall be entered into the record of IPR2017-01405.

PETITIONER:

Christopher Douglas
christopher.douglas@alston.com

Kirk Bradley
kirk.bradley@alston.com

PATENT OWNER:

Jim Glass
jimglass@quinnemanuel.com

Joseph Paunovich
joepaunovich@quinnemanuel.com

Brian Mack
brianmack@quinnemanuel.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORP., CAVIUM, INC., and DELL, INC.

Petitioner,

v.

ALACRITECH, INC.,
Patent Owner.

Case IPR2017-01405[1]
Patent 7,124,205 B2

[1] Cavium, Inc., which filed a Petition in Case IPR2017-01735, and Dell, Inc, which filed a Petition in Case IPR2018-00336, have been joined as petitioners in this proceeding.