

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARISTA NETWORKS, INC.,
Petitioner,

v.

CISCO SYSTEMS, INC.,
Patent Owner.

Case IPR2015-01049
Patent 6,377,577 B1

Before BRYAN F. MOORE, MATTHEW R. CLEMENTS, and
PETER P. CHEN, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, Arista Networks, Inc., filed a Petition for *inter partes* review of claims 1, 2, 5, 7–10, 12–16, 18–22, 25, and 28–31 of U.S. Patent No. 6,377,577 B1 (Ex. 1001, “the ’577 patent”). Paper 2 (“Pet.”). Patent Owner, Cisco Systems, Inc., filed a Preliminary Response. Paper 6

(“Prelim. Resp.”). Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see* 37 C.F.R. § 42.108. Upon consideration of the Petition and the Preliminary Response, we conclude the information presented does not show there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of any of claims 1, 2, 5, 7–10, 12–16, 18–22, 25, and 28–31 of the ’577 patent and, therefore, deny the Petition for *inter partes* review..

A. Related Matters

The parties state that the ’577 patent is the subject of *Cisco Systems, Inc. v. Arista Networks, Inc.*, No. 4:14-cv-05343-JSW (N.D. Cal.), filed December 5, 2014, and ITC Inv. No. 337-TA-945 (Network Devices, Related Software and Components Thereof (II)), filed December 19, 2014). Pet. 1; Paper 5 (Patent Owner’s Mandatory Notice). The ’577 patent is also the subject of IPR2015-00973. Petitioner has also filed petitions requesting *inter partes* review of other patents owned by Patent Owner: IPR2015-00974 (U.S. 7,224,668), IPR2015-00975 (U.S. Patent No. 8,051,211), IPR2015-00976 (U.S. Patent No. 7,023,853), IPR2015-00978 (U.S. Patent No. 7,340,597), and IPR2015-01050 (U.S. Patent No. 7,023,853).

B. The ’577 Patent

The ’577 patent is titled, “Access Control List Processing in Hardware,” and relates generally to a method for performing access control list processing in hardware using an associative memory. Ex. 1001, Abstract. Data packets transmitted between network devices can be

restricted using a technique known as “access control.” *Id.* at 1:6–7. One access control technique is to use access control lists or “ACLs” to determine whether to permit or deny transmission of a packet to a particular destination. *Id.* at 1:13–15 (“[T]he ACL describes which selected source devices are permitted (and which denied) to send packets to which selected destination devices.”).

The Specification provides an example of a known ACL format, where each ACL includes “access control specifiers.” *Id.* at 1:17. These specifiers contain information to match with incoming packets, and then based on a match, specify a particular access result (e.g., whether transmission of a packet is “specifically permitted or specifically denied”). *Id.* at 1:16–27. Figure 1 of the ’577 patent is reproduced below.

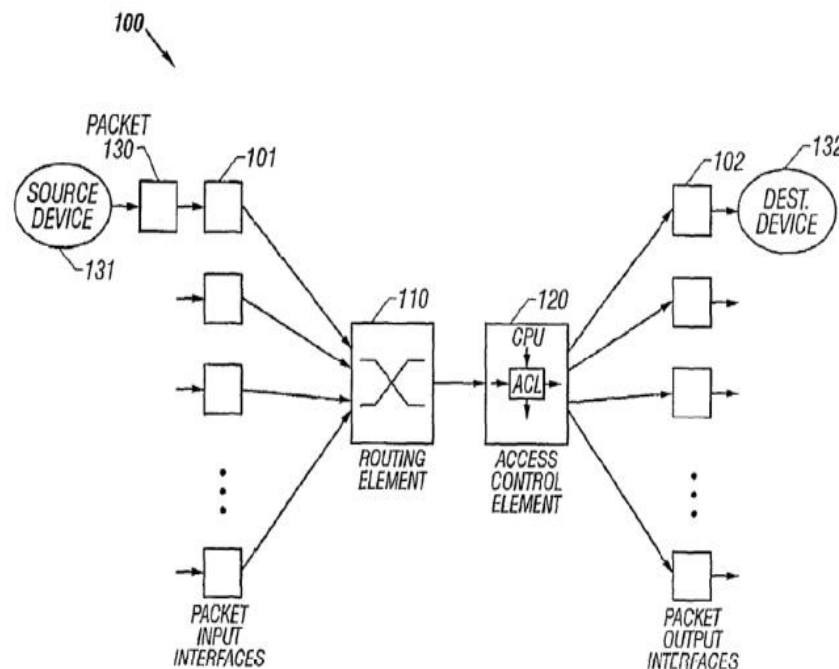


FIG. 1

Figure 1 is a block diagram of a system for performing access control in accordance with the '577 patent. As shown in Figure 1, packet 130 arrives at one of the system's packet interfaces 101. *Id.* at 3:30–31. Routing element 110 then selects one or more of the output interfaces to which the packet should be forwarded. *Id.* at 3:32–36. Prior to forwarding, access control element 120 determines whether to allow transmission of the packet. *Id.* at 3:36–40. Figure 2 of the '577 patent is reproduced below.

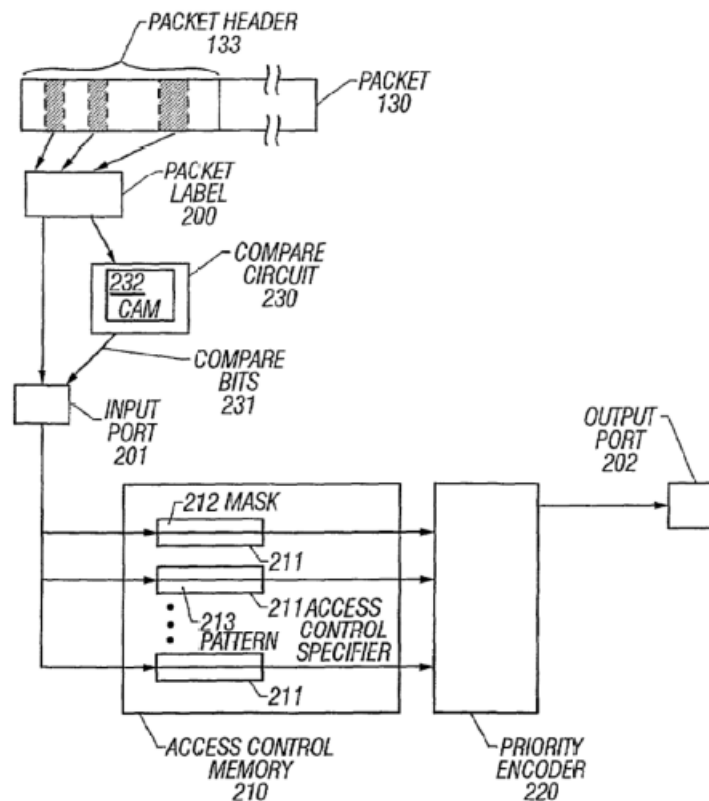


FIG. 2

Figure 2 is a block diagram of an access control element which contains access control patterns. When packet 130 arrives at access control element 120, a packet label 200 is created based on information derived from packet

header 133 of packet 130. *Id.* at 4:1–4. The packet label goes to access control memory 210, which attempts to match information from the packet label to access control specifiers in memory 211. *Id.* at 4:34–47.

To perform this matching process, packet label 200 is compared to label match mask 212 and label match pattern 213 of each access control specifier 211. *Id.* If a match is found with a particular access control pattern, priority encoder 200 selects the corresponding access control specifier 211 with the highest priority and provides an indicator of that access control specifier 211 to output port 202. *Id.* at 4:47–56. The indicator specifies an access control result, which specifies if the packet should be transmitted. *Id.* at 4:57–65.

C. Illustrative Claim

Claim 1 of the challenged claims of the '577 patent is independent.

Claim 1 is illustrative of the claimed subject matter:

1. A method, including the steps of
 - maintaining a set of access control patterns in at least one associative memory;
 - receiving a packet label responsive to a packet, said packet label being sufficient to perform access control processing for said packet;
 - matching matchable information, said matchable information being responsive to said packet label, with said set of access control patterns in parallel, and generating a set of matches in response thereto, each said match having priority information associated therewith;
 - selecting at least one of said matches in response to said priority information, and generating an access result in response to said at least one selected match; and
 - making a routing-decision in response to said access result.

D. Asserted Grounds of Unpatentability

Petitioner contends that claims 1, 2, 5, 7–10, 12–16, 18–22, 25, and 28–31 of the '577 patent are unpatentable based on the following specific grounds (Pet. 10–45):

References	Basis	Challenged Claim(s)
Feldmeier ¹	35 U.S.C. § 102	1, 2, 5, 7–10, 12–16, 28, 29
Feldmeier and Hendel ²		18–22, 25
Feldmeier and Muller ³	35 U.S.C. § 103	22, 28, 29, 31
Feldmeier, Muller, and knowledge of one of ordinary skill	35 U.S.C. § 103	30
Feldmeier, Muller, and Elliot ⁴	35 U.S.C. § 103	25

II. DISCUSSION

A. Claim Construction

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015). Consistent with the broadest reasonable construction, claim terms are

¹ U.S. Patent No. 5,920,886, filed March 14, 1997, issued July 6, 1999 (Ex. 1005, “Feldmeier”).

² U.S. Patent No. 6,081,522, filed June 30, 1997, issued June 27, 2000 (Ex. 1007, “Hendel”).

³ U.S. Patent No. 5,938,736, filed June 30, 1997, issued Aug. 17, 1999 (Ex. 1008, “Muller”).

⁴ U.S. Patent No. 5,867,495, filed Nov. 18, 1996, issued Feb. 2, 1999 (Ex. 1019, “Elliot”).

presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes constructions for the terms “access control,” “associative memory,” “packet label,” “responsive,” and “megapacket.” Pet. 6–9. We determine that the terms “associative memory,” “packet label,” “responsive,” and “megapacket” do not require express construction for purposes of our Decision.

As to the term “access control,” Petitioner asserts that “[a] person of skill in the art would have understood ‘access control’ to encompass restrictions or modifications of the transmission of a packet.” Pet. 6. Petitioner relies on the following passage from the Specification:

[T]he invention can be used to augment or override routing decisions otherwise made by the router, using the access control element 120. In addition to specifying the packet 130 is to be dropped or forwarded to the higher-level processor, the access control element 120 can alter the output interface, which was selected by the routing element 110, to another selected output interface. The invention can thus be used to implement QOS (quality of service), and other administrative policies.

Ex. 1001, 6:9–18.

Patent Owner asserts “the plain and ordinary meaning of ‘access control’ is ‘restriction of packets from being transmitted from selected source devices to selected destination devices.’” Prelim.

Resp. 10. Patent Owner relies on the following passage from the Specification (*id.*):

In a computer network for transmitting information, messages can be restricted from being transmitted from selected source devices to selected destination devices. In known computer networks, this form of restriction is known as “access control” and is performed by routers, which route messages (in the form of individual packets of information) from source devices to destination devices.

Ex. 1001, 1:4–10. Patent Owner also cites certain dictionary definitions. *Id.* at 10–11. Patent Owner states that “modifying” transmission is “nowhere in the record.” *Id.* Nonetheless, Patent Owner does not explain why the embodiment cited by the Petitioner above is not relevant to construing the claims.

Because the embodiment cited by Petitioner suggests that access control may be used to change the destination address of a packet, we apply a broader definition than proposed by Patent Owner. We find the broadest reasonable construction of “access control” to include restrictions or modifications on the intended destination address to which a packet is to be transmitted.

Patent Owner also asserts that the terms “access result” and “access control specifiers” should be limited to permit or deny decisions about packets based on essentially the same argument as above. Prelim Resp. 11–12, 14–15. Petitioner does not provide a construction for those terms. We decline to limit those terms as Patent Owner requests for the same reasons stated above.

We find that no other claim terms need to be explicitly defined.

B. Asserted Anticipation by Feldmeier

Petitioner contends that claims 1, 2, 5, 7–10, 12–16, 28, and 29 are unpatentable under 35 U.S.C. § 102 as anticipated by Feldmeier. Pet. 14–33. Petitioner relies on the testimony of Dr. H. Johnathan Chao. Ex. 1003.

1. Feldmeier (Ex. 1005)

Feldmeier describes techniques for a networking device to perform hierarchical address translation and filtering. Ex. 1005, 1:7–10. Feldmeier specifically describes using a content addressable memory (“CAM”) to aid in hierarchical address translation (i.e., routing packets to the correct network based on the hierarchical organization of network addresses). *Id.* at 5:32–35, 13:19–21. When a packet is received, Feldmeier describes reviewing the packet header information and performing a lookup against the information stored in the CAM. *Id.* at Fig.14, 13:24–27. Based on performing a lookup, a decision is made about whether to pass the packet forward, or to discard it. *Id.* Feldmeier also describes how to choose between multiple matches using the relative priority of the various matched entries in the CAM. *Id.* 11:10–12.

2. Analysis

Petitioner contends that Feldmeier discloses all the limitations of independent claim 1 and of dependent claims 2, 5, 7–10, 12–16, 28, and 29. As to claim 1, Petitioner asserts Feldmeier discloses maintaining access control patterns in an associative memory including receiving a packet label, matching information from the packet label with the access control patterns to generate a match with an associated priority, then generating a result based on a selected match and making a routing decision in response to that result. Pet. 14–21 (citing Ex. 1003 ¶¶ 61–69).

Claim 1 recites determining forwarding permission for the packet, “matching matchable information . . . with said set of access control patterns in parallel, and generating a set of matches in response thereto” and “generating an access result in response to said at least one selected match” Ex. 1001, 7:39–47. Petitioner asserts Feldmeier discloses these limitations because “Feldmeier [discloses] searching the CAM for the address that was extracted from the packet . . . and Feldmeier states that the ‘comparand’ in the search is ‘the address that is being searched for in the CAM.’ Pet. 18 (citing Ex. 1005, 10:64–66.). In other words, Petitioner asserts the address matching is the claimed “matching.” Petitioner further asserts Feldmeier discloses that a packet will either be discarded or routed on to a destination depending on the information received following the CAM lookup. Ex. 1005, 13:24–27 (“Demultiplexer 1430 routes the packet received from input packet queue 1410 to either output packet queue 1450 or to discard line 1460 depending on the signal received from network address lookup 1440.”); see *also id.* at Fig.14.

Patent Owner argues Feldmeier does not disclose “generating an access result in response to said at least one selected match.” Prelim. Resp. 21–25. Although we did not adopt Patent Owner’s proposed construction of “access control,” Patent Owner nevertheless makes a salient argument. Patent Owner asserts “the ‘address of the matching entry,’ [of Feldmeier] at most, provides a destination for Feldmeier’s system to forward the packet (i.e., an ordinary packet forwarding or routing decision that does not include the step of access control).” *Id.* at 22. Patent Owner continues, stating “[i]n fact, where a matching address entry is found, the packet is forwarded; there

is no disclosure to generate any access result to restrict access to the destination identified in the table.” *Id.*

We note that Feldmeier discloses that “[a]ddress filtering is a process similar to address translation, except that rather than retrieving the data associated with an address, the process simply determines whether the address exists in a table of addresses.” Ex. 1005, 1:19–22. Feldmeier further discloses that “[t]he term address translation, as used herein, includes both address translation and address filtering operations.” *Id.* at 1:22–24. Also, as cited by Petitioner, “Demultiplexer 1430 routes the packet . . . to either output packet queue 1450 or to discard line 1460 depending on the signal received from network address lookup 1440.” *Id.* at 13:24–27. Finally, “[n]etwork address lookup 1440 is an apparatus for performing hierarchical address translation[s] according to an embodiment of the invention.” *Id.* at 13:19–22. These passages suggest that a translation that yields no match (filtering) results in the packet being sent to the discard line.

In contrast, the Specification supports that a successful match leading to a forwarding permission is contemplated by the claims. Ex. 1001, 7:1–12, 27–39 (determining an input [or output] permission by, among other things, “determining all of the successful matches”); *see also* Prelim. Resp. 24 (“Feldmeier never discloses that its firewall device makes a decision to permit or deny a packet based on a matching entry in the network address lookup.”). Based on the above passages, Petitioner has not shown that, even under our broad construction of access control, an affirmative match in Feldmeier can result in a modification or a denial of packet forwarding, as required by claim 1.

For the reasons stated above, we determine Petitioner has not shown sufficiently that Feldmeier discloses all of the limitations of independent claim 1. Accordingly, the information presented does not show a reasonable likelihood that Petitioner would prevail in showing that independent claim 1, or claims 2, 5, 7–10, 12–16, 28, and 29 that depend therefrom, are anticipated by Feldmeier.

C. Asserted Obviousness Grounds

Petitioner argues that: dependent claims 18–22, 25 are unpatentable under 35 U.S.C. § 103(a) over Feldmeier and Hendel; dependent claims 22, 28, 29, and 31 are unpatentable under 35 U.S.C. § 103(a) over Feldmeier and Muller; dependent claim 30 is unpatentable under 35 U.S.C. § 103(a) over Feldmeier, Muller, and the knowledge of one of ordinary skill; and dependent claim 25 is unpatentable under 35 U.S.C. § 103(a) over Feldmeier, Muller, and Elliot. As discussed above, Petitioner has not shown sufficiently that Feldmeier discloses “generating an access result in response to said at least one selected match,” as is required by independent claim 1. Additionally, for these grounds, Petitioner does not rely on Hendel, Muller, Elliot, or the knowledge of one of ordinary skill to teach or suggest this limitation or otherwise cure the deficiency in Feldmeier. Thus, upon review of Petitioner’s analysis and supporting evidence and Patent Owner’s analysis and supporting evidence, we determine that Petitioner has not demonstrated that there is a reasonable likelihood that it would prevail with respect to the ground that claims 1, 2, 5, 7–10, 12–16, 18–22, 25, and 28–31 are unpatentable.

III. CONCLUSION

For the foregoing reasons, we determine that the information presented does not show that there is a reasonable likelihood that Petitioner would prevail at trial with respect to at least one claim of the '577 patent, based on any grounds presented in the Petition. On this record, we deny the Petition for *inter partes* review of claims 1, 2, 5, 7–10, 12–16, 18–22, 25, and 28–31.

ORDER

Accordingly, it is

ORDERED that that the Petition is DENIED as to all challenged claims, and no trial is instituted.

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