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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHANE M. AMANTE and
DONALD J. FENDRICK

Appeal 2016-008545
Application 11/314,103
Technology Center 2400

Before JOHN P. PINKERTON, JON M. JURGOVAN, and NABEEL U. KHAN, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] seek review under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–13 and 15–21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.[2]

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[1] The real party in interest is Level 3 Communications, LLC. App. Br. 2.

[2] Our Decision refers to the Specification ("Spec.") filed December 21, 2005, the Final Office Action ("Final Act.") mailed April 9, 2015, the Appeal Brief ("App. Br.") filed February 11, 2016, and the Examiner's Answer ("Ans.") mailed July 19, 2016.

CLAIMED INVENTION

The claims are directed to an inter-working device and functionality to translate and bridge Internet protocol (IP) packets between a Synchronous Optical Network (SONET) / Synchronous Digital Hierarchy (SDH) and Ethernet networks. Spec. 1, Abstract. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method for terminating SONET/SDH circuits in an IP network to deliver IP packets, comprising:
>
> providing a Gateway having a network element for receiving IP packets from the SONET/SDH circuits in one of a point-to-point protocol and a high-level-data-link-control protocol and an IP router for routing the IP packets to their final destinations,
>
> providing an access side interface between the network element and the SONET/SDH circuits, wherein the access side interface enables communication of IP packets between access-side customer provided equipment and the network element via at least the SONET/SDH circuits;
>
> providing an Ethernet interface between the network element and the IP router; and
>
> translating and bridging the IP packets received at the network element from the SONET/SDH circuits onto the Ethernet interface for transmission to the IP router.

App. Br. 16 (Claims Appendix).

REJECTION

Claims 1, 5–7, 11, and 12 stand rejected under 35 U.S.C. § 103(a) based on Havala (US 2005/0265355 A1, Dec. 1, 2005) and Patenaude (US 2004/0076166 A1, Apr. 22, 2004). Final Act. 3–6.

Claims 2–4, 8–10, and 18–20 stand rejected under 35 U.S.C. § 103(a) based on Havala, Patenaude, and Olsson (US 7,317,733 B1, Jan. 8, 2008). Final Act. 6–8.

Claims 13 and 15–17 stand rejected under 35 U.S.C. § 103(a) based on Havala and Olsson. Final Act. 8–10.

Claim 21 stands rejected under 35 U.S.C. § 103(a) based on Havala, Olsson, and Patenaude. Final Act. 10–11.

ANALYSIS

Background

Figure 3 of the Specification is shown below.

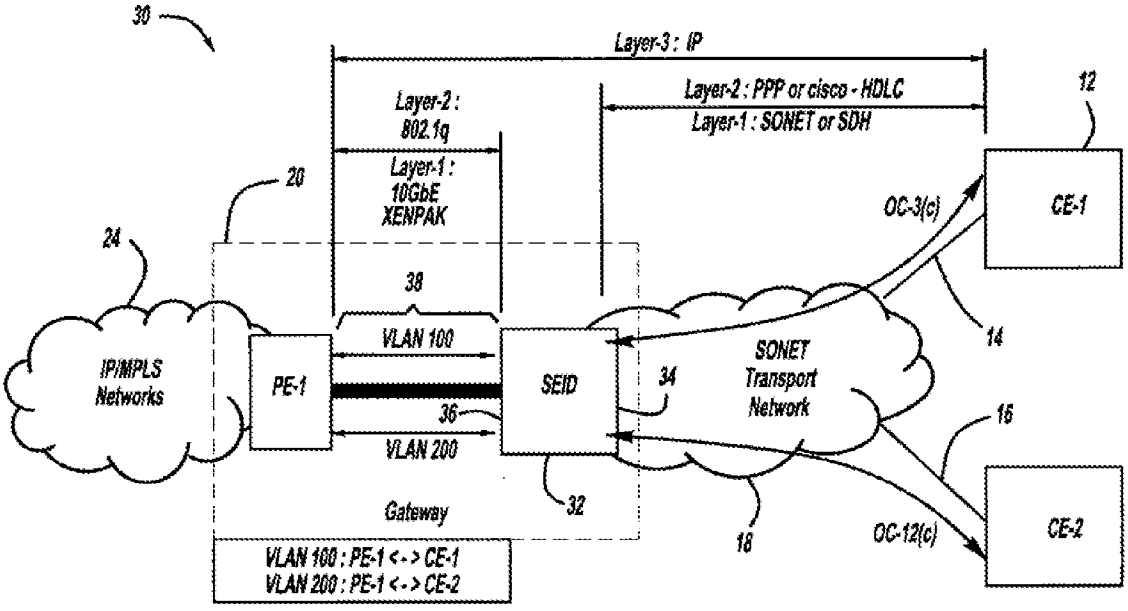


FIG - 3

Figure 3 shows a Gateway 20 connected between IP/ Multi-Protocol Label Switching (MPLS) networks 24 and SONET transport network 18. Spec. 12. The SONET transport network 18 is further connected to Customer

Edge (CE) IP routers 12 via SONET/SDH access circuit 14 and access network 16. *Id.*

Gateway 20 includes a SONET to Ethernet Inter-working Device (SEID) and/or functionality 32 that de-encapsulates the SONET/SDH channels received to remove Layer-2 protocols and expose IP packets. Spec. 14. The IP packets are encapsulated with Ethernet headers and logical tags to map SONET/SDH channels into logical channels over Ethernet interface 38 for layer-3 IP routing by PE router 22. *Id.*

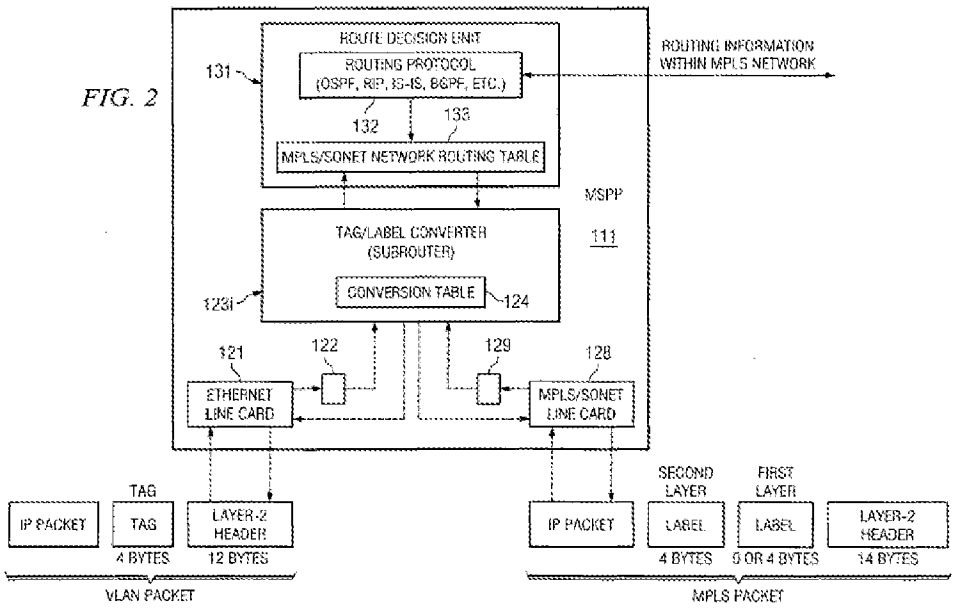
Claims 1 and 7

a. IP Router Argument

Claim 1 recites "**providing a Gateway having . . . an IP router for routing the IP packets to their final destinations**." App. Br. 16 (emphasis added). Similarly, claim 7 recites "**a Gateway having . . . an IP router for routing the IP packets to their final destinations**." *Id.* at 17 (emphasis added). The Examiner finds that Havala teaches these features of the claimed invention. Final Act. 3. Appellants argue that the Examiner errs in this finding. App. Br. 6–8.

Havala's Figure 2, shown below, illustrates a Multiservice Provisioning Platform (MSPP) 111. Havala ¶ 9.

FIG. 2



As shown in Havala's Figure 2, Multiservice Provision Platform (MSPP) 111 includes subrouter 123i and route decision unit 131. Route decision unit 131 effects routing decisions that are carried out by subrouter 123i. Havala ¶ 32. To this end, subrouter 123i is connected between Ethernet line card(s) 121 and MPLS/SONET line card(s) 128 (Havala ¶¶ 31, 33), and manages labels, tags, and headers to route packets between Ethernet-based virtual local area networks (VLANs) 101–104 and MPLS/SONET network 110 (Havala ¶ 36).

Appellants contend Havala's subrouter 123i is not an "IP router" as recited in claims 1 and 7. App. Br. 6–8. Specifically, Appellants contend the subrouter 123i is a layer-2 router, whereas the IP router recited in the claims provides an end-to-end layer-3 or IP communication channel between the access side customer premises equipment (CPE) 12 and the IP router 22. *Id.* Appellants offer no evidence, however, to support the contention that an "IP router" is understood by those of ordinary skill in the art to be a device that operates strictly at layer-3 and does not involve layer-2. Claim terms

are given their broadest reasonable interpretation consistent with the specification in which they appear. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004). The Specification describes an "IP router" as "routing the IP packets to their final destinations." Spec. 10–11, 19. Even though Havala's subrouter 123i may operate at layer-2, as Appellants contend, routing at layer-2 results in routing of IP packets encapsulated within the layer-2 headers. Thus, subrouter 123i may be considered an "IP router" consistent with Appellants' Specification. The claims do not recite that IP router performs routing at layer-3 only. Limitations not appearing in the claims cannot be relied upon for patentability. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982). Thus, on this record, we do not find Appellants' arguments persuasive.

b. Network Element Argument

Claim 1 recites "**providing a Gateway having a network element . . . and an IP router**." App. Br. 16 (emphasis added). Similarly, claim 7 recites "**a Gateway having a network element . . . and an IP router**." *Id.* at 17 (emphasis added). The Examiner contends these features are taught by Havala. Final Act. 4, citing ¶¶ 31, 39, Figs. 2, 5, 6. Appellants argue that "Havala discloses that the CPE router 14 constitutes part of a VLAN" and thus does not disclose the claimed invention. App. Br. 9. Appellants argue Patenaude does not disclose a Gateway, and Olsson does not disclose a Gateway having a network element. *Id.* The Examiner responds that Havala's MSPP 111 (Fig. 2) is analogous to the claimed "Gateway," and the MPLS/SONET line card 128 is analogous to the claimed "network element." Ans. 15. As explained in the previous section, the Examiner finds the subrouter 123i corresponds to the claimed "IP router." Ans. 12. The

Examiner concludes that the combination of references teaches the claimed features. Ans. 15–16. Appellants did not file a reply brief contesting the Examiner's mapping of claim elements to the prior art references.

The Specification describes the "network element" is "for receiving the SONET/SDH circuits" and "is responsible for translating the Layer-2 encapsulation from SONET/SDH to Ethernet, and subsequently translating and bridging the IP packets received at the network element from the SONET/SDH access circuits onto the Ethernet interface." Spec. 10. Similarly, Havala discloses its MSPP 111 includes a "MPLS/SONET line card 128 [which] may be equipped with an MPLS over SONET interface function for receiving a MPLS packet from route decision unit 131 and mapping the received MPLS packet into one or more SONET paths." Havala ¶ 36 (emphasis omitted). Thus, Havala's MPLS/SONET line card 128 performs similar functions as the claimed "network element," as the Examiner finds. Final Act. 3; Ans. 15. Therefore, we do not find Appellants' argument persuasive.

Appellants further argue that while Patenaude discloses point-to-point (PPP) protocol and SONET, it does not disclose "receiving IP Packets from the SONET/SDH circuits in . . . point-to-point protocol." App. Br. 9–11, citing Patenaude ¶¶ 20, 47. However, the Examiner relies on Havala, not Patenaude, to teach the claimed receiving of IP packets from the SONET/SDH circuit (i.e., Havala's MPLS/SONET line card 128), and Patenaude to teach use of point-to-point protocol. Final Act. 3; Ans. 15. Appellants' argument amounts to an attack on Patenaude individually and fails to take into account what the Examiner's combination would have suggested to those of ordinary skill in the art. "Non-obviousness cannot be

established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)). Accordingly, Appellants' argument is unpersuasive.

c. Argument Regarding Transmission of IP Packets to IP Router

Claim 1 recites "**translating and bridging the IP packets received at the network element from the SONET/SDH circuits onto the Ethernet interface for transmission to the IP router**." App. Br. 16 (emphasis added). Similarly, claim 7 recites "**the network element is operative to translate and bridge the IP packets received from the SONET/SDH circuits onto the Ethernet interface for transmission to the IP router**." *Id.* at 17 (emphasis added). The Examiner finds these features are taught by Havala. Final Act. 4, citing Havala ¶¶ 24, 25, 36, 38, Figs. 2, 6. Appellants contend "because Havala does not disclose or suggest an IP router configured in a manner recited in claim 1, it cannot disclose or suggest translating and bridging the IP packets 'for transmission to the IP router' as recited in claim 1." App. Br. 11. Appellants make a similar argument with respect to claim 7. *Id.* Again, the Examiner relies on Havala's MPLS/SONET line card 128, not the CPE router 14, to teach the "network element" that translates and bridges received IP packets from the SONET/SDH circuits onto the Ethernet Interface. Final Act. 4; Ans. 16–18, citing Havala ¶¶ 24, 25, 36, Fig. 2. From Havala's Fig. 2, for example, it is evident Havala's MPLS/SONET line card 128 is translating and bridging received packets from SONET/SDH circuits onto an Ethernet interface via Ethernet line card 121. Thus, we find Appellants' argument unpersuasive.

Claims 2 and 8

Claim 2 recites "**de-encapsulating SONET/SDH channels received at the network element to remove any Layer-2 protocol and expose the IP packets**." App. Br. 16 (emphasis added). Claim 8 recites "**de-encapsulating SONET channels received at the network element to remove any Layer-2 protocol and expose the IP packets**." *Id.* at 17 (emphasis added). The Examiner finds Havala and Patenaude may not explicitly disclose this feature, but that one of ordinary skill in the art would assume de-encapsulation results from Havala's removing tags and labels for conversion and translation for further transmission. Final Act. 6. The Examiner further relies on Olsson to teach the claimed feature. *Id.*, citing Olsson 5:11–14 and 32–35. Appellants argue the Examiner admits that Havala and Patenaude do not disclose the claimed limitation, and contend Olsson does not disclose any "IP packet" let alone exposing any "IP packet." App. Br. 12. The Examiner responds that the combination of Olsson's de-encapsulation and Havala's and Patenaude's processing of IP packets is what teaches the claimed feature. Ans. 18–20.

We agree with the Examiner that Appellants' argument fails to take into account what the combined reference teachings would have suggested to a person of ordinary skill in the art. *See Keller*, *supra*. Specifically, Havala teaches Layer-2 VPNs can be used in its invention. Havala ¶ 23. Havala also teaches removal of forwarding labels, i.e., de-encapsulation, of an MPLS packet that contains an IP packet. Havala ¶ 26, Figs. 2, 9. Specifically, Havala teaches removal of a "first layer label" and "second layer label" as well as a "layer-2 header" in converting an MPLS packet into a VLAN packet. *See* Havala Figs. 2, 9. In this regard, we note that the

MPLS packet layer-2 header is 14 bytes, whereas the layer-2 header of the VLAN packet is only 12 bytes, signifying these headers are different, i.e., that the former has been replaced with the latter. A person of ordinary skill in the art would have understood this operation to be de-encapsulation of the MPLS/SONET packet to expose the IP packet contained therein in the process of converting the MPLS packet into a VLAN packet. Olsson specifically mentions the term "de-encapsulating" in the process of converting between protocols. Olsson 5:11–14, 32–36. Considering these teachings in combination, we agree with the Examiner that a person of ordinary skill in the art would have understood the combined teachings of the references to at least suggest the claimed limitations.

Claims 3 and 9

Claim 3 recites "**mapping the SONET/SDH channels into logical channels further comprises encapsulating the IP packets with Ethernet headers and logical tags**." App. Br. 16 (emphasis added). Claim 9 recites "**the network element maps the SONET/SDH channels into logical channels by encapsulating the IP packets with Ethernet headers and logical tags**." *Id.* at 17 (emphasis added). The Examiner finds the combined references disclose encapsulating the IP packets with logical tags (Havala ¶¶ 34, 37), but may not explicitly disclose encapsulating IP packets with an Ethernet header. Final Act. 7; Ans. 20–22. The Examiner thus relies on Olsson to teach encapsulation with an Ethernet header. *Id.*, citing Olsson 3:55–57, 4:62–63. Appellants again argue Olsson does not disclose any IP packet, let alone encapsulating IP packets, and does not teach encapsulating IP packets with Ethernet headers. App. Br. 12–13.

Appellants' arguments fail to consider what the combined teachings of the references would have suggested to a person of ordinary skill in the art. *See Keller*, *supra*. As previously explained, Havala teaches encapsulating IP packets, and Olsson teaches use of Ethernet protocol. The Examiner's proposed combination puts these two teachings together. Appellants' argument focuses on Olsson alone, and fails to explain why the Examiner's proposed combination of references may not teach or suggest the claimed feature. Thus, we find Appellants' argument unpersuasive.

Claim 13

Appellants argue claim 13 on the same basis as claims 2 and 3. For the reasons stated, we do not find those arguments persuasive and thus sustain the Examiner's rejection of claim 13. App. Br. 13–14.

Remaining Claims

We also sustain the Examiner's rejection of dependent claims 4–6, 10–12, and 15–21, which are not separately argued. 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner's rejection of claims 1–13 and 15–21 under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED