

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TALARI NETWORKS, INC.,
Petitioner,

v.

FATPIPE NETWORKS PRIVATE LIMITED¹,
Patent Owner.

Case IPR2016-00976
Patent 6,775,235 B2

Before STACEY G. WHITE, MICHELLE N. WORMMEESTER, and
CHRISTA P. ZADO, *Administrative Patent Judges*.

WHITE, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
37 C.F.R. § 42.71

¹ We note that Patent Owner's Updated Mandatory Notice changed the name of the Patent Owner. Paper 30.

I. INTRODUCTION

FatPipe Networks Private Limited (“Patent Owner”) seeks rehearing (Paper 33, “Request” or “Req. Reh’g”) of our determination in the Final Written Decision (Paper 32, “Decision” or “Dec.”) that claims 4 and 9² of U.S. Patent No. 6,775,235 B2 (Ex. 1001, “the ’235 patent”) would have been obvious over Karol. Patent Owner argues that we erred in our determination that (1) it would have been obvious to modify Karol’s routing in the manner proposed by Petitioner; (2) we misapprehended the passages from the ’235 patent describing path selection based on origin; and (3) we “overlooked and/or misapprehended that routing based on the source address will forward all packets from the same source to the same network.” Req. Reh’g 1–2.

“The burden of showing a decision should be modified lies with the party challenging the decision.” 37 C.F.R. § 42.71(d). When requesting rehearing of a decision, the challenging party must identify specifically all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in the record. *Id.* We have considered Patent Owner’s Request and for reasons that follow, we clarify our reasoning in the Decision regarding the unpatentability of claims 4 and 9 and we maintain our determination that Petitioner established by a preponderance of the evidence the unpatentability of claims 4 and 9.

² We also found that Petitioner demonstrated by a preponderance of the evidence that claims 5, 7–8, and 10–15 of the ’235 patent are unpatentable. Patent Owner does not challenge these determinations in this Request for Rehearing.

II. DISCUSSION

Patent Owner argues that we erred in our determinations regarding claim 4 and claim 9. Req. Reh’g 2–6. Petitioner asserted that these claims were anticipated by and would have been obvious over Karol. Pet. 10–17, 24–25 (anticipation); *id.* at 42–47, 54 (obviousness).

Claim 4 recites, in relevant part, “a packet path selector which selects between network interfaces on a per-packet basis according to at least: a destination of the packet, an optional presence of alternate paths to that destination, and at least one specified criterion for selecting between alternate paths when such alternate paths are present.” Claim 9 depends from claim 5 and recites, in relevant part, “the selecting step make[s] network path selections on a packet-by-packet basis.” In our Final Written Decision, we construed the phrase “selects between network interfaces on a per-packet basis” to mean “selecting a network path/interface for each packet.” Dec. 9. Based on the evidence and arguments presented, we found Petitioner’s anticipation argument to be insufficient because “we determine[d] that Karol’s routing decisions are made for a flow of packets and not for an individual packet.” *Id.* at 18.

Petitioner also argued that claims 4 and 9 would have been obvious over Karol if we construed “per-packet basis” to require selection for each packet. Pet. 45, 54. We found Petitioner’s obviousness argument to be legally sufficient and held that Petitioner had met its burden to establish the unpatentability of claims 4 and 9 as obvious over Karol. Dec. 19–22, 30–31. On rehearing, Patent Owner asserts that this determination was incorrect because the modified Karol system would not select packets based on destination address as recited in claims 4 and 9. Req. Reh’g 2–6.

As an initial matter, we note that this argument is different from the argument presented during the trial. Patent Owner had argued that

Karol does not disclose selecting a network on a per packet basis because (1) Karol does not “select” a network when a packet arrives but simply routes packets based on the forwarding database’s pre-computed route and (2) Karol’s forwarding database facilitates network path selection/changes only when updated with LSAs, which occurs only infrequently and not on a per-packet basis.

Paper 22 (“PO Resp.”) 24. Thus, despite the fact that Patent Owner stated that “Karol does not disclose *or render obvious* the per-packet network path selection required by claim 4” the argument was directed to Petitioner’s anticipation argument and not the obviousness argument over Karol alone. *id.* (emphasis added); *see also id.* at 51 (“for the same reasons set forth above for independent claim 4, Karol also fails to anticipate or render obvious claim 9”). As such, we could not have overlooked or misapprehended an argument that was not made. *See also* Paper 8, 6 (“The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived.”).

Even if these arguments had been raised, however, they would not have been persuasive because they misconstrue Petitioner’s arguments. In its Request for Rehearing, Patent Owner points out that in the Decision, we stated “that it would have been obvious to modify Karol by limiting the routing decision to an analysis of the packet’s source address.” Req. Reh’g 3 (quoting Dec. 19–20). According to Patent Owner, this would not meet the limitations of claim 4 because that claim recites selection criteria which include the destination of the packet. Specifically, claim 4 recites, in relevant part,

a packet path selector which selects between network interfaces on a per-packet basis according to at least:
[1] a destination of the packet,
[2] an optional presence of alternate paths to that destination, and
[3] at least one specified criterion for selecting between alternate paths when such alternate paths are present;

Ex. 1001, 17:46–51. Patent Owner argues that because claim 4 requires that the destination of the packet is used to select between network interfaces on a per-packet basis, the proposed modification to Karol is insufficient because it limits the routing decision to an analysis of the packet’s source address.

Req. Reh’g 4. Patent Owner is correct in its assertion that claim 4 requires path selection based on criteria which includes the packet’s destination.

Petitioner, however, addresses the selection criteria in its argument.

Petitioner asserts that,

To route the packets to a destination of the packet, Karol discloses a “forwarding database 432” within the gateway processor to determine if a particular packet matches a combination of “Destination IP address; Next hop router; Outgoing port (interface)” that would cause such a packet to be routed to the CL network or to be considered for routing over the CO network. (Ex. 1006 at 7:36-41; Ex. 1005 at ¶ 183.)

For packets that are candidates for the CO network, Karol also discloses that each such packet is compared at the gateway processor with the “flow database 433” to determine if a particular packet matches a desired combination of “(a) an outgoing port field, which indicates the port on which a datagram whose entries match a particular record’s entries is forwarded; (b) if the outgoing port is ‘invalid,’ the next field ‘forward or hold’[] entry indicates whether packet should be forwarded or held in packet buffer 440; (c) destination address; (d) source address; (e) source port; (f) destination port; (g) type

of service; (h) protocol field; (i) TCP Flags; (j) outgoing port; (k) forward or hold flag, and (l) a mask which indicates which of the data entries is applicable to the particular record” in order to route such a packet to the CO network instead of the CL network depending on availability of a valid connection in the CO network for a flow associated with the particular packet. (Ex. 1006 at 7:42-54, 7:60-8:2; Ex. 1005 at ¶¶ 184, 185.)

Pet. 14–15. Petitioner cites this argument as part of its obviousness contentions regarding the limitation at issue. *Id.* at 45 (citing argument from §V(A) at claim 4[d]). Petitioner’s obviousness argument supplements those contentions with an argument that path selection for individual packets was within the knowledge of a person of ordinary skill in the art. *Id.*

Petitioner’s argument is specifically directed to the potential for an alternate construction of “per-packet basis.” *Id.* Dr. Negus supported Petitioner’s argument by opining that if we were to construe “per-packet basis” to require a selection for each packet then “the knowledge and common sense of the person of ordinary skill in the art at the time of the invention was sufficient to extrapolate from the disclosures of Karol.” Ex. 1005 ¶ 190. Dr. Negus cites two pieces of evidence to support his testimony that this modification would have been within the knowledge of one of ordinary skill in the art, (1) a passage from the ’235 patent that describes selecting paths based on the origin of a packet; and (2) a data and computer communications textbook. *Id.* ¶¶ 192–194. We found this evidence to be persuasive and we agreed with Petitioner’s contention it would have been obvious to modify Karol to make its routing decisions for each packet as opposed to making decisions for a flow as is disclosed in Karol.

In the Decision, we discussed the evidence cited by Dr. Negus. In particular, we addressed Petitioner’s view of “a passage from the ’235 patent, which describes a ‘prior approach[] for selecting which network to use for which packet(s)’ in which decisions are made based on the origin of the packet.” Dec. 19 (quoting Ex. 1001, 4:15–23). Petitioner cited this passage as evidence of “the ‘prior art [as] disclos[ing] routing decisions that are independent of the particular flows or sessions of particular packets.’” *Id.* (citing Pet.45) (alterations in Decision).

Patent Owner asserts that Petitioner’s reliance on the passage from the ’235 patent discussing routing packets based on their origin is misplaced. Req. Reh’g 7–9 (quoting Ex. 1001, 4:15–23). Petitioner, however, does not assert that these claims are obvious over Karol and any admitted prior art, but rather Petitioner asserts that the “combination of the knowledge of a POSITA with Karol would render this claim element obvious.” Pet. 45. In an obviousness analysis under 35 U.S.C. §103(a), “common sense” or the knowledge of the ordinarily skilled artisan may play a role in bridging gaps in prior art’s explicit teachings. *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 420–21 (2007) (“Common sense teaches ... that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.”). Although “common sense and common knowledge have their proper place in the obviousness inquiry,” common sense “cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when dealing with a limitation missing from the prior art references specified.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361–62 (Fed. Cir. 2016). We must proceed with caution because the

use of common sense or knowledge of the artisan to supply a missing limitation ought to be treated as the exception, rather than the rule. *Id.* at 1361. As our reviewing court has observed, “[a]bsent some articulated rationale, a finding that a combination of prior art would have been ‘common sense’ or ‘intuitive’ is no different than merely stating the combination ‘would have been obvious.’” *In re Van Os*, 844 F.3d 1359, 1361 (Fed. Circ. 2017).

Thus, we were tasked with looking to see if the assertion of knowledge and common sense of the person of ordinary skill was supported with “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness,” as required by our reviewing court. *In re Kahn*, 441 F.3d 977, 987 (Fed. Cir. 2006). In support of his opinion that per-packet routing was within the knowledge of one of ordinary skill, Dr. Negus discusses the passage in question. *Id.* ¶ 192. Specifically, he argues that the ’235 patent admits that routing on a per-packet basis was known at the time of the patent’s invention. *Id.* He testified that “routing decisions that are based entirely upon the origin (for example, source address) of the packet independent of the particular flows or sessions that particular packets from such an origin are associated with (see, for example, Ex. 1001 at 4:15–23)” were discussed in the ’235 patent. *Id.* As further evidence of the knowledge of a person of ordinary skill he also cited “Stallings, a common reference textbook on data and computer communications, [that] describes ‘source routing’ whereby the ‘source station specifies the route by including a sequential list of routers in the datagram’ (see, for example, Ex. 1011 at p. 539).” *Id.* ¶ 1.

On rehearing, Patent Owner argues that “the ’235 patent’s description of per-department network selection does not lend any teaching or rationale to modify Karol to make a decision on a per-packet basis.” Req. Reh’g 9. Specifically, Patent Owner contends that the “coarse routing of traffic or flows between networks” stands in contrast to the recited per-packet or packet-by packet routing and thus, does not support Petitioner’s arguments. Req Reh’g 7. The passage at issue states,

But better tools and techniques are needed for use in architectures such as that shown in FIG. 5. In particular, prior approaches for selecting which network to use for which packet(s) are coarse. For instance, *all packets* from department X might be sent over the frame relay connection 106 while *all packets* from department Y are sent over the Internet 500. Or the architecture might send all traffic over the frame relay network unless that network fails, and then be manually reconfigured to send all traffic over a VPN 502.

Id. at 8 (quoting Ex. 1001, 4:15–23 (emphasis by Patent Owner)). Patent Owner argues that this method of routing is criticized in the specification because it does not support load-balancing on a per-packet or per-session basis. *Id.* at 8–9 (citing Ex. 1001, 7:37–42). In addition, Patent Owner contends that “path selection [by department] is too coarse because a routing decision is broadly applied to all packets of a certain origin rather than making a new selection for each individual packet or session.” *Id.* at 9.

These arguments are not persuasive. Patent Owner’s arguments focus on the eventual outcome of the selection, i.e., all packets from a given department are routed to a particular network. Petitioner’s argument, however, is different. Petitioner is arguing that the ’235 patent is providing an example of a routing procedure that examines individual packets to determine where they should be routed as opposed to Karol’s method of

routing based on a flow. As described in the specification, prior to the invention of the '235 patent, networking “require[d] some inflexible method of *assigning packets to paths*.” Ex. 1001, 8:56–57 (emphasis added).

Traditionally, such necessary match-ups of packets with routers were done by inflexible approaches such as sending all traffic from a given department, building, or local area network to a specified router. Manual and/or tedious reconfiguration was needed to change the destination address used in packets from a given source LAN such as one at site A, so this approach allowed load-balancing only on a very broad granularity, and did not load-balance dynamically in response to actual traffic. In particular, difficult reconfiguration of network parameters was needed to redirect packets to another router when the specified router went down.

Id. at 9:1–9:11. We determined that the cited passage from the '235 patent described routing packets based on the source information contained within the packet. Thus, we agreed with Petitioner’s interpretation of the cited passages as examples of a prior art procedure in which packets are examined on an individual basis to determine from which department each packet originated so that that information may be used in routing.

Patent Owner goes on to argue that “[i]f Karol’s system were modified to analyze only the source address, then there could be no per-packet path selection at the CL-CO gateway because the routing decisions would be predetermined, based on the source.” Req. Reh’g 11. Patent Owner notes that we disagreed with Petitioner’s anticipation argument because we found that routing decisions made for a flow were not the same as the recited routing decisions made on a per-packet basis. *Id.* Patent Owner argues that Petitioner’s obviousness argument would have a similar defect because “if a routing table or flow database forwards all packets from a particular origin or source address to a particular network interface, there is

no per-packet selection taking place because the selection is made for an entire group of packets having the same source address.” *Id.* The question, however, is not whether the packets end up being routed to the same network, but rather, the question is whether the modified Karol system makes its network selections on a per packet basis. *See* Dec. 9. The anticipation argument failed because Karol “inquires as to whether the received packet is ‘a packet *from a flow that needs CO Service*’” rather than examining whether an individual packet needs CO Service. *See id.* at 22 (citing Ex. 1006, Fig. 5, element 503 (emphasis in Decision)). We were persuaded that modifying Karol’s system to review each packet on an individual basis would meet the requirements of the recited selection on a per-packet basis.

In light of Dr. Negus’s testimony and supporting evidence (both from the ’235 patent and Stallings), we were persuaded that one of ordinary skill in the art would have been motivated to modify Karol to examine packets individually and make the routing decisions for those packets and not for a flow. Dec. 19 (“We determine that Petitioner has shown that it would have been obvious to modify Karol to select networks on a per packet basis.”). Thus, the determination was not that Karol should route packets based on origin, but rather that Karol’s routing methodology would be applied for individual packets. We determined that the proposed modification as viewed in light of the other disclosures relied upon by Petitioner would have rendered claim 4 obvious. Therefore, we are not persuaded of error in our determination that claim 4 would have been obvious over Karol.

Similarly, claim 9 depends from claim 5 and as such, claim 9 includes several limitations from claim 5 that “require analysis of the destination

address/location.” Req. Reh’g 6. In the Decision, we determined that Petitioner had established by a preponderance of the evidence that claim 5 was anticipated by and would have been obvious over Karol. Dec. 45. Thus, for reasons described in the Decision we determined that Karol disclosed the location related limitations that are found in claim 5. *Id.* at 23–26. In its Request, Patent Owner does not challenge our determinations as to claim 5, but rather argues that the modification of Karol does not meet the claim limitations because it would “limit the routing decision to an analysis of the packet’s source address.” Req. Reh’g 6–7.

As with its allegations regarding claim 4, here again Petitioner relied upon its anticipation argument as part of its obviousness contentions. Pet. 54. Petitioner argued that “[t]o the extent ‘packet-by-packet basis’ means ‘for each packet, a selection is made between network interfaces regardless of the session with which the packet is associated,’ then Claim 9 is rendered obvious over Karol in view of the skill of a POSITA as set forth in [Petitioner’s obviousness argument for claim 4].” *Id.* Thus, for reasons described above, we were persuaded that it would have been obvious to modify Karol in order to make its routing selections for individual packets. As such, that modification is viewed in light of Karol’s other disclosures, which we found to anticipate claim 5. Therefore, we determined that dependent claim 9 would have been obvious over Karol. Dec. 30–31. We are not persuaded of error in that determination.

Thus, we are not persuaded of error in our determination that claims 4 and 9 would have been obvious over Karol.

III. CONCLUSION

Having considered Patent Owner's Request, Patent Owner has not persuaded us, for the reasons discussed, that our determination that claims 4 and 9 would have been obvious over Karol was in error. Thus, we maintain our determination in regards to the disputed claims.

IV. ORDER

Accordingly, it is:

ORDERED that Patent Owner's Request for Rehearing is *denied*.

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