

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner

v.

PORTSMOUTH NETWORK CORP.,
Patent Owner

Case No. IPR2024-01450

U.S. Patent No. 7,596,088

PATENT OWNER'S SUR-REPLY

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Pursuant to 37 C.F.R. § 42.107, Patent Owner Portsmouth Network Corporation (“Portsmouth”) submits this Sur-Reply in response to Petitioner’s Reply (Paper 22).

I. INTRODUCTION

Petitioner’s Reply rests on a fundamental misinterpretation of the claim terms of the ’088 Patent and a mischaracterization of both Patent Owner’s position and the teachings of the cited prior art. The ’088 Patent teaches bandwidth sharing between existing, established connections—whether working or protective—through a defined “sharing definition” that governs the allocation of bandwidth across common network segments. In contrast, Petitioner’s cited references, Dziong and Sathyanath, disclose only bandwidth reservation for unestablished protection paths, not allocation to established connections as contemplated by the ’088 Patent.

Rather than engaging with this critical distinction between “allocation” and “reservation,” Petitioner repeatedly advances strawman arguments, asserting that Patent Owner seeks to limit the claims to “working” connections. This is incorrect. Patent Owner applies the plain and ordinary meaning of the claim terms as understood by a POSITA in the field of network communications, supported by the ’088 Patent’s specification and Petitioner’s own prior art. When properly construed, the claim language and specification make clear that Petitioner’s proposed

constructions, and its reliance on Dziong and Sathyanath, fail to meet the requirements of the '088 Patent.

II. CLAIM CONSTRUCTION

Petitioner's misunderstanding of the basic claim terms forms the basis of its argument that Patent Owner implicitly interprets the claim language beyond the plain and ordinary meaning of the terms. This is incorrect. Patent Owner applies the plain and ordinary meaning for the claim terms below as understood by a POSITA in the field of network communications. This is evidenced by support from the '088 Patent's specification, as well as the specifications of Petitioner's cited prior art. Petitioner's proposed constructions also misinterpret Patent Owner's arguments and misconstrue the claim language.

A. “new connection” and “one or more other connections”

Contrary to Petitioner's incorrect strawman assertion, Patent Owner does not dispute that the term “connection” can include connections that provide failure protection. The distinction that Patent Owner seeks to make, that Petitioner disregards, is that the “new connection” claimed by the '088 Patent is an *established* connection rather than one that is merely calculated but not actually set up. A POSITA would understand that calculating a path is entirely different than establishing one. Ex. 2008, ¶39. The first step in establishing a path is the path calculation, which is then followed by the signaling phase where the path is established. *Id.* Petitioner and its expert fail to acknowledge this nuance.

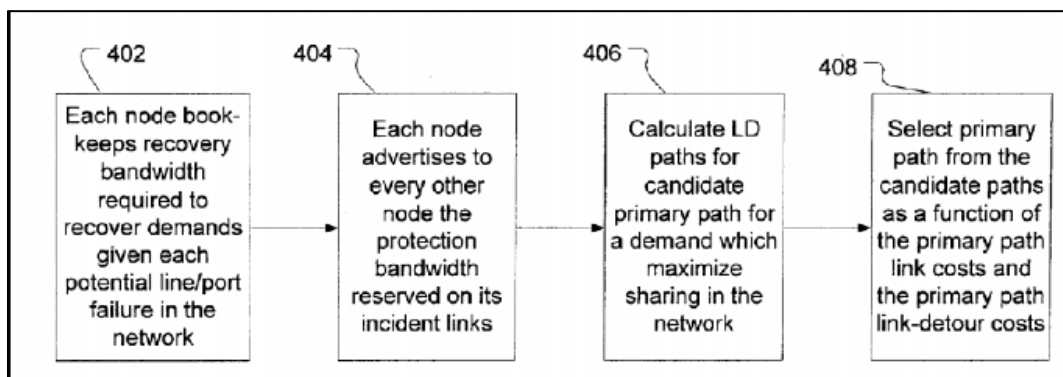
The '088 Patent contemplates failure protection as a reason for setting up a new connection. The specification of the '088 Patent notes that “the new connection may be set up to protect the existing connection against failure of a node or segment along its route.” Ex. 1001, 5:5-8. But the specification of the '088 Patent makes it clear that the “new connection” and “one or more other connections” are established connections. Specifically, the '088 Patent teaches that “[f]or each of the candidate routes, the disclosed methods and systems calculate the additional bandwidth reservation, accumulated over the network segments along the candidate route in question, which would be allocated to the new connection *if it were established* through this route,” and that the “candidate route having a minimum value of the cumulative additional bandwidth reservation is selected as a preferred route for *establishing the new connection*.” Ex. 1001, 2:21-32¹. The claim language for independent claim 1 further supports that the “new connection” is an active, established connection as independent claim 1 itself demands “*establishing* the new connection using the preferred route.” *Id.*, cl. 1.

Petitioner's analysis of Figure 1 of the '088 Patent merely confirms Patent Owner's position. Reply, 12-15. Figure 1 contemplates establishing a new connection, and maps out two potential candidate routes. *Id.*, 4:52-63. With regards to Figure 1, the methods and systems of the '088 Patent describe how to “select

¹ All emphasis added unless otherwise noted.

between one of the two candidate routes for *establishing* the new connection, so as to optimize the bandwidth allocation in ring 26,” and based on these methods, in the example outlined in Figure 1, “route 40 will be selected” for establishing because it requires “the smallest bandwidth allocation, taking into account bandwidth sharing.” *Id.*, 5:33-43. Petitioner recognizes this and notes that the “’088 patent specifically describes *establishing* a new connection.” Reply, 13.

In contrast, Petitioner’s cited references relate to merely *calculating* various protection paths rather than establishing an actual connection. This is evident in the disclosures of both patents. For example, Figure 4 of Dziong (reproduced below) depicts the process Dziong teaches for calculating link detour paths and primary paths. Ex. 1005, ¶63; Ex. 2008, ¶¶40-41. Step 406 shows that the link detour paths are merely calculated, while the primary path is calculated and then actually established. Ex. 2008, ¶40.



Ex. 1005, Fig. 4.

Similarly, Sathyanath teaches that the protection paths are merely computed but not established. *See e.g.*, Ex. 1006, ¶78. Specifically, Sathyanath teaches that when “a new demand (i.e., service request) is received at a node, a route computation routine is invoked that *calculates* both a primary path... as well as a protection path... for the demand. Signaling... is used to *establish the primary path* for the service and to *reserve bandwidth* for the protection path.” *Id.* Sathyanath further teaches that “[f]or achieving sharing in optical networks, one would use shared restoration...because *an established optical path* physically occupies resources such as time slots, wavelengths and thus *does not allow their sharing* until they are released by deleting the optical path.” *Id.*, ¶82.

Thus, Petitioner's argument that Patent Owner seeks to limit the term “connection” to simply working connections is incorrect. Rather, Patent Owner seeks to apply the plain and ordinary meaning to the term “connection” as taught in the claims and specification of the '088 Patent.

B. “bandwidth allocation” and “total bandwidth allocated”

The terms “allocated” and “allocation” cannot, and should not, be interpreted to encompass bandwidth that is merely reserved. Such an interpretation would contradict both the disclosure of the '088 Patent and the Petitioner's cited prior art. Faced with the inconvenient teachings of its own prior art, Petitioner now seeks to back pedal on its earlier position that “no claim terms require express construction.”

Pet., 12-13. That is because Petitioner seeks to improperly broaden the meaning of “allocation” and “allocated” beyond what is supported by both the '088 Patent and established principles in the field of network communications.

As discussed above, the claims of the '088 Patent contemplate bandwidth sharing for established connections. These established connections can be working connections or connections that are established to protect against failure. The claims and the specification of the '088 Patent teach *allocating* bandwidth to these established connections such that they can carry network traffic. Ex. 1001, 2:21-32; cl.1.

The '088 Patent teaches that “cumulative additional bandwidth reservation” is “a measure of the amount of bandwidth that can be saved in a particular route due to bandwidth sharing.” Ex. 1001, 2:26-28. The '088 Patent further explains that this “additional bandwidth reservation” is “allocated to the new connection if it were established through [the identified] route.” *Id.*, 2:21-26. In short, the '088 Patent teaches (1) calculating the cumulative bandwidth reservation for a number of candidate routes, (2) selecting the route that has the minimum value of the cumulative additional bandwidth reservation, and then (3) allocating that bandwidth to the new connection. *Id.*, 2:13-32. The additional bandwidth reservation calculation takes “into account the ability to share bandwidth between the new connection and existing connections.” *Id.*, 2:15-16. The claims of the '088 Patent

reflect this method. For example, claim 1 requires that the “cumulative additional bandwidth reservation...be *allocated* to the new connection.” *Id.*, cl. 1. Thus, contrary to Petitioner's assertions, the '088 Patent draws a distinction between reserved bandwidth and allocated bandwidth. In calculating the route for the new connection, the method outlined in the '088 Patent first considers how much bandwidth is reserved on a candidate route, and then, upon selecting and establishing that route, allocates that reserved bandwidth to that route.

Petitioner's cited references on the other hand teach bandwidth sharing in the context of bandwidth *reservation* and do not teach bandwidth sharing in the context of established connections. This is a critical difference between the claims of the '088 Patent and Petitioner's prior art. Both Dziong and Sathyanath teach bandwidth sharing in the context of bandwidth reservation rather than bandwidth sharing between established and existing paths that have bandwidth allocated to them as disclosed in '088 Patent.

As discussed above, Dziong teaches setting aside a certain bandwidth pool that can be tapped into in the event an existing connection fails. Ex. 1005, ¶58, 63; Ex. 2008, ¶¶39-40. Because this bandwidth is not actually allocated to any active connection, it exists in a fluid state and can be shared between connections in the event of a failure. Ex. 2008, ¶41. Sathyanath similarly teaches that “the bandwidth associated with the protection path...is not allocated in advance of a failure, but is,

instead, only reserved.” Ex. 1006, ¶60. This is so that “the unallocated bandwidth might be used for ‘opportunistic’ data.” *Id.* Sathyanath further teaches that “because the protection bandwidth is only reserved and not allocated, ‘sharing’ can be supported.” *Id.*

Petitioner once again sets up a strawman argument by drawing an irrelevant distinction between an “active path” and a “back up path,” instead of addressing the actual distinction that Patent Owner makes with regards to the terms “allocation” and “reservation.” Reply, 10-11. Petitioner further refers to extrinsic evidence, like RFC3209, to hammer a point that is simply not at issue in this case. *Id.*, 12. The issue with Petitioner’s prior art is not that it teaches bandwidth sharing for “back-up” or “protection” paths, but that it only teaches bandwidth sharing in the context of bandwidth reservation where no paths are actually established. Ex. 2008, ¶45, 47. This is contrary to the ’088 Patent’s express disclosures and the claim limitations themselves.

Thus, Petitioner’s proposed construction should be rejected and the plain and ordinary meaning should be applied to the terms “allocation” and “allocated.”

III. Argument

Petitioner devotes a significant portion of its Reply to showing that the ’088 Patent contemplates using the new connection to protect an existing connection. However, as discussed above, this is not in dispute. Petitioner further argues that

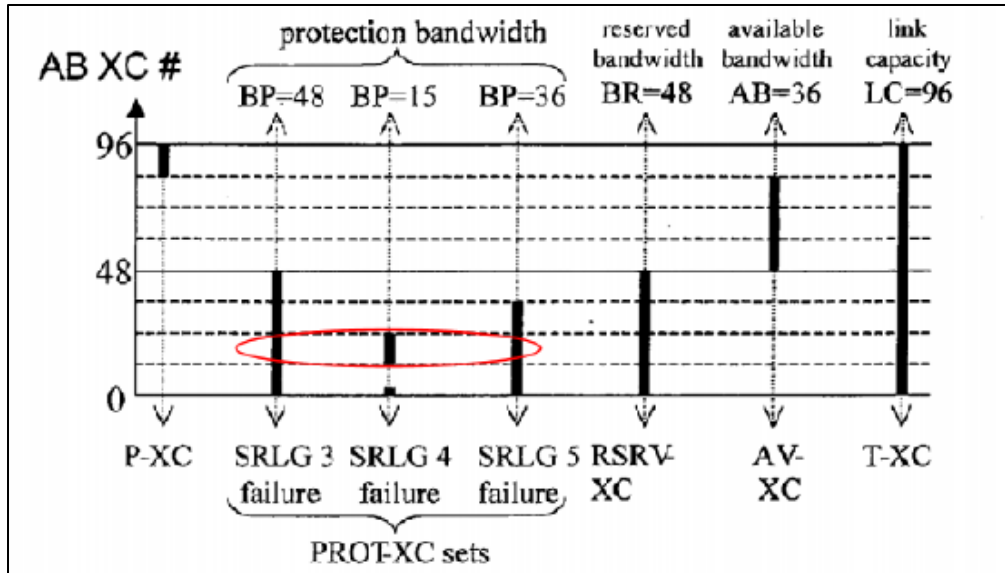
Dziong and Sathyanath teach route selection for failure protection taking into account bandwidth sharing. This again is not in dispute. As discussed above, these references fail to disclose bandwidth sharing and allocation between a newly established connection and existing established connections.

A. Dziong and Sathyanath Do Not Teach Bandwidth Sharing As Contemplated by the '088 Patent

Dziong and Sathyanath describe bandwidth sharing for connections that are not established and do not have any set bandwidth allocations. In practice, a connection must be established before it can be operational, particularly in optical networks such as those depicted in Fig. 6 of Dziong. Ex. 2008, ¶88. The fact that the protection paths are not established in Dziong is evident from the manner in which Dziong describes these paths. For example, Dziong explains that “the bandwidth reserved for recovery of a particular SRLG can be shared with bandwidth reserved for recovery of other disjoint SRLGs, since it is assumed that only one failure at a time will occur.” *Id.* This disclosure makes it clear that the protection paths are not established until there is a failure in a particular SLRG, and in turn, no bandwidth is allocated for protection until such a failure occurs. Sathyanath reinforces this point further by explaining the nature of the connections contemplated by the two references. For example, Sathyanath teaches that “in case of shared restoration, the source first establishes a pre-computed restoration path and then switches the traffic to it. For achieving sharing in optical networks, one would use shared restoration as

opposed to shared protection because an established optical path physically occupies resources such as time slots, wavelengths and thus does not allow their sharing until they are released by deleting the optical path.” Ex. 1006, ¶82.

Petitioner points to Figure 6 of Dziong and asserts that “Dziong describes the bandwidth sharing concept ...after all primary and backup connections have been established.” Reply, 17. This is incorrect and betrays Petitioner’s confusion on the technology disclosed in Dziong. A POSITA would understand that Figure 6 does not show any *established connections* for any SRLG failures. Ex. 2008, ¶63. In the annotated version of Figure 6 below, the red circle shows time slots, i.e. cross connects between the link groups, which would be impossible if these were established optical paths. *Id.* As a POSITA would know, and as described in Dziong, established optical paths physically occupy resources, and two optical paths cannot occupy the same physical resource. *Id.*, see Ex. 1005, [0082] (“established optical path physically occupies resources such as time slots”).



Ex. 1005, Fig. 6(b) (annotated).

This is further confirmed by the disclosure in Sathyanath, which explains that “[f]or achieving sharing in optical networks, one would use shared restoration as opposed to shared protection because an established optical path physically occupies resources such as time slots, wavelengths and thus does not allow their sharing until they are released by deleting the optical path.” *See* Ex. 1006, ¶82.

In its Reply, Petitioner again recycles its annotated version of Dziong’s Figure 6b that is mired with unsupported assumptions, the chief being labeling “SLRG 4” as a “new connection.” Reply, 18-19. Dziong does not support Petitioner’s characterizations. As explained in Patent Owner’s Response, SRLG3, SRLG4, and SRLG5 are not protection paths; rather, they are link groups that can each fail independently, triggering the activation of multiple protection paths. Ex. 2008, ¶¶51–52, 67; *see also* Ex. 2012, p. 181. Consistent with Dziong’s teachings, these

protection paths are only activated in the event of a failure on the primary working path. Ex. 1005, ¶¶[0089]–[0090]. Importantly, these unestablished protection paths do not share reserved bandwidth with the working path on link AB, as taught by the '088 Patent. Instead, they share reserved bandwidth only with each other. Ex. 2008, ¶67.

Thus, Dziong and Sathyanath do not teach bandwidth sharing as contemplated by the '088 Patent.

B. Dziong and Sathyanath Do Not Teach a Sharing Definition As Claimed

The '088 Patent claims a specific “sharing definition” in which a new connection shares bandwidth with an existing, established connection traversing at least one common network segment. This concept is central to the patent’s teachings and differs fundamentally from mere bandwidth reservation. Dziong and Sathyanath do not teach bandwidth sharing in the context of existing connections, and thus, fail to teach a “sharing definition” as claimed by the '088 Patent.

The specification of the '088 Patent teaches that under the claimed “sharing definition” “the new connection may share the bandwidth with an existing connection traversing at least one common segment along the preferred route, and establishing the new connection includes *sharing a bandwidth allocation* in the at least one common segment between the new connection and *the existing connection.*” Ex. 1001, 3:4-10. Dziong and Sathayanath simply do not teach

bandwidth sharing between existing and established connections. Petitioner has pointed to no evidence to refute that argument. Instead, Petitioner rehashes the same arguments related to “active” vs. “backup” connections, (Reply, 21-22) but as explained above, the distinction Patent Owner makes is between “established” connections rather than those that are merely calculated but not actually created. .

Moreover, Petitioner's cited testimony from Dr. Olivier only confirms that Dziong teaches bandwidth reservation. Reply, 22-23. Expressly, Dr. Olivier explains that Dziong's “intention is to have a pool that in the worst case allows you to establish a connection.” Reply, 22 (citing Ex. 1043, 42-43). This aligns with Patent Owner's position that Dziong teaches setting aside a certain bandwidth pool that can be tapped into in the event an existing connection fails, and because this bandwidth is not actually allocated to any active connection, it exists in a fluid state and can be shared. Patent Owner is not seeking to limit the claims of the '088 Patent to “working” connections, as Petitioner repeatedly contends. Reply, 21-22. Rather, Patent Owner emphasizes that the '088 Patent teaches bandwidth sharing among established connections. *See supra* §II. Specifically, the '088 Patent teaches that “[f]or each of the candidate routes, the disclosed methods and systems calculate the additional bandwidth reservation, accumulated over the network segments along the candidate route in question, which would be allocated to the new connection ***if it were established*** through this route,” and that the “candidate route having a

minimum value of the cumulative additional bandwidth reservation is selected as a preferred route for *establishing the new connection.*” Ex. 1001, 2:21-32.

For the reasons discussed above, Dziong and Sathyanath fail to disclose a “sharing definition.”

C. The Combination of Dziong and Sathyanath Fails to Render Obvious the Dependent Claims

Dependent claims 4, 11, and 20 recite, in significant part, “wherein the new connection and at least one of the other connections specified in the sharing definition traverse at least one common segment along the preferred route, and wherein establishing the new connection comprises allocating the maximum of the requested bandwidth and of the bandwidths of the at least one of the other connections in the at least one common segment to the new connection and to the at least one of the other connections.” In response to the Patent Owner Response, Petitioner resorts to the same argument regarding “working paths” and “protection paths” to challenge Patent Owner’s showing that Dziong and Sathyanath fail to render obvious the dependent claims of the ’088 Patent. Reply, 23-24. For the same reasons discussed above, Petitioner’s argument is misguided, focuses on the wrong analysis, and fails to establish that the prior art discloses these claims.

Additionally, Petitioner further tries to rebut Patent Owner’s argument that Dziong does not teach establishing a “new connection” in “SLRG 4” in the context of Figure 6b by noting that the Petitioner “presents an obviousness analysis based

on multiple embodiments in Dziong.” Reply, 24. However, neither the Petition nor Petitioner’s Reply provide any obviousness analysis related to why or how a POSITA would combine the embodiments disclosed in Dziong, which is required if relying on an obviousness combination based on multiple embodiments from a single reference. *In re Stepan Co.*, 868 F.3d 1342, 1345–46 n.1 (Fed. Cir. 2017) (holding that “there must be a motivation to [combining multiple embodiments from a single reference] and a reasonable expectation that such a combination would be successful.”)

Thus, Petitioner fails to show that Dziong and Sathyanath disclose dependent Claims 4, 11, and 20.

IV. CONCLUSION

For the foregoing reasons, the Board should find the ’088 Patent valid and not obvious.

Respectfully submitted,

Date: November 26, 2025

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CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

This Preliminary Response complies with 37 C.F.R. § 42.24(b)(2). As calculated by the “Word Count” feature of Microsoft Word 2010, it contains 3,245 words, excluding the words contained in the following: Table of Contents, Table of Authorities, List of Exhibits, Certification Under 37 C.F.R. § 42.24(d), and Certificate of Service.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies service of PATENT OWNER'S SUR-REPLY on the counsel of record for the Petitioner by filing this document through P-TACTS system on November 26, 2025 and served a true and correct copy of the foregoing by electronic mail on the following counsel:

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