

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CIENA CORPORATION,
Petitioner,

v.

K.MIZRA LLC,
Patent Owner.

Case IPR2025-01364
Patent 10,735,320

**PATENT OWNER'S PRELIMINARY RESPONSE
UNDER 35 U.S.C. §§ 311-19 AND 37 C.F.R. § 41.100, ET SEQ.**

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EXHIBIT LIST

Exhibit No.	Exhibit Description
2001	10/6/2025 Nokia email
2002	3/26/25 Stewart Memorandum
2003	2/28/25 USPTO Bulletin
2004	3/24/25 APJ Boalick Memorandum
2005	EDTX Complaint
2006	First Amended DCO in Nokia case
2007	NDGA Statistics
2008	10/21/2005 Hearing Transcript
2009	Nokia invalidity contentions excerpted
2010	First Amended Complaint NDGA
2011	FAQs for Interim Processes No. 22
2012	Hausman Declaration

I. INTRODUCTION

Patent Owner K.Mizra LLC (“K.Mizra” or “Patent Owner”) respectfully requests the Board deny institution of this Petition as it fails to demonstrate a reasonable likelihood that it will succeed in showing that any of the challenged claims 1-20 of U.S. Patent No. 10,735,320 (Ex. 1001 or the “’320 patent”) is unpatentable.

The Petition raises two grounds of unpatentability based on obviousness. Both grounds suffer the same fatal deficiencies that preclude institution. In Ground 1, Petition proposes combining *Murphy* (Ex. 1005) and *Taguchi* (Ex. 1006). Petitioner fails, however, to demonstrate that the *Murphy* reference and the *Taguchi* reference individually or together in combination discloses or renders obvious the claimed “distributed mapping of the application flow.” For this limitation, the Petition relies on *Murphy*, or in the alternative, *Taguchi*, by pointing to each reference’s mere disclosure of multiple pseudowires paths, but fails to demonstrate any disclosure of a “distributed mapping” of an application flow across multiple parallel pseudowires.

In Ground 2, the Petition adds the *Booth* reference (Ex. 1016) to the Ground 1 combination to challenge dependent Claims 6 and 13, which add limitations unrelated to the deficiency in Ground 1. Therefore, Ground 2 also fails to show a reasonable likelihood of prevailing for the same reasons.

For these reasons as further detailed below, institution should be denied.

II. THE CHALLENGED PATENT—U.S. PATENT NO. 10,735,320

A. Overview of the '320 Patent

The '320 patent is directed to systems and techniques for managing application flow traffic (*i.e.*, data packets sent and received by an application such as VoIP) in MPLS networks by identifying an application flow at an edge node using unencapsulated packet headers or an ingress data stream, then using stored mapping data to determine multiple parallel pseudowire paths through the MPLS core over which to communicate the application's data. *See, e.g.*, Ex. 1001 at 3:17-41.

The invention of the '320 Patent involves mapping an application flow across multiple pseudowires with awareness of application protocols and QoS requirements which addresses shortcomings of prior art MPLS networks that map only Layer-1 or Layer-2 connections to pseudowires, but failed to guarantee per-application QoS requirements. *Id.* at 1:22-57. This mapping in the claimed invention implements a distributed mapping (one-to-N) of the application across multiple pseudowires based on application needs (e.g., splitting a large flow and prioritizing more important RTP frames), with standard MPLS devices in the core requiring no modification. *Id.* at 4:29-50, 5:57-6:12, 8:35-38.

B. Claims of the '320 Patent

In Ground 1, Petitioner challenges Claims 1-5, 7-12, and 14-20 of the '320 Patent, which includes three independent claims—Claims 1, 8, and 15. Claim 1, a method claim, is representative and recited below:

1[pre] A method, comprising:

- [1.1]** at a node associated with a multiprotocol label switching system (MPLS) network, performing:
- [1.2]** identifying information associated with an application flow based on one or more unencapsulated packet headers of the application flow or based on an ingress data stream that includes the application flow;
- [1.3]** in response to identifying the information, and based on stored data that maps application flows with pseudowires, determining a plurality of pseudowires corresponding to paths through the MPLS network, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of pseudowires; and
- [1.4]** communicating data related to the sending device application via at least one of the plurality of pseudowires.

Ex. 1001 at 8:46-64.

Claims 2-5 and 7 depend on Claim 1. Independent Claim 8 essentially restates the method of Claim 1 as a device claim, and independent Claim 15 restates the method of Claim 1 as a computer-readable non-transitory medium claim. Claims 9-12 and 14 depend on independent Claim 8, and Claims 16-20 depend on independent Claim 15. Independent Claims 8 and 15 contain the same “a distributed mapping of

the application flow via at least one of the plurality of pseudowires” limitation. *Id.* at 9:42, 10:28-30. Petitioner references the same arguments for this claim element in the Petition. Pet. at 73, 76.

III. PERSON OF ORDINARY SKILL IN THE ART (POSITA)

The Petition proposes that:

... person of ordinary skill in the art (‘POSITA’) in October 2005 would have been someone knowledgeable and familiar with computer networking and, in particular, MPLS networks. A POSITA would have gained knowledge of these concepts through a mixture of training and work experience, such as by having at least a Bachelor’s degree in electrical engineering, computer science, or related field, and at least two to three years of training or additional work experience in the area of computer networking, or a related field. Additional hands-on and design experience could compensate for less formal education, and vice versa. The knowledge and skill of a POSITA is further reflected in the prior art references.

Pet. at 14. For purposes of this preliminary response, Patent Owner does not dispute this definition.

IV. CLAIM CONSTRUCTION

The Petition asserts that the challenged claims should be given their plain and ordinary meanings. *Id.* at 14. For purposes of this preliminary response, Patent

Owner does not dispute that the plain and ordinary meaning should apply to all claim terms and phrases.

V. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF PREVAILING ON ANY OF THE ASSERTED GROUNDS OF UNPATENTABILITY

The Petition raises two grounds of unpatentability, all of which are obviousness grounds and all of which fail to show that the challenged claims 1-20 are obvious as further detailed below.

A. Ground 1: The Petition fails to demonstrate any of the challenged claims 1-5, 7-12, and 14-20 are obvious over the combination of *Murphy* and *Taguchi*

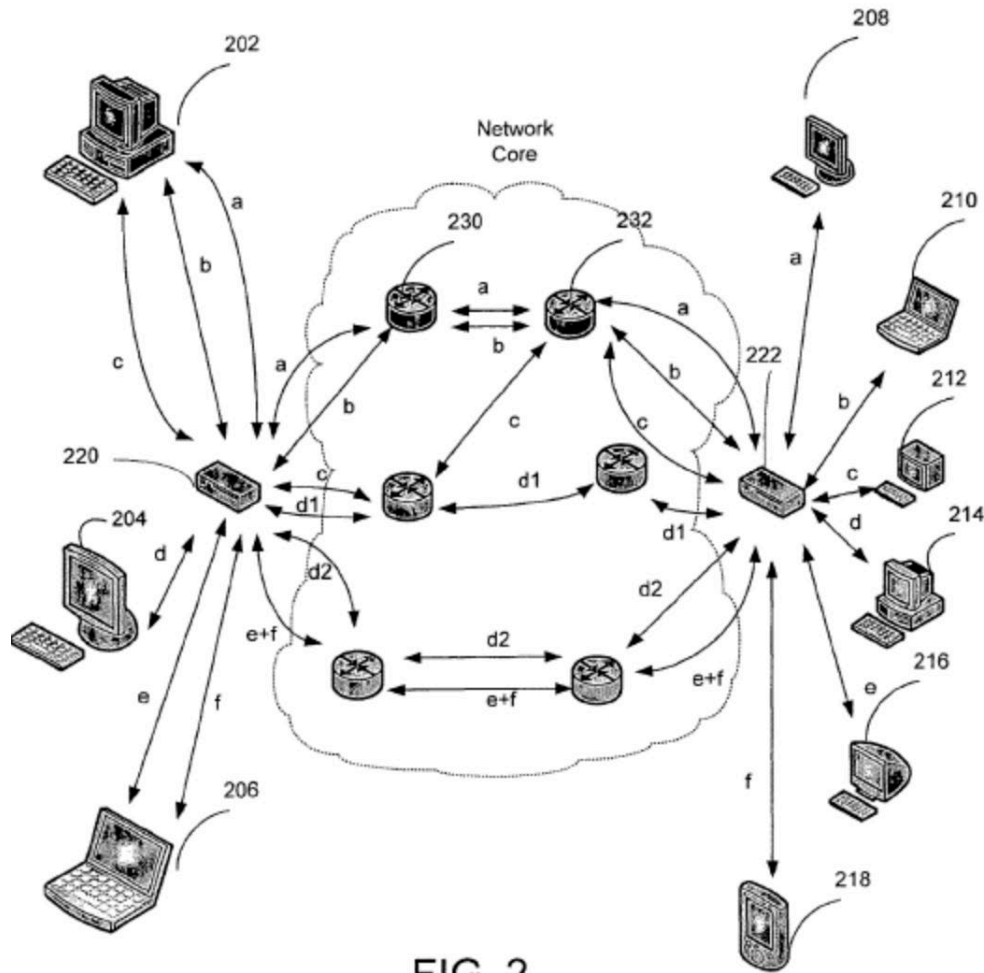
1. *The Petition does not show that Murphy discloses or renders obvious “[1.3] in response to identifying the information, and based on stored data that maps application flows with pseudowires, determining a plurality of pseudowires corresponding to paths through the MPLS network, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of pseudowires.”*

This limitation specifically requires “a distributed mapping of the application flow” across multiple pseudowires—a requirement of all challenged independent claims (*i.e.*, Claims 1, 8 and 15). The '320 Patent describes the difference between a distributed mapping and an aggregated mapping of application flows:

As will be shown in more detail below, the edge nodes map the application flows into Pseudowires in the ingress direction. A number of mapping schemes are possible, such as a one-to-one mapping, *a*

distributed mapping where an application flow is mapped to multiple Pseudowires, or an aggregated mapping where multiple flows are mapped to a single Pseudowire.

Ex. 1001 at 4:31-35 (emphasis added). The '320 Patent further explains in reference to Figure 2 shown below: “*application flow d is distributed to Pseudowires d1 and d2, and application flows e and f are aggregated to a single Pseudowire (e+f).*” *Id.* at 4:37-39 (emphasis added).



Id. at Fig. 2.

The Petition alleges that *Murphy* (Ex. 1005) teaches parts of this limitation (Pet. at 56-57), but acknowledges that any mapping in *Murphy* is not “distributed mapping.” Pet. at 56 (“alleging *Murphy* discloses ‘a ... mapping of the application flow via at least one of the plurality of pseudowires’ and noticeably omitting the claim term “distributed”). Simply put, *Murphy* does not teach, suggest, or render obvious a distributed mapping of an application flow, rather at best, it discloses an *aggregated* mapping of multiple data packet flows to a single labeled switch path (LSP). Specifically, *Murphy* discloses an *aggregated* mapping of a multiple data packet flows to a single labeled switch path (LSP) or mapping of a single packet flow to one LSP at a time, but not a distributed mapping of a single application flow to multiple parallel pseudowires as explained above in the '320 Patent specification. The Petition confirms this by describing Figure 4 of *Murphy*:

Murphy disclosed that the mapping data 62 associated a data packet flow to one LSP (e.g., FLOW 3 to LSP 2) and two packet flows to one LSP (e.g., FLOW 1 and FLOW 2 to LSP 1). EX-1005 7:16-26.

Pet. at 57 (citing Ex. 1005 at 7:16-26 and FIG.4).

RESERVATION DATA ↖ 60

FLOW 1	243.48.1.14	107.13.1.27	8 Mbps	10,000
FLOW 2	243.48.1.3	107.13.1.30	4 Mbps	10,000
FLOW 3	243.48.1.3	204.57.1.4	4 Mbps	5,000

PATH DATA ↖ 61

LSP 1	243.48.1.0	107.13.1.0	12 Mbps	12 Mbps
LSP 2	243.48.1.0	107.13.1.0	128 Mbps	4 Mbps

MAPPING DATA ↖ 62

FLOW 1	LSP 1
FLOW 2	LSP 1
FLOW 3	LSP 2

FIG. 4

Ex. 1005 at FIG. 4 (annotations added by Petitioner).

Despite these clear limitations on the disclosure by *Murphy*, Petition points to the disclosure of “mapping a packet flow to a primary LSP and a backup LSP.” Pet. at 57-58 (citing Ex. 1005 at 8:41-46). But, again, the Petition does not allege the mapping is distributed, instead alleging “*Murphy* disclosed ‘wherein the stored data indicates ... a ... mapping of the application flow via at least one of the plurality of pseudowires.’”). Pet. at 58. The cited passage in *Murphy* in fact states that a primary LSP and backup LSP are implemented “to provide a degree of *fault-tolerance*.” Ex. 1005 at 8:41-43 (emphasis added). Thus, the full context of *Murphy*’s disclosure shows that mapping a single packet flow to a primary LSP and a backup LSP is not

a distributed mapping. Rather, it is a mapping of the application flow to a single primary LSP and in the event that the primary LSP fails, the application flow is serviced by a single backup LSP. *Id.* at 8:43-46.

Murphy's implementation of mapping a packet flow to a primary LSP and a backup LSP is in stark contrast to a distributed mapping as taught by the '320 Patent where a single application flow is split into multiple streams of data mapped to multiple pseudowires and then subsequently reassembled back into a single application flow. For example, the '320 Patent states:

an application flow is distributed into multiple streams and transferred over the network via multiple Pseudowires (one-to-N). For example, a large flow exceeding a certain data rate threshold may be split into several Pseudowires to better utilize the available bandwidth. The ***division of the application flow into multiple streams*** is based at least in part on application-specific parameters.

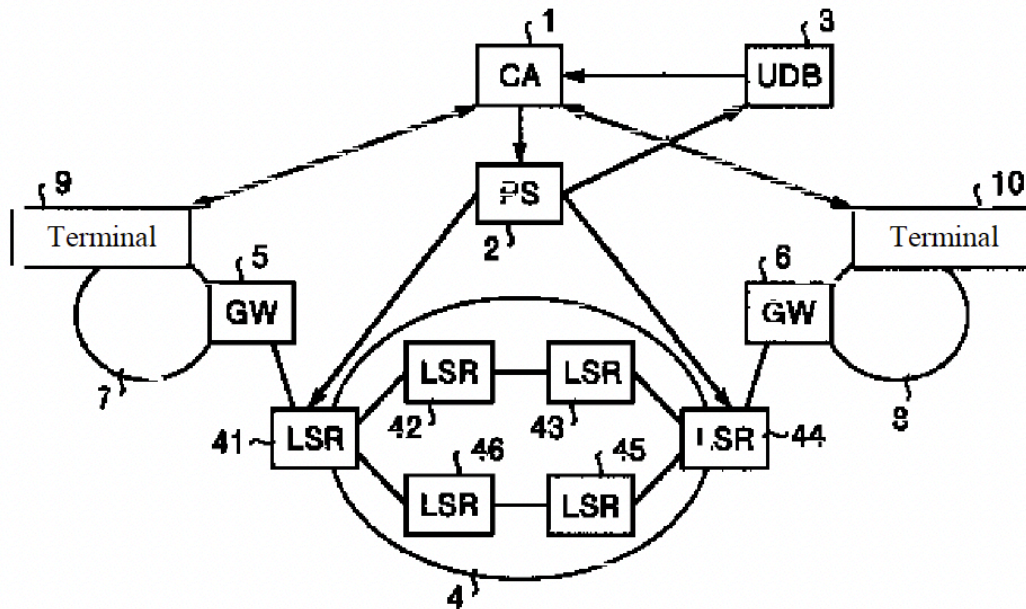
Ex. 1001 at 5:63-6:3 (emphasis added); *see also id* at 8:29-32. Indeed, *Murphy* does not disclose such division of a single application flow into multiple streams and mapped to multiple parallel pseudowire paths—*Murphy's* primary and backup LSP topology is for fault tolerance in a one-to-one mapping of an application flow to a single pseudowire at a time.

2. *The Petition does not show that Taguchi discloses or renders obvious “[1.3] in response to identifying the information, and based on stored data that maps application flows with pseudowires, determining a plurality of pseudowires corresponding to paths through the MPLS network, wherein the stored data indicates, for a sending device application, a distributed mapping of the application flow via at least one of the plurality of pseudowires.”*

The Petition further argues that the combination of *Murphy and Taguchi* discloses distributed mapping. Pet. at 58. However, *Taguchi* also fails to teach, suggest, or render obvious a distributed mapping of an application flow to multiple pseudowires as required by all of the challenged independent claims.

Taguchi is directed to a system which comprises a network of label switch routers (LSRs) for carrying streams of data, where the combination of two endpoint LSRs—*i.e.*, a first stage LSR and a last stage LSR—is defined as a “virtual communication path.” See, *e.g.*, Ex. 1006 at ¶¶ 48, 52, FIG. 1. Such virtual communication path may encompass one or more label switch paths (LSPs) traversing different sets of intermediate LSRs as illustrated below in FIG. 1 such as the LSP traversing LSRs 41, 42, 43, and 44 or the LSP traversing LSRs 41, 46, 45, and 44, where endpoint LSR 41 is the first stage LSR and endpoint LSR 44 is the last stage LSR. *Id.*

FIG. 1



Taguchi's objective is to select a single LSP that accommodates the incoming data stream. For example, *Taguchi* describes its "network policy control system [that] includes [...] label switch path setting means **for selecting an LSP accommodating the stream** from the label switch path defining means when a session is established between two terminals." Ex. 1006 at ¶ 21 (emphasis added); *see also id* at ¶¶ 22-23, 27 ("setting the LSR to **transfer the stream to the LSP when a determination is made that the selected LSP can accommodate the stream**"), ¶¶ 28, 45-46. In other words, *Taguchi* does not disclose a distributed mapping of a single data stream to multiple parallel pseudowires as claimed in the '320 Patent.

The Petition, however, contends that *Taguchi* discloses a distributed mapping by relying on a single sentence in the English translation of the Japanese publication: “‘when a virtual communication path’ had multiple LSPs [...] the stream is transferred while being scheduled for each LSP so as not to exceed the resource capacity of each LSP.” Pet. at 60 (citing Ex. 1006 at ¶ 73). The translated paragraph reads as follows:

[0073] Furthermore, the first stage LSR 41 that receives the packets of the stream transfers the packets of the stream to the virtual communication path for which resources were reserved when the session was established. Here, if the virtual communication path is made of a single LSP, the stream is transferred to that LSP. Furthermore, when a virtual communication path is made of a plurality of LSPs, the stream is transferred while being scheduled for each LSP so as not to exceed the resource capacity of each LSP.

Ex. 1006 at ¶ 73. This sentence does not suggest a distributed mapping, but rather refers to the resource scheduling mechanism in *Taguchi* to ensure that resource capacity of each LSP is not exceeded. For example, *Taguchi* states:

the policy server 2 determines whether the stream can be accommodated in the matching virtual communication path (step S34). In other words, if the remaining resource capacity of the virtual communication path is sufficient and the required resource capacity for the stream can be secured, or if the remaining resource capacity of the virtual communication path is insufficient but the *resource capacity*

can be added by means such as increasing the resource capacity of the LSP in the virtual communication path or setting up a new LSP, a determination is made that the virtual communication path can be accommodated.

Id. at ¶ 61 (emphasis added). *Taguchi* further explains that:

Furthermore, if the policy server 2 determines that the virtual communication path can accommodate the aforementioned stream (if Yes in step S34), *the remaining resource capacity of the virtual communication path, [sic] acquired by subtracting the resource capacity of the aforementioned stream from the remaining resource capacity of the virtual communication path* is [sic] associated with the virtual communication path, and is stored together with the session identifier and the resource capacity of the aforementioned stream (step S35).

Id. at ¶ 62 (emphasis added). In other words, the scheduling for each LSP refers to the allocation and management of resources associated with the stream for each of the LSPs so as not to exceed the resource capacity of each LSP. But the data is still transmitted as one stream over a single LSP at a time. Indeed, *Taguchi* does not expressly or inherently disclose a distributed mapping of a single stream subdivided across multiple parallel paths (nor does the Petition contend that this limitation is disclosed inherently).

Petitioner misreads this sentence in *Taguchi*, which is devoid of any disclosure whatsoever that the stream is split into multiple sub-streams and mapped onto multiple LSPs. Nor does Petitioner point to any disclosure in *Taguchi* of reassembling sub-streams of data back to a single stream. Indeed, the only support for Petitioner's interpretation of this sentence in *Taguchi* is its expert Dr. Reddy's declaration. Ex. 1003 at ¶ 132. But, Dr. Reddy likewise fails to support the Petition's theory. The declaration merely parrots verbatim the Petition and fails to provide any further reasoning concerning why a POSITA would have understood *Taguchi* as the Petition claims. *Compare* Ex. 1003 at ¶ 132 with Pet. at 60:

Petition at 60	Dr. Reddy Declaration at ¶ 132
For example, a first LSP above included the path through LSRs 41, 42, 43, and 44, and a second LSP included the path through LSRs 41, 46, 45, 44. EX-1006 ¶52. Further, <i>Taguchi</i> disclosed that when its “virtual communication path” had multiple LSPs, such as that shown above, “the stream is transferred while being scheduled for each LSP so as not to exceed the resource capacity of each LSP.” EX 1006 ¶73. Thus, <i>Taguchi</i> disclosed <i>a distributed mapping of the application flow via at least one of the plurality of pseudowires</i> . EX 1003 ¶132.	For example, a first LSP above included the path through LSRs 41, 42, 43, and 44, and a second LSP included the path through LSRs 41, 46, 45, 44. EX-1006 ¶52. Further, <i>Taguchi</i> disclosed that when its “virtual communication path” had multiple LSPs, such as that shown above, “the stream is transferred while being scheduled for each LSP so as not to exceed the resource capacity of each LSP.” EX 1006 ¶73. Thus, <i>Taguchi</i> disclosed <i>a distributed mapping of the application flow via at least one of the plurality of pseudowires</i> .

The Reddy declaration merely states in conclusory fashion, and without citation or analysis, that a POSITA would understand that because *Taguchi* discloses scheduling for each LSP so as not to exceed the resource capacity of each LSP, *Taguchi* discloses a distributed mapping of the application flow. Ex. 1003 at ¶ 132. This conclusory statement parroting the Petition should be accorded little if any weight. *cxLoyalty, Inc. v. Maritz Holdings Inc.*, 986 F.3d 1367, 1378 (Fed. Cir. 2021) (“We do not accord weight to conclusory expert testimony.”); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-17 (PTAB Aug. 24, 2022) (precedential) (denying institution and noting that the petitioner’s expert declaration “merely repeats, verbatim, the conclusory assertion for which it is offered to support ... and is entitled to little weight”), *sua sponte Director Review*, Paper 12 at 5 (PTAB Feb. 10, 2023) (affirming denial of institution and “giving little weight to Petitioner’s expert because the expert declaration merely offered conclusory assertions without underlying factual support and repeated, *verbatim*, Petitioner’s conclusory arguments”), *POP Review denied*, Paper 13 (PTAB Feb. 10, 2023).

Because the Petition fails to demonstrate that either *Murphy* or *Taguchi* discloses or renders obvious distributed mapping, the Petition does not show that there is a reasonable likelihood that Petitioner would prevail with respect to any of the challenged claims.

B. Ground 2: The Petition fails to demonstrate any of the challenged claims 6 and 13 are obvious over the combination of *Murphy*, *Taguchi*, and *Booth*

In Ground 2, the Petition asserts the *Booth* reference together with the *Murphy* and *Taguchi* combination from Ground 1 as allegedly teaching Claims 6 and 13, which depend on independent Claims 1 and 8, respectively. The Petition does not allege that combining *Booth* with *Murphy* and *Taguchi* satisfies any of the limitations of the independent claims, including the “distributed mapping” element. Thus, for at least the same reasons as detailed above for why *Murphy* and *Taguchi* do not disclose or render obvious independent Claims 1 and 8, the Petition also cannot succeed as to Ground 2.

VI. CONCLUSION

The Petition fails to establish a reasonable likelihood of prevailing on any of Grounds 1-2, and therefore, Patent Owner respectfully requests that the Board deny institution of the Petition.

Respectfully Submitted,

Dated: December 11, 2025

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Patent Owner's Preliminary Response
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(Case No. IPR2025-01364)

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

Under the provisions of 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for all portions of the foregoing Patent Owner's Preliminary Response totals 3,217 words per Microsoft Word, which complies with the requirement of 14,000 words allowed under 37 C.F.R. § 42.24(d).

Dated: December 11, 2025

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CERTIFICATE OF SERVICE

As authorized by Patent Owner's Mandatory Notice, I hereby certify that on December 11, 2025, a copy of this document has been served in its entirety by electronic mail on Petitioner's lead and backup counsel.

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(Case No. IPR2025-01364)

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