

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

X CORPORATION,
Petitioner,

v.

STERLING COMPUTERS CORPORATION,
Patent Owner.

Case No. IPR2025-00299
U.S. Patent No. 7,716,217

**PETITIONER'S REPLY TO PATENT OWNER'S REQUEST FOR
DIRECTOR REVIEW**

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EXHIBIT LIST

No.	Short Name	Reference
1001	217 Patent	Certified Copy of U.S. Patent 7,716,217
1002	217 File History	Certified File History of 7,716,217
1003	828 Provisional	Certified United States Provisional Patent Application No. 60/758,828.
1004	Houh Decl.	Expert Declaration of Dr. Henry Houh
1005	Houh CV	Curriculum Vitae of Dr. Henry Houh
1006	<u>Dumais</u>	U.S. Patent Application Publication 2007/0016553A1
1007	<u>Kircher</u>	U.S. Patent Application Publication 2003/0195937A1
1008	<u>Krug</u>	Certified Translation of WIPO Patent 2003/023650A2
1009	Sch. Order	Order 32 (Scheduling Order) in <i>Sterling Computers Corporation v. X Corp.</i> , Case No. 1:24-cv-00552 (W.D. Tex. May 22, 2024)
1010	Sch. Hr. Tr.	Oct. 21, 2024, Transcript of Initial Pretrial (Scheduling) Conference in <i>Sterling Computers Corporation v. X Corp.</i> , Case No. 1:24-cv-00552 (W.D. Tex. May 22, 2024).
1011	Goldberg	David Goldberg, et al., <i>Using Collaborative Filtering To Weave An Information Tapestry</i> , COMMUNICATIONS OF THE ACM, 35:12 (Dec. 1992).
1012	Kennedy	U.S. Patent 6,134,582
1013	Mailk	U.S. Patent Application Publication 2004/0078447
1014	587 Application	International Application PCT/US07/60587
1015	587 File History	File History of PCT/US07/60587
1016	RESERVED	

1017	118 File History	File History of 11/426,118
1018	605 Provisional	Provisional Patent Application No. 60/693,605.
1019	Shaw	U.S. Patent 6,249,807
1020	Karamchedu	U.S. Patent Application Publication 2004/0054744
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1027	Boykin	P. Oscar Boykin, et al., <i>Personal Email Networks: An Effective Anti-Spam Tool</i> , ARXIV.ORG, 4 (Feb. 2004)
1028	Horvitz	International PCT Application WO2001/069432
1029	Lui	Andrew K. Lui, et al., <i>An Advanced Organizer for Asynchronous Discussion Forums</i> , IEEE (2005).
1030	Claypool	Mark Claypool, et al., <i>Combining Content-Based and Collaborative Filters in an Online Newspaper</i> , ACM SIGIR WORKSHOP ON RECOMMENDER SYSTEMS (Aug. 1999).
1031	Brun	U.S. Patent Application Publication 2007/0168430
1032	Linden	Greg Linden, et al., <i>Amazon.com Recommendations Item-to-Item Collaborative Filtering</i> , IEEE INTERNET COMPUTING (2003).
1033	Frankowski	International PCT Application WO2001/53973
1034	Dabbish	Laura A. Dabbish, et al., <i>Understanding Email Use: Predicting Action on a Message</i> , CHI (2005).
1035	Basu	Chumki Basu, et al., <i>Recommendation as Classification: Using Social and Content-Based</i>

		<i>Information in Recommendation</i> , AAAI-98 PROCEEDINGS (1998).
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1037	Alspector	Joshua Alspector, et al., <i>Comparing Feature-Based and Clique-Based User Models for Movie Selection</i> , PROCEEDINGS OF THE THIRD ACM CONFERENCE ON DIGITAL LIBRARIES (1998).
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1050	J. Marston Final	Final Transcript of Justin Marston Deposition,

	Depo. Tr.	November 11, 2025
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1055	Updated EX2041 BlueSpace Doc. Log	Updated EX2041 BlueSpace Document Log, June 2005 to January 2006
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1063	Abrol Patent	U.S. Patent 8,965,974
1064	Paul Marston Depo.	Final Transcript Dr. Victor “Paul” Marston, November 17, 2025
1065	University Schedule 2004-2005	University of Central Lancashire Schedule 2004-2005
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1067	Paul Marston Doc. List	Dr. Paul Marston Document List
1068	Sterling Metadata Table	Table of Metadata for Sterling’s Inventive Documents
1069	Native Metadata EX2004	Sterling’s Extracted Metadata from Native of EX2004 Conception document
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I. Introduction

The Board's Final Written Decision found all twenty-two claims of the '217 Patent unpatentable on five grounds of obviousness. FWD, 57. First and foremost, Sterling's Request for Director Review does not rest on any "(a) abuse of discretion, (b) important issues of law or policy, (c) erroneous findings of material fact, or (d) erroneous conclusions of law."¹ Sterling simply disagrees with the Board's findings. Director review is not warranted here.

Before the Board, Sterling challenged a single limitation (Limitation 1[f]) across all five grounds: "*identify[ing] at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user.*" POR, 2–5. Sterling's primary theory was that neither Dumais nor the Kircher/Krug combination discloses identifying a user who is both a recipient and cognate to the first user. *Id.*; PO Sur-reply, 1–2. The Board addressed all of Sterling's arguments in detail and found that both Dumais and the Kircher/Krug combination met the "*recipient*" and "*cognate*" requirements of Limitation 1[f].

The foundation of Sterling's Request is two arguments it did not present to the Board: (1) that Dumais' user models are formed before the piece of content being scored is known; and (2) that Krug's user groups are formed before the first user is

¹ See § 2.B Proceedings under part 42 of 37 C.F.R., www.uspto.gov/patents/ptab/decisions/director-review-process.

known. Sterling does not identify where either argument was raised during trial—as it must do. *See* 37 C.F.R. § 42.71(d) (“The request must specifically identify ... the place where each matter was previously addressed in a motion, an opposition, a reply, or a sur-reply.”). These arguments should be rejected on this threshold deficiency alone. Regardless, as explained below, Sterling’s reading of how Dumais and Kircher/Krug operate is incorrect and unsupported.

The other arguments raised by Sterling in its Request are positions that were considered and rejected by the Board. Sterling does not identify any issue the Board “misapprehended or overlooked.” *Id.* Sterling’s Request for Director Review should be denied.

II. The Board analyzed “*cognate*” and “*recipient*” as separate limitations

Sterling contends the Board “collapsed” the “*cognate*” and “*recipient*” limitations, but this contention misreads the Final Written Decision. Paper 55, 1. The Board was explicit: “Patent Owner’s requirement that ‘at least one other of the plurality of users’ is specifically cognate to ‘the user’ who was sent the content is plainly recited in the claim language itself.” FWD, 12. Petitioner did not contest this requirement. There is no dispute the two limitations are distinct—the Board simply found the prior art disclosed users satisfying both conditions. FWD, 23–26, 44–45.

The claim language is unambiguous: the system must “*identify at least one other of the plurality of users that is a recipient of the piece of electronic content*”

and that is cognate to the user.” Limitation 1[f] thus requires an identified user (or group of users) to meet two conditions: (1) be a recipient and (2) be “*cognate*” to the user. Nothing in the claim language prohibits those two conditions from being satisfied by the same characteristic. Nor does Sterling identify such a prohibition. *See Intell. Ventures II LLC v. Ericsson Inc.*, 686 F. App’x 900, 907 (Fed. Cir. 2017) (Board did not err by construing claim reciting two separate “filter” limitations as broad enough to have same filter perform both filtering functions).

Underlying Sterling’s new argument is an attempt to add an unrecited condition to the limitation: that the two conditions must be satisfied through independent means—*i.e.*, the cognate determination cannot overlap with recipient status. Sterling contends that if shared access to the same content can simultaneously make users both “*recipients*” and “*cognate*,” then the “*cognate*” requirement is rendered superfluous. But the specification itself expressly discloses forming a cognate group based on “allowed readers (access rights)”—*i.e.*, based on a user’s status as a recipient. EX1001, 43:30–37, 44:37–51. If Sterling’s position were correct, this embodiment would be excluded from the claims, a result that is “rarely, if ever, correct.” *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

Nor did the Board collapse the “*cognate*” and “*recipient*” requirements. Patent Owner acknowledges that both parties and the Board recognize the distinct

“*recipient*” and “*cognate*” limitation. Paper 55, 2. The Board analyzed each limitation and did not hold that satisfying “*recipient*” automatically satisfies “*cognate*.” See FWD, 44–45 (commonly accessing same object relates to “receiv[ing] the same content and are also cognate to each other”).

Dumais. The Board explained that Dumais’ user model “identif[ies] at least one other of the plurality of users” through “collaborative filtering techniques that develop profiles by the analysis of **similarities among individuals** or groups of individuals,” based on “content and/or **usage of items**.” FWD, 23 (citing Pet., 32; Pet. Reply, 27). The Board further found that a skilled artisan would have understood that “two users who had similar interactions with the same data item would have a high degree of similarity and would be grouped,” and that “the members of the cognate ‘group’ are also a ‘recipient’ of the content.” FWD, 26 (citing Pet. Reply, 28; Pet., 34). Sterling does not explain how the Board collapsed the claim limitations nor identify what is actually missing from this analysis. Sterling itself has acknowledged that Limitation 1[f] “must ‘*identify*’ another ‘*user*’ that is **both** ‘*a recipient of the piece of electronic content*’ **and also** ‘*is cognate to the [first] user*’.” POR, 4. That is exactly what the Board found.

Kircher/Krug. The Board found that Krug identifies users through creation of “user groups” in several ways, including, “all users who access a specific object” or specifying groups of users like a group of “all women.” FWD, 44–45 (citing Pet.

65–66). The Board explained that the “user group of ‘all users who access a specific object’ identifies users that are both recipients of the content the user is sent and cognate to the user” because they “share similar past user actions—here, accessing the same content.” FWD at 45. The Board did not collapse the two limitations and correctly held that Krug’s user groups satisfy both requirements of the claim. Krug’s disclosure aligns exactly with the specification’s discussion of forming a cognate group based on “allowed readers (access rights).” EX1001, 43:30–37, 44:37–51.

III. Sterling’s New Construction That Adds a “Particular Sequence of Events” Requirement Should Be Rejected

For the first time, Sterling contends the “claims require a particular sequence of events.” Paper 55, 5. This was not raised before the Board—Sterling does not identify any record cite to this argument—and should be rejected on that basis alone. *See* 37 C.F.R. § 42.71(d) (request must “specifically identify ... place where each matter was previously addressed”). Sterling also fails to identify the “particular sequence of events” it contends is required, pointing to a single chronological “John’s email” example in the ’217 Patent. EX1001, 26:62–27:65. Sterling identifies no language in the claims or specification that imposes a chronological order.

Limitation 1[f] requires the second relevance measurement module to “*identify at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user.*” As explained above, Petitioner agrees that the identified user (or group) must satisfy two conditions; (1) *a recipient*

of the piece of electronic content” and (2) “*cognate to the user.*” While these claim limitations have antecedent bases within different limitations, the claims do not recite a specific order for when those conditions are assessed or when the cognate group is formed relative to when the piece of content is known. The claim only requires that identification occur and the identified user meet both conditions—not that conditions happen in a particular order. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (“Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.”).

Moreover, a sequencing requirement is refuted by the specification, which describes the claim limitations in either order or co-extensively. For instance, communal filtering identifies recipient status first (“behavior of other recipients of a given piece of content to determine the contents relevance to the user”) and then cognate status (system “correlate[s] the past behavior of other users to the user in question”). EX1001, 43:61–66. But role or group-based approaches consider cognate status first (“[u]sers in the same groups or roles may be assumed to be similar”) and the users’ status as recipients second (“if a number of users in a role receive an electronic mail object, and other users in that role have already viewed it and deleted it, then it is likely to be of low relevance to another user in that role”) *Id.*, at 43:38–47. The specification also describes examples where the two conditions are co-extensive: cluster models “work by segmenting users (and other entities) into

categories based on their actions or attributes.” *Id.*, at 44:37–51. One of those attributes can be “allowed readers (access rights).” *Id.*

In short, Sterling’s proposed construction excludes multiple embodiments from the claims—a disfavored result. *See Vitronics*, 90 F.3d at 1583.

IV. Dumais Discloses “*Identifying...*” Under Sterling’s New Construction

Sterling contends Dumais does not disclose the “identifying ...” limitation by speculating about an edge case where Dumais creates a user model where “Sue has not yet run any search,” and “does not yet know” whether John’s email will be an item that needs to be scored for Sue. Paper 55, 8. This hypothetical is unsupported by expert testimony, misreads the Petition, and is not described in Dumais.

Dumais discloses that “[m]odels can be derived for individuals or groups of individuals ... via collaborative filtering techniques” based on “analysis of **similarities among individuals** or groups of individuals,” and “[s]imilarity computations can be based on the content and/or **usage of items**.” EX1006 ¶¶ 52, 55. Collaborative filtering “process[es] previous user activities from a group of users that may indicate preferences for a given user.” *Id.* Thus, Dumais’ **system already knows users’ “previous user activities” and their “usage of items” at the time the model is created and applied.** FWD, 24. Dumais’ collaborative filtering does not necessarily require receipt of a particular piece of content to be identified before knowing which users have interacted with shared items.

Sterling's hypothetical ignores that Dumais' model is dynamic, not static. Dumais explains that "[o]ne aspect in successful personalization is to build a model of the user that accurately reflects their interests and is **easy to maintain and adapt to changes** regarding long-term and short-term interests." EX1006, ¶ 43. "[M]achine learning techniques can be applied to learn user characteristics and interests **over time as well as how and when data is interacted with by users.**" *Id.*, ¶ 53. Moreover, "[a]s users process data over time, their activity with the data can be monitored and weighted according to the type and intensity of the activity," with "scores or weights ... assigned over a broad range of file usage activities." *Id.*, ¶¶ 7–8. These activity weights feed back into the model each time a user interacts with a data item. *Id.*

Sterling's hypothetical describes a transient state before any user action, and mischaracterizes Dumais. When Sue runs a search and John's email enters the system as an item to be scored, the model **already** reflects the accumulated activity of multiple users on that shared item.

Put another way, when Dumais scores John's email for Sue, the user model already knows: (1) which other users have interacted with John's email (*i.e.*, who the recipients are); and (2) which of those other users are similar to Sue based on shared patterns of item usage (*i.e.*, who is cognate). Both conditions of Limitation 1[f] are satisfied at the moment of scoring regardless of when the model was first

initialized. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (Obviousness analysis includes “person of ordinary skill ha[ving] good reason to pursue the known options within his or her technical grasp,” not narrow artificial hypotheticals).

V. Kircher/Krug Discloses “Identifying...” Under Sterling’s New Construction

As with Dumais, Sterling’s contention that Kircher/Krug does not disclose the “identifying ...” limitation rests on a mischaracterization of the ground by assuming without support that the Krug model is static. This assumption is unsupported.

Sterling contends that Krug forms user groups “before Krug knows who is doing the searching.” Paper 55, 8. Sterling’s assertion mischaracterizes Krug.

Krug identifies users for inclusion in a “user group” in multiple ways, including “groups of users [that] can be specified (for example, all women) or determined automatically (*e.g.*, all users who access a specific object).” EX1008, ¶ 31. Assignment to a user group “can be initiated by a user himself” or “made implicitly, *e.g.*, based on the presence of certain properties of the user.” *Id.*

Krug “provides for the user profile of a user to be designed **to change over time** in order to capture changes in the user’s properties and in his usage behavior,” and “[t]o adapt to changing usage behavior of the user, ... [such that] the user profile can be **updated after each user interaction** with an object.” EX1008 ¶¶ 33–34. Likewise, group profiles “can be determined **after each interaction** as an average value of all members of the group.” *Id.*, ¶ 92.

The timing of when Krug first creates a user group is therefore irrelevant. At the moment a relevance ranking is performed in Krug, the system knows: (1) which users are members of the relevant group including, where applicable, all users who have accessed the specific object that is being scored; and (2) what the current profile of those group members is, reflecting their aggregated historical interactions with shared content. Sterling's hypothetical edge case, focused on a transient moment before any users have interacted with the system, omits significant aspects of Krug's disclosure relied on in the Petition and by the Board. Paper 55, 9.

VI. Sterling's Inoperability Argument Misreads the Petition

Sterling contends the Board's decision was "erroneous because it is based upon a combination not included in the Petition." Paper 55, 10. That is false.

The Petition's combination arguments were not limited to Krug's plug-in. Petitioner's combination adds "Krug's techniques for determining the relevance of electronic content into Kircher's system for ranking received emails based on the emails' relevance," such that "Kircher's emails would have been ranked (in-part) using Krug's comparison value." FWD at 33 (citing Pet. 50–54, 58). Sterling focuses on a single demonstrative and ignores the full scope of the Petition's combination arguments. The Board recognized that "the person of ordinary skill in the art would have considered which of Krug's particular prioritization and relevance criteria were applicable for incorporation into Kircher's relevance system which assesses and

weighs relevance criteria,” and that Petitioner’s expert identified “which specific factors and calculations in Krug would have been applied to the assessments and weighting of Kircher.” FWD, 38 (citing PO Resp. 13; Ex. 1007 Fig. 5C; Ex. 1008 ¶¶ 104–129; EX1004 ¶¶ 416, 527, 559–562).

Both Kircher and Krug are software programs that expressly contemplate expandability and combination. EX1004 ¶¶ 426–33. The Board agreed that “combining the teachings of Kircher and Krug was within the ability of a person of ordinary skill in the art at the relevant time”—rejecting Sterling’s inoperability argument as relying on “a contrived distinction between internet browsers and email systems.” FWD, 37. The Board found: “Krug’s plug-in is, ultimately, a software program performing Krug’s content prioritization technique”; “Kircher’s email system is also a software application”; and “implementing software features from one piece of software to another is within the skill of the person of ordinary skill in the art.” *Id.*

The Board’s finding is supported by the record. Krug discloses an embodiment where its software is installed “as a plug-in ... for a commercially available Internet browser” designed to be integrated into other software applications. EX1008 ¶ 99. Kircher employs fuzzy logic processing using “more than one rule,” with an “entire group of rules” collectively forming a “rulebase”—a system designed to accommodate additional rules and relevance criteria. Pet. 51;

EX1007 ¶ 44, Fig. 5C. A skilled artisan would have found it straightforward to integrate Krug's relevance criteria as additional rules within Kircher's ranking system. EX1004 ¶¶ 426–33. The Board agreed. FWD, 38.

The Board also explained that Sterling's inoperability argument is “in tension with, and weakened by, its arguments on conception.” FWD, 38–39. Sterling contends that a skilled artisan “would face significant challenges in attempting to combine Kircher and Krug” while also contending that “significant changes” to the '217 Patent's “highly complex” relevance formulas required no “more than ordinary skill ... to achieve the subsequent, refined algorithms.” *Id.* The Board found that “Sterling's own diminishment of the difficulty in adopting formulas further suggests that adopting Krug's techniques for Kircher's system was within the skill of the person of ordinary skill in the art.” *Id.*

The Board reasonably found Sterling's position that integrating ranking formulas across software systems was prohibitively difficult when challenging Petitioner's grounds—but trivial for a POSITA when arguing for an earlier conception date—was inconsistent. Sterling's inoperability argument here faces the same inconsistency. This argument does not provide a basis for Director Review.

VII. The Board Did Not Ignore Sterling's Evidence Because Sterling Failed to Carry Its Burden on Diligence

When a patentee attempts to antedate an asserted prior art reference, “the patent owner assumes a temporary burden of production.” *Parus Holds., Inc. v.*

Google LLC, 70 F.4th 1365, 1371 (Fed. Cir. 2023). The Board determined that Sterling failed to carry that burden and therefore found Dumais to be prior art to the '217 Patent. FWD, 15.

Sterling's citations to purported evidence without analysis or pinpoint cites did not satisfy its burden. The Board recognized that the "biggest shortcoming" in Sterling's showing was its "failure to specifically cite the relevant record evidence combined with an explanation of the significance of the produced material in briefs." FWD, 16 (citing *Parus*, 70 F.4th at 1372). Instead of citing what specific portions of its evidentiary exhibits were relevant and why, Sterling cited hundreds of pages of exhibits and declarations (Exhibits 2032 through 2078, Justin Marston's Second Supplemental Declaration (EX2030), and Paul Marston's Declaration (EX2031)) and asserted—without analysis or explanation—they showed diligence. PO Resp. 46–47. Sterling included no pinpoint citations to paragraphs or pages, and did not "explain or point out any specific dates, activities, or amount of time that the inventors actually worked on the claimed invention." FWD, 17.

As the Board recognized, the "burden of production cannot be met simply by throwing mountains of evidence at the Board without explanation or identification of the relevant portions of that evidence. One cannot reasonably expect the Board to sift through hundreds of documents, thousands of pages, to find the relevant facts." FWD, 14–16 (citing *Parus*, 70 F.4th at 1371); see *Costar Realty Info., Inc. v.*

Clantech, Inc., IPR2022-00800, Paper 77, 29–30 (P.T.A.B. Nov. 16, 2023) (burden of production not met by sparse citations to 112 exhibits). The Board declined Sterling’s “invitation to sift through the hundreds of pages spanning dozens of exhibits in search of evidence and reasons supporting Sterling’s assertion of diligence.” FWD, 17. This is not error—it is the correct application of the law.

The Board also found that Sterling’s Sur-reply arguments and new citations were untimely. *Id.*, at 17–18. Sterling also cited uncorroborated inventor testimony, which does not show diligence. *See Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.*, 841 F.3d 1004, 1007 (Fed. Cir. 2016) (“An inventor’s testimony regarding his reasonable diligence must be corroborated by evidence.”). Specifically, Sterling claimed the Marstons spent more than 108 hours working on the provisional patent application over the critical period, but cited no non-testimonial evidence beyond the inventors’ own testimony (Justin Marston’s Second Supp. Decl. (EX2030) and Paul Marston’s Deposition (EX1064)). FWD 18, (citing PO Sur-reply, 23–24).

Moreover, Sterling’s evidence left four months of the critical period unaccounted for, suggesting a lack of diligence. In particular, Sterling’s Sur-reply discussed activities and non-testimonial evidence supporting alleged diligence between Nov. 13, 2005 to Jan. 11, 2006, leaving four months of the six-month critical period unaccounted for—June 29, 2005 through Nov. 12, 2005. And much of Sterling’s cited non-testimonial evidence was undated or outside the critical

period, and thus did not show diligence during the critical period. *Id.*

After weighing the totality of the evidence, the Board found that Sterling did not carry its burden of production to show that the '217 Patent was entitled to an earlier priority date than Dumais. The Board's determination was not arbitrary or capricious. Rather, the Board evaluated the record, applied the *Parus* standard, and determined that Sterling failed to meet its burden to establish an earlier invention date. The Board's reasoned and supported finding should not be reviewed.

Dated: July 16, 2026

Respectfully Submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), I hereby certify that on this 16th day of July, 2026, I caused to be served a true and correct copy of the foregoing and any accompanying exhibits by e-mail on the following counsel:

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CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing Petitioner's Reply to Patent Owner's Response contains 5,599 words according to the word count of the word-processing program used to prepare this Reply.

Dated: July 16, 2026

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