

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO (UNITED STATES) INC. and
MOTOROLA MOBILITY LLC,
Petitioners,

v.

COLLISION COMMUNICATIONS, INC.,
Patent Owner.

Case IPR2025-00927
Patent 7,593,492

**PETITIONER'S OPPOSITION TO
PATENT OWNER'S DISCRETIONARY DENIAL BRIEF**

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EXHIBITS

- EX1001 U.S. Patent No. 7,593,492 to Robinson et al. (“the ’492 Patent”)
- EX1002 Prosecution History of the ’492 Patent (“the Prosecution History”)
- EX1003 Declaration of Dr. Paul S. Min
- EX1004 U.S. Publication No. 2004/0213360 (“McElwain”)
- EX1005 International Publication No. WO2006/092090 (“Wang”)
- EX1006 U.S. Publication No. 2007/0060061 (“Sampath”)
- EX1007 U.S. Publication No. 2003/0193966 (“Mills”)
- EX1008 U.S. Publication No. 2006/0188031 (“Liu”)
- EX1009 Adaptive Modulation and Adaptive Antenna Array Assisted Network Performance of Multi-User Detection Aided UTRA-like FDD/CDMA Systems (2002), *available at* <https://eprints.soton.ac.uk/257148/1/jsb-lh-vtcfall-2002.pdf>
- EX1010 Single- and Multi-Carrier CDMA: Multi-User Detection, Space-Time Spreading, Synchronization and Standards (2003), *available at* https://eprints.soton.ac.uk/258485/3/sample-chaps1%252C2%252C9%252C17_singlepdf.pdf
- EX1011 U.S. Publication No. 2002/0037061 (“Learned”)
- EX1012 Adaptive Symbol and Parameter Estimation in Asynchronous Multiuser CDMA Detectors (1997), *available at* https://www.researchgate.net/profile/Teng-Lim-3/publication/3159141_Adaptive_symbol_and_parameter_estimation_in_asynchronous_multiuser_CDMA_detectors/links/09e4150b595e286cbf000000/Adaptive-symbol-and-parameter-estimation-in-asynchronous-multiuser-CDMA-detectors.pdf

- EX1013 Hybrid Iterative Multiuser Detection for Channel Coded Space Division Multiple Access OFDM Systems (2006), *available at* <https://eprints.soton.ac.uk/262110/1/46-tvt06-jiang-ng-hanzo.pdf>
- EX1014 Multi-User Detection for DS-CDMA Communications (1996), *available at* http://cs-www.cs.yale.edu/homes/yyr/readings/wireless/wireless_reading/article16.pdf
- EX1015 Hopfield Neural Network Implementation of the Optimal CDMA Multiuser Detector (1995), *available at* <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=aff318a439822a7ab47683b1e604a03bce633d26>
- EX1016 Application of Density Evolution in Turbo-MUD Design for Overloaded Coded CDMA Systems (2004), *available at* <https://flore.unifi.it/bitstream/2158/238224/1/Application%20of%20Density%20Evolution%20in%20Turbo-MUD%20Design%20for%20Overloaded%20Coded%20CDMA%20Systems.pdf>
- EX1017 An Iterative Multiuser Receiver Using Partial Parallel Interference Cancellation for Turbo-Coded DS-CDMA Systems (2004), *available at* <https://ieeexplore.ieee.org/document/965116>
- EX1018 A Low-Complexity Iterative Multiuser Receiver for Turbo-Coded DS-CDMA Systems (2001), *available at* <https://core.ac.uk/download/pdf/61613862.pdf>
- EX1019 Computational Complexity and Performance of RAKE Receivers with Channel Estimation for DS-UWB (2005), *available at* https://www.researchgate.net/profile/Tomoaki-Ohtsuki/publication/220242734_Computational_Complexity_and_Performance_of_RAKE_Receivers_with_Channel_Estimation_for_DS-UWB/links/551d5c0a0cf2fcae4456d460/Computational-

Complexity-and-Performance-of-RAKE-Receivers-with-
Channel-Estimation-for-DS-UWB.pdf

- EX1020 Iterative Multiuser Interference Reduction: Turbo CDMA (1999), *available at* https://www.researchgate.net/publication/3159939_Iterative_Multiuser_Interference_Reduction_Turbo_CDMA
- EX1021 Complexity in Geometric SINR (2007), *available at* https://www.researchgate.net/profile/Yvonne-Anne-Pignolet/publication/221628472_Complexity_in_geometric_SINR/links/544129930cf2a6a049a56308/Complexity-in-geometric-SINR.pdf
- EX1022 The Eigen-decomposition: Eigenvalues and Eigenvectors (2007), *available at* <https://malabdali.com/wp-content/uploads/2023/10/Abdi-EVD2007-pretty.pdf>
- EX1023 Harville, *Matrix Algebra From a Statistician's Perspective* (1997)
- EX1024 Direction of Arrival Estimation Using the Parameterized Spatial Correlation Matrix (2007), *available at* https://www.wirelesslab.ca/File/pdf_files/journals/J015.pdf
- EX1025 Correlation Matrix Distance, a Meaningful Measure for Evaluation of Non-Stationary MIMO Channels (2005), *available at* <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=d09aefac68ac3ef15829ef55e18b7fb166c559c5>
- EX1026-1099 RESERVED
- EX1100 Claim Construction Order in *Collision Communications, Inc. v. Nokia Networks and Solutions Oy et al.*, 2-21-cv-00308 (EDTX) (Aug. 31, 2022)

- EX1101 *Samsung Electronics America, Inc. v. Collision Communications, Inc.*, Case No IPR2024-01247, Paper No. 14 (PTAB Feb. 7, 2025)
- EX1102 Memorandum, Interim Processes for PTAB Workload Management, March 26, 2025, *available at* <https://www.uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf>
- EX1103 Patent Trial and Appeal Board (PTAB) Boardside Chat: Interim processes relating to institution in AIA proceedings, April 17, 2025, *available at* https://www.uspto.gov/sites/default/files/documents/boardside_chat_interim_process_for_aia_institution_decisions_.pdf
- EX1104 June 4, 2025 Stipulation
- EX1105 Docket Control Order in *Collision Communications, Inc. v. Nokia Networks and Solutions Oy et al.*, 2-21-cv-00308 (EDTX) (Aug. 5, 2024)
- EX1106 Order Granting Stay in *Maxeon Solar PTE. LTD. V. Hanwha Solutions Corp. et al.*, case no. 2:24-CV-00262-JRG (EDTX)
- EX1107 Order Granting Stay in *Cellspin Soft, Inc. v. Bytedance Ltd., et al.*, case no. 2:23-CV-00496-JRG-RSP (EDTX)
- EX1108 Interim Processes for PTAB Workload Management
- EX1109 Complaint for Patent Infringement in *Collision Communications, Inc., v. Lenovo Group Ltd.*, 2-23-cv-00594 (EDTX) (Dec. 12, 2023)
- EX1110 *Get Involved: This is your formal invitation to consider joining 3GPP, via one of the Partners, available at* <https://www.3gpp.org/get-involved>

- EX1111 FAQs for Interim Processes for PTAB Workload Management, *available at*, https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management?utm_campaign=subscriptioncenter&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=
- EX1112 North Carolina Technology Day 2024 by the Governor of the State of North Carolina: A Proclamation, *available at* <https://governor.nc.gov/governor-proclaims-north-carolina-technology-day-2024/open>
- EX1113 Data & Demographics: Major Employers, *available at* <https://raleigh-wake.org/business-advantages/data-demographics/major-employers>
- EX1114 First U.S. Assembly Plant for China's Lenovo Opens in N.C., *available at* <https://www.npr.org/2013/06/06/189057722/lenovo-holds-grand-opening-for-its-n-c-assembly-plant>
- EX1115 Complaint for Patent Infringement in *Collision Communications, Inc., v. Nokia Corp.*, 2-21-cv-00308 (EDTX) (Aug. 10, 2021)
- EX1116 Complaint for Patent Infringement in *Collision Communications, Inc., v. Eri*, 2-21-cv-00308 (EDTX) (Aug. 10, 2021)
- EX1117 Motorola Mobility (a Lenovo Company), *available at* <https://www.linkedin.com/company/motorola-mobility/?originalSubdomain=in>

I. THERE ARE MULTIPLE COMPELLING REASONS TO INSTITUTE

This case raises multiple compelling discretionary reasons to review the '492 Patent that outweigh Patent Owner's exaggerated complaints.

First, the instant Petition deserves a merits review because the Patent Office materially erred in vetting the application that issued as the '492 Patent during prosecution. *See infra*, §II. The Examiner allowed the claims of the '492 Patent to grant without issuing even a single prior art rejection. Equally troubling, the Examiner's cursory reasons for allowance identify claim elements that were allegedly known in the prior art, but the Examiner's search strategy reveals that the Examiner failed to search for these supposedly-novel features. It is not a surprise, therefore, that the Petition cites at least three prior art references disclosing the supposedly-novel feature. Denying institution would therefore be unwarranted and unjust and would continue to burden the public with a patent that the Patent Office should have never issued in the first instance—and would never have issued absent the Examiner's material error.

Second, a merits review is consistent with the parties' settled expectations. *See infra*, §III. For one, Collision is a patent assertion entity that has not asserted, here or in the district court proceeding, that it produces any products that practice the '492 Patent or that it has marked any products with the '492 Patent. Collision

cannot make these assertions because it does not produce any products at all. What’s more, Collision’s infringement case in district court depends on a contention that the accused products implement several standards—4G and 5G—meaning that Collision considers mere use of these standards a major factor in infringement of the ’492 Patent. This is notable because, unlike Collision, wholly-owned subsidiaries of Lenovo Group, Ltd. (“Lenovo Group”),¹ including Lenovo (Beijing) Ltd, Lenovo (Shanghai) Information, Lenovo (Tianjin) Ltd., Lenovo Future Communications, Lenovo Information Technology, and Beijing Lenovo Software Ltd., are and remain active participants in the development of 4G and 5G, whereas Collision has demonstrated no participation whatsoever. EX1110, 5-48. In acquiring and prosecuting the ’492 Patent under these circumstances, Collision engaged in conduct inconsistent with the advancement of the technological arts and the integrity of the U.S. patent system—further reinforcing why *inter partes* review is an appropriate use of Office resources.

For all these reasons and more provided below, Petitioners respectfully ask that this case be referred to a merits panel.

II. THE EXAMINER MATERIALLY ERRED IN GRANTING THE CHALLENGED CLAIMS

¹ Petitioners Lenovo (United States) Inc. (“Lenovo US”) and Motorola Mobility LLC (“Motorola”) are wholly-owned subsidiaries of Lenovo Group.

The Examiner materially erred in granting the Challenged Claims because (1) the claims received extremely limited scrutiny during original examination, and (2) the Examiner predicated allowance on an erroneous finding that one of the claim limitations is not present in the prior art. *See* EX1002. The Acting Director recently held that discretionary denial was inappropriate when “the Office erred in a manner material to the patentability” of the challenged patent, despite the challenged patents having been in force *for nearly two decades*. *Anthony, Inc. v. ControlTek, LLC*, IPR2025-00636, Paper 9 at 2 (PTAB Jul. 16, 2025) (“Although the challenged patents have been in force for approximately eighteen and seventeen years, Petitioner appears to show a material error by the Office, and it is an appropriate use of Office resources to review the potential error.”). In another case, the Acting Director referred a petition to the merits panel because the Office materially erred by “overlooking the teachings” of references cited in the Petition that were *not before the examiner during prosecution*. *Microsoft Corp. v. Partec Cluster Competence Ctr. GmbH*, IPR2025-00318, Paper 9 at 3 (June 12, 2025) (“*Partec*”). Similarly, here, it is an appropriate use of the Board’s resources to review the Examiner’s material error in the original examination of the ‘492 Patent by considering the strong merits of this Petition.

The Acting Director came to a similar conclusion where a patent owner contended that the “patent examiner allowed the claims because, although the prior art of record taught ‘incremental searching,’ it did not teach incremental searching using two strings in the same field.” *Microsoft Corp. v. XI Discovery, Inc.*, IPR2025-00253, Paper 13 at 2 (June 25, 2025) (“XI”). The referral decision noted that the petitioner provided “persuasive reasoning, supported by evidence” that the “cited prior art,” which was not of record during examination, “teach[es] both incremental searching as well as searching using two strings in the same field.” *Id.*

The material error is more egregious here than in *Anthony*, *Partec*, and *XI*. During examination of the application that issued as the ’492 Patent, the Examiner did not issue a single claim rejection. *See* EX1002. In the reasons for allowance, the Examiner asserted that “no prior art reference” teaches or suggests “selecting one of a plurality of multi-user detectors based on a decision criteria.” EX1002, 88. This finding was clearly an error. As demonstrated in the compelling grounds of the Petition, at least three prior art references—***Wang (EX1005)***, ***Sampath (EX1006)***, ***and Liu (EX1008)***—provide this exact claim limitation. EX1005, 15 (“[t]he multi-user detection module is used to select appropriate multi-user detection algorithm based on the channel type result”), EX1006, [0041]-[0043], EX1008, [0026] (“multi-user decoder 405 or 406 is preferably selected by demodulation scheme selection logic 403”). The Examiner failed to identify, let alone consider, these references,

revealing that it was a material error for the Examiner to conclude that “selecting one of a plurality of multi-user detectors based on a decision criteria” was not present in the prior art.

To make matters worse, the Examiner’s search strategy did not include any search strings that specifically targeted the claim limitations that the Examiner identified as being novel over the prior art. The search strings included broad terms such as “multi-user detection,” “multi-user detector,” “mud,” and “muds,” but none of the search terms targeted *selecting* a multi-user detector based on *decision criteria*. *Id.* This omission is revealing because straightforward and highly relevant search terms like “select,” “selected,” “decision,” and “decide” would have yielded references like Wang, Sampath, and Liu high in the search results.

Indeed, Wang expressly discloses that “[t]he multi-user detection module is used to *select* the appropriate multi-user detection algorithm,” Sampath expressly discloses that “[a] demodulator *selector*...uses a metric to *decide*” between a plurality of demodulators, and Liu explains that “[i]f the interference is above the aforementioned lower threshold, but not above an upper threshold, linear multi-user decoder 406 may be *selected*.” EX1005, 15:12-16; EX1006, [0039], EX1008, [0027]. Simply put, if the Examiner had used key words from the claim limitations the Examiner asserted were novel, the search would have returned relevant portions of references that disclose these limitations. Instead, the Examiner’s chosen search

strategy would have yielded numerous references that refer generally to multi-user detection, without providing targeted results that relate to the key claimed feature. This oversight is especially telling because the Examiner cited the “select[ion] . . . of a . . . multi-user detector[.]” as a claim limitation that was not present in the art.

Further still, and deficiencies in the examination process aside, the Examiner simply did not have access to all that the Petition brings to bear. The thorough expert testimony and corroborating evidence submitted with the Petition provide insights regarding a skilled artisan’s background knowledge of key enabling technologies (EX1003, ¶¶1–17), interpretation of the asserted prior art references (*e.g., id.*, ¶¶82–251), and motivations that would have driven such a person to arrive at the ’492 Patent’s claimed invention (*e.g., id.*, ¶¶46–81). Had the Examiner known what the Petition shows, the Challenged Claims would have never issued.

Simply put, the challenged claims of the ’492 Patent were not novel at all. The fact that the examiner failed to locate and appreciate *any* disclosures of the allegedly novel features was such a clear error that the Office, as the principal agency charged to ensure patent validity, should now correct.

III. OFFICE RESOURCES ARE APPROPRIATE FOR REVIEW OF THE ’492 PATENT IN VIEW OF PETITIONERS’ SETTLED EXPECTATIONS AND PATENT OWNER’S BEHAVIOR

Collision’s claims of settled expectations are easily outweighed by Petitioners’. An expectation that an asserted patent is valid—despite the length of

time the patent has been in force—should not be confused with an expectation that an asserted patent will not be challenged. Collision invited the challenge by filing its complaint against Petitioner. To the extent that the parties’ settled expectations are relevant here, it is those of the Petitioners that have been disrupted and not the other way around. Indeed, Petitioners, by way of their related entities, actively participated in the development of technology associated with the ’492 Patent, which Collision asserts is covered by the relevant standards, while Collision has inexplicably sat on its rights for over a decade while opting not to participate in the development of products or the technology standards.

A. Petitioners’ Settled Expectations Favor a Merits Review of the ’492 Patent

The ’492 Patent was never “commercialized, asserted, marked, licensed, or otherwise applied in a petitioner’s particular technology space.” *Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper 12 at 2-3 (“*Proxense*”). The Acting Director has declined to exercise discretionary denial under such circumstances, even when the patent at issue was in force for *more than a decade*. *Shenzen Touzhu Technology Co. LTD v. Stratasy, Inc.*, IPR2025-00531, Paper 10 at 3 (PTAB July 17, 2025) (“*Shenzen*”). The patent owner in *Shenzhen* manufactured products in the space of the challenged patents but did not mark products with the challenged patents or claim that the products practiced the challenged patents. Here, Collision does not

manufacture *any* products in the space, making discretionary denial even more inappropriate.

In *Proxense*, the Acting Director explained that:

There may be persuasive reasons why the Board should review challenged claims several years after their issuance date. For example, ... a patent may have been in force for years but may not have been commercialized, asserted, marked, licensed, or otherwise applied in a petitioner's particular technology space, if at all. These non-exclusive examples provide considerations that weigh against a patent owner's claim of settled expectations and bears on the Director's discretion.

Proxense, at 2-3.

Collision is a patent assertion entity that *does not produce any products*. Therefore, it is not surprising that Collision has not marked any products with the '492 Patent, and it does not offer or sell any products that practice the '492 Patent. Collision's settled expectations are even weaker than the settled expectations of the patent owner in *Shenzhen*, which did produce unmarked and non-practicing products. Collision's complete lack of commercialization and marking of products should "weigh against [its] claim of settled expectations." *Id.*

The fact that the '492 Patent was first issued to BAE Systems—a defense contractor that does not occupy Petitioners' product technology space—also weighs against discretionary denial. *Proxense*, at 2-3 ("a patent may have been in force for

years but may not have been ... otherwise applied in a petitioner's particular technology space, if at all"); *see* EX1002, 111. There is also no indication that BAE Systems ever asserted the '492 Patent. What's more, BAE Systems developed the subject matter of the '492 Patent for military applications under research funded by the Defense Advanced Research Projects Agency (DARPA). DARPA likewise operates in a different technology space than Petitioners.

Collision acquired the '492 Patent from BAE in 2011 but *waited more than a decade* until 2021 to begin asserting patents, including the '492 Patent, when it first asserted the '492 Patent against Nokia and Ericsson. However, these prior assertions of the '492 Patent were *not in the Petitioners' particular technology space* because the accused products in the Nokia and Ericsson lawsuits were limited to cellular base stations that Petitioners *do not manufacture at all*. EX1115, 27 (“[o]n information and belief, Nokia makes, uses, sells, offers for sale, and/or imports, cellular base stations in the United States and in this District that support at least 3G and 4G and practice at least one claim of each of the Asserted Patents.”); EX1116, 26 (referring to Ericsson's “base stations” as the “Accused Products”); *Proxense*, at 2-3. Because Petitioners do not manufacture or sell base stations, Collision's 2021 assertions of the '492 Patent were not in Petitioners' particular technology space and Petitioners could not have been expected to know about these assertions.

Indeed, Petitioners were not aware of the 2021 lawsuits prior to being sued by Collision two years later (in 2023), Petitioners received no prior notice of alleged infringement of the '492 Patent before being sued, and Petitioners had no knowledge of the existence of the '492 Patent before being sued. Simply put, Petitioners could not have known to challenge the '492 Patent before being sued by Collision, given Collision's (and the prior owners of the '492 Patent's) complete lack of market participation in Petitioners' technology space.

B. Collision Did Not Participate in Developing the Standards That It Broadly Associates With Infringement of the '492 Patent

Collision broadly accuses nearly every one of Petitioners' products using the 4G and 5G standards of infringing the '492 Patent. EX1009, 11 ("Lenovo products that provide 4G, 5G...infringe at least one claim of the Asserted Patents," "Accused Products with 4G capabilities"), 14 ("Accused Products with 5G capabilities include"). Collision's infringement case is heavily dependent on the mere fact that products sold by some of Lenovo Group's wholly-owned subsidiaries use these standards. This dependence is so glaring that Collision's infringement contentions amount to an assertion that the accused products infringe the '492 Patent *because* the products incorporate the standards, notwithstanding Collision's admission that the patent is not essential. Despite heavy reliance on standard use to allege infringement, Collision's pleadings gloss over the fact that wholly-owned entities of

Lenovo Group—the parent entity of both Petitioners—were active participants in the development of 4G and 5G. In fact, these wholly-owned Lenovo Group entities have participated and are active participants in the development of *both* relevant standards. EX1110, 5-48. Collision, on the other hand, has not demonstrated any involvement in these standards, and cannot do so. Petitioners’ settled expectations therefore significantly outweigh Collision’s settled expectations. *Id.*

It is well-known that 4G and 5G are used by billions of devices worldwide, and Petitioners’ products are no exception. Each of these standards is governed by a well-organized body that keeps track of patents related to the standard and governs the intellectual property rights of contributors. The alliance primarily responsible for 4G and 5G is the 3rd Generation Partnership Project (3GPP), of which several of Lenovo Group’s wholly-owned entities are members and contributors. EX1110, 9, 5-48. Collision does not assert that it is a member of either body and has not shown, nor can it, that it contributed to the development of 4G and 5G. *Id.* Because of its lack of participation in the development of these standards, Collision did not contribute any intellectual property to the development of the standards, and did not provide notice of its intellectual property to the standard setting bodies. While these opportunities were available to Collision, it chose not to partake.

It would have been reasonable to expect that a patent holder alleging infringement merely through the implementation of a standard would have worked

with the standard-setting body responsible for that standard, which is 3GPP in this case. It is well known that a major purpose of standards-setting practices is to gather and promote technology in a way that encourages efficient adoption, while respecting the intellectual rights of contributors. The fact that Collision failed to contribute in any manner to the standards development, but now seeks to assert intellectual property rights allegedly covering them, should be neither condoned nor promoted by the U.S. Patent Office.

Reasonably, any practicing member of 3GPP (such as Lenovo Group's wholly-owned entities) would expect that any patent owner having intellectual property relating to 4G and 5G would wish to encourage adoption of that intellectual property and contribute to improvement of the standard. To that end, practicing members would *not* expect patent owners to withhold their intellectual property *for over a decade* only to allege infringement based on standard implementation once billions of devices use the standard. Collision has done exactly this, and it now asks to be exempted from legitimate review of the '492 Patent by asking the Acting Director to exercise her discretion to deny institution.

Tellingly, Collision fails to explain why it sat on its rights for a decade before finally accusing a select group of companies (including Lenovo Group) of infringement. Lenovo Group's wholly-owned subsidiaries merely designed its products to use well-known standards, and Collision did not provide any information

whatsoever as to why it singled out Lenovo Group for an infringement action among the countless industry players whose products implement 4G and 5G. By choosing not to assert a patent against products that notoriously use a standard for an extended period of time, a patent owner establishes a settled expectation that its patent will not be asserted against similar implementations of the same standard. Collision has certainly done so here.

As shown above, Petitioners' settled expectations far outweigh those of Patent Owner and Petitioners respectfully request the Acting Director to refer this petition to the merits panel.

IV. THE *FINTIV* FACTORS WEIGH IN FAVOR OF INSTITUTION—35 U.S.C. § 314(a)

A. Factor 1: No Stay Has Been Requested

Fintiv Factor 1 looks to “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.” This factor is neutral given that no litigation stay has been requested and no evidence clearly establishes how the district court would resolve such a request even if a stay were requested upon institution.

As a starting point, neither party has requested a stay of the litigation. Collision does not dispute this fact. *See* Request, 11-12. Still, attempting to tilt this factor in its favor, Collision starts by asserting that a stay would be unlikely because

at the deadline for the institution decision, “the parties will have already done most of the work in the parallel district court litigation...and the trial would be imminent.” *See* Request, 11-12. Collision cites no evidence that the presiding judge in the Eastern District of Texas would deny a motion to stay in the scenario it describes. *Id.* The only evidence that Collision cites is an overbroad statistic purporting to show that a large majority of *all* motions to stay pending *inter partes* review are rejected, without considering whether these motions were filed in the co-pending litigation *prior to institution in the IPR*. *Id.* However, the critical inquiry under this factor is whether “evidence exists” that a stay will be “granted *if a proceeding is instituted*.” *See Luminati Networks Ltd. v. Teso LT, UAB*, No. 2:19-CV-00395-JRG, 2020 WL 6803255, at *1 (E.D. Tex. Oct. 30, 2020); *Trover Grp., Inc. v. Dedicated Micros USA*, No. 2:13-CV1047-WCB, 2015 WL 1069179, at *6 (E.D. Tex. Mar. 11, 2015) (Bryson, J.); *Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.*, No. 2:21-CV-00378-JRG, 2022 WL 16856099, at *5 (E.D. Tex. Nov. 10, 2022).

Collision cites no case that precludes the possibility of a stay being granted in the Eastern District of Texas *after institution*. On the contrary, the Eastern District does not automatically deny stays after institution, although Collision still paints a misleading picture that the outcome of any stay requested after institution here would almost certainly be denied. Indeed, Collision omits the fact that Judge Gilstrap and Magistrate Judge Payne have granted post-institution motions for stay where the

defendant/petitioner has made a strong stipulation to be bound by IPR estoppel—exactly as Lenovo Group has done here with a stipulation (EX1104) that is far broader than even the IPR estoppel provisions. *See e.g.*, EX1106; EX1107. Magistrate Judge Payne has also explained that stays in patent cases do not unduly prejudice plaintiffs that do not produce a product, like Collision, because a “mere delay in collecting ... damages does not constitute undue prejudice.” EX1107 (citing *Uniloc USA, Inc. v. Acronis, Inc.*, No. 615-cv-1001-RWS-KNM, 2017 WL 2899690, at *2 (E.D. Tex. Feb. 9, 2017)). Collision’s own data likewise shows an **increase** in the number of stays granted in the district over the last three years with at least twenty percent of cases stayed last year alone.² Request, 11-12; EX2003.

Despite its denials, Collision’s brief ultimately wades into impermissible speculation on how “likely” it is for the District Court to grant a stay of the co-

² The Docket Navigator statistics presented in Collision’s EX2003 are also misleading insofar as they do not distinguish between stays requested before and after IPR institution, or even provide any indication that these stays were with respect to a co-pending IPR. Among decisions made in EDTX last year on motions to stay that were brought **after institution**, an even higher 28 percentage of these motions were granted (i.e., 7 of 25 cases). EX1026. To date in 2025, EDTX has granted 37 percent of post-institution motions to stay (i.e., 6 of 16 cases). *Id.*

pending litigation. Request, 11-12. But motions to stay invoke fact- and case-specific considerations, and it would be highly prejudicial to Petitioners for adverse inferences to be drawn from rulings on stay motions being denied in different and unrelated cases. Indeed, for these reasons, the Board has repeatedly refused to “attempt to predict” how a District Court will rule on such stay motions. *See, e.g., Hulu, LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 10-11 (May 19, 2021) (because “neither party has produced evidence that a stay has been requested[,]” “[w]e decline to infer, based on actions taken in a different case with different facts, how the District Court would rule should a stay be requested by the parties in the parallel case here.”) (partially quoting *Fintiv*); *Sand Revolution II, LLC v. Continental Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 7 (June 16, 2020) (informative).

B. Factor 2: The Court’s Trial Date is Speculative

Fintiv Factor 2 looks to “proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision” *as part of a holistic evaluation of fairness and efficiency*, which includes considering which forum will assess the patentability of the challenged claims. *See Fintiv I*, at 5-6; *see also Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 7-17 (PTAB May 13, 2020) (informative) (“*Fintiv II*”) (explaining that, in evaluating the *Fintiv* factors, the Board “takes a holistic view of whether efficiency and integrity of the system are

best served by denying or instituting review”); *Illumina, Inc. v. Natera, Inc.*, IPR2019-01201, Paper 19 at 6 (PTAB Dec. 18, 2019) (“We have considered the positions of the parties and find that, on this record, considerations of efficiency, fairness, and the merits of the grounds in the Petition do not weigh in favor of denying the Petition.”). Factor 2 alone does not favor discretionary denial, particularly where, as here, the Petition demonstrates strong merits of unpatentability or Petitioner’s settled expectations heavily outweigh Patent Owner’s settled expectations. *See, e.g., Shenzhen*, at 3 (“Petitioner...presents evidence that the challenged patents have never been ‘commercialized, asserted, marked, licensed, or otherwise applied’ in Petitioner’s ‘particular technology space.’”); *Anthony*, at 2 (“Although the challenged patents have been in force for approximately eighteen and seventeen years, Petitioner appears to show a material error by the Office, and it is an appropriate use of Office resources to review the potential error.”).

C. Factor 3: By the Time of the Decision on Institution, Significant Investment Will Remain in the District Court Proceeding

Much work will remain in the parallel proceeding at the institution decision deadline. On the institution decision deadline, the parties and the District Court will still need to undertake the arduous process of preparing for trial. EX1005, 1-2. The final weeks leading up to trial are the most work-intensive in the litigation process. During this time, parties must finalize their case-in-chief, which must be disclosed

to the court before trial begins. During this time, each party prepares its own witnesses for direct and cross examination, prepares to cross-examine witnesses of the opposing party, and prepares theories to present to the jury. Trial preparation is also one of the largest resource expenditures for the Court. The judge and law clerks must work with counsel to arrange trial logistics, and the law clerks must brief issues for the Judge.

The largest remaining investment is the trial itself. Most patent trials have a duration of at least one week, and many trials last for two weeks. This means that attorneys, staff, and court employees will incur hundreds of work hours during the trial alone. Dozens of lawyers, staff, and witnesses will need to travel to Marshall, Texas, for the duration of trial, incurring great expense. Moreover, citizens of the Eastern District of Texas will donate their time to serve as jurors, in some cases sacrificing pay or vacation time to fulfill their civic duty. Because of the significant expense of trial preparation and trial, Factor 3 counsels against discretionary denial, or at worst is neutral.

D. Factor 4: Virtually No Overlap Exists Between This IPR and the District Court Proceeding

Fintiv factor 4—which considers overlap between issues raised in the Petition and in the parallel proceeding—strongly favors institution. The grounds raised in this petition address *15 claims* of the '492 Patent, of which *a maximum of 5 claims*

can be asserted in the co-pending litigation. EX2007, 2 (“shall identify no more than five asserted claims per patent”). This means that at least at least **10 claims**—representing a full *two-thirds* of the claims challenged in the Petition—will not be adjudicated in the co-pending litigation. Furthermore, Lenovo Group filed an exceedingly broad stipulation—endorsed by the Acting Director—which is even more sweeping than a *Sotera* stipulation and further eliminates any potential overlap between the proceedings relating to the minority subset of claims that Collision may assert at trial. *See* EX1104. What’s more, every ground in the Petition relies on at least one reference that has never been cited in Lenovo Group’s invalidity contentions.

First, Collision acknowledges that little overlap exists between issues raised in the Petition and the parallel District Court litigation. Request, 16 (conceding that only claims 1, 2, 5, 10, and 16 are asserted in District Court). Collision attempts to dismiss this substantial area of non-overlap by asserting that “the great majority of ***claim limitations*** at issue in the Petition’s Ground 1 are also at issue in the parallel litigation.” Request, 17. This argument has no merit.

Collision offered no evidence to support its erroneous assertion that the “great majority” of “claim limitations” challenged in the Petition are also asserted in the District Court litigation. Collision cannot do so, because the assertion is plainly false. The Petition identifies a total of **32 claim elements** in the Challenged Claims.

Pet., ii-x. Of these elements, only **15 claim elements** (i.e., [1pre]-[1d], [2], [5], [10pre]-[10f], [16]) are also asserted in District Court. *Id.* Under this measure, *not even a bare majority*—much less a “great majority”—of the challenged claim elements are at issue in District Court. Collision offered no other definition of “claim element” which supports its false and misleading “great majority” claim.

Collision’s brief also glosses over the fact that the Petition challenges an **independent claim** (i.e., Claim 17) that is not asserted in the parallel District Court litigation. Collision could have asserted claim 17 in the District Court proceeding but elected not to do so. This means that, even if the District Court reaches a final resolution of validity or invalidity with respect to each of the asserted claims, the District Court will not rule on the invalidity of claim 17. Every claim provides patent owners with an avenue to allege infringement. This means that if every one of the asserted claims is ruled invalid by the District Court, Collision would still be free to assert claim 17, and others, in another proceeding.

Second, to eliminate any possible perception of overlap between the PTAB and District Court, Lenovo Group filed a stipulation (EX1104) providing that, if the PTAB institutes review, Lenovo Group will not pursue in District Court litigation:

- the specific grounds asserted in IPR2025-00927, or any other ground that could have been reasonably raised in IPR2025-00927 (i.e., any ground that could have been raised under §§ 102 or 103 on the basis of

prior art patents or printed publications) (*see Sotera Wireless, Inc. v. Masimo Corporation*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020)); and

- combinations of the prior art references asserted in whichever proceeding(s) are instituted *with unpublished system prior art or any other type of prior art* (*see Motorola Solutions, Inc. v. Stellar, LLC*, IPR2024-01205, IPR2024-01206, IPR2024-01207 & IPR2024-01208, Paper 19 (PTAB Mar. 28, 2025)).

Simply put, this stipulation, which some refer to as “*Sotera-plus*,” would bar Lenovo Group from using any of the references in the grounds of the Petition in the invalidity portion of the district court case, alone or in combination with any other reference (including system art). Petitioner’s stipulation is modeled after a stipulation that the Acting Director endorsed in *Tesla*. *See Tesla, Inc. v. Intellectual Ventures II LLC* IPR2025-00217, Paper 9 at 2-3 (Jun. 13, 2025).

Collision’s attempt to dismiss Lenovo Group’s stipulation as a mere “*Sotera*” stipulation that “is no longer dispositive” in light of the PTO’s March 24, 2025 Guidance Memo therefore misrepresents the scope of Lenovo Group’s stipulation. Request, 18-19. Lenovo Group’s stipulation here is *far more sweeping* than a traditional *Sotera* stipulation and goes further to allay the concerns raised in the Director’s *Motorola* decision (*see id.*) by additionally precluding Lenovo Group’s

reliance (upon institution) on combinations of art asserted in the proceeding with unpublished system art, or any other type of prior art for that matter.

To be clear, Lenovo Group’s stipulation here is likewise more robust than the *Sotera* stipulation addressed in *Motorola*. Lenovo Group’s stipulation guarantees that, if instituted, none of the prior art asserted in the Petition will be used in the District Court proceeding—even in combination with unpublished system art. For example, the instant Petition relies on McElwain (EX1004), Mills (EX1007), Wang (EX1005), Sampath (EX1006), and Liu (EX1008), as prior art references to address claims 11-3, 5-13, and 15-17 of the ’492 Patent. If the Petition is instituted, Lenovo Group has agreed through its stipulation to forego reliance on all five of these references in the EDTX litigation altogether, whether on their own, in combination with other patents or printed publications that could have been reasonably raised in IPR, or even in combination with unpublished system art that could not have been raised in IPR in the first instance. Lenovo Group’s stipulation thus addresses the specific concern expressed in *Motorola* that “Petitioner’s invalidity arguments in the district court ... include combinations of the prior art asserted in these proceedings with unpublished system art.” *Motorola*, 4.

Third, Collision’s brief glosses over a significant fact—namely, that Lenovo Group has ***never included Wang (EX1005), Sampath (EX1006), and Liu (EX1008) in its invalidity contentions*** in District Court. See EX2004. Yet, every ground in

the Petition relies on at least one of Wang, Sampath, and Liu, meaning that every one of the Challenged Claims is challenged using at least one reference that was never included in the invalidity contentions. Pet., 1-2. There is accordingly no possibility of Lenovo Group raising the same set of prior art or the same grounds in District Court as those raised in the IPR Petition, whether the IPR Petition is instituted or not. Accordingly, even from the earliest stages of the litigation and the IPRs, Lenovo Group has pursued alternative and non-overlapping invalidity grounds in the District Court litigation.

In sum, there will be virtually no overlap between this proceeding and the parallel District Court litigation if IPR is instituted. The District Court will not even address at least 10 of the 15 claims challenged in the Petition, the Petition is based on prior art combinations that have never been raised and could not be raised in District Court (e.g., combinations based on any one or combination of Wang, Sampath, or Liu), and Lenovo Group's stipulation is even more expansive than *Sotera*, thus ensuring that the Office's goals of "efficiency and integrity" will be achieved by "not duplicating efforts" and "resolving materially different patentability issues." *Apple, Inc. v. SEVEN Networks, LLC*, IPR2020-00156, Paper 10 at 19 (June 15, 2020); *Sand Revolution II, LLC v. Continental Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 12 (June 16, 2020); *Google LLC v.*

Flypsi, Inc., IPR2023-00360, Paper 9 at 36-39 (August 2, 2023). Therefore, *Fintiv* factor 4 strongly favors institution.

E. Factor 5: The Same Parties are in the Co-Pending Litigation

Fintiv Factor 5—Contrary to Collision’s assertion, the parties in the litigation are not the same as here. Specifically, the defendant in the co-pending litigation is Lenovo Group, while Petitioners are Lenovo US and Motorola. Any relationship between the parties, however, should not favor denial, particular where, as here, the Petition demonstrates strong merits of unpatentability.

F. Factor 6: Other Factors, Like Settled Expectations, Do Not Weigh in Favor of Discretionary Denial

As explained below, Collision’s arguments regarding “other circumstances that impact the Board’s exercise of discretion” lack merit and do not counsel in favor of discretionary denial.

First, Collision cannot seriously urge discretionary denial based on merits considerations when Collision either could not or would not identify a single substantive deficiency in the Petition at all. Collision asserts that “[t]he Petition does not argue, much less establish, that compelling merits exist here.” Request, 20. Tellingly, however, Collision was unable to identify, let alone allege, even a single deficiency in the Petition’s analysis of the prior art grounds or their relevance to the ’492 Patent claims. Collision cannot do so because the Petition advances multiple

obviousness grounds that each provide a clear basis for unpatentability of the '492 Patent claims. Collision offers a speculative promise to show that the Petition “fails to establish compelling merits” and “fails to establish even the required likelihood of success,” but this mere promise does not, and should not, support discretionary denial. Request, 20.

Second, the grounds advanced in this proceeding present strong merits because the cited prior art references address each challenged claim limitation with clear and specific disclosures, including the allegedly novel features. For example, the grounds advanced in this proceeding demonstrate satisfaction of the features erroneously deemed novel in original examination based on the teachings of Wang, Sampath, and Liu. *See* Pet., 8-83. Indeed, the Examiner allowed the original claims without issuing any prior art rejections. EX1002, 87-89. In the reasons for allowance, the Examiner indicated that “[n]o prior art reference has been found to teach or suggest selecting one of a plurality of multi-user detectors based on a decision criteria.” EX1002, 88. Thus, the record reveals that the Examiner appeared to believe the following underlined limitations of claim 1 were not disclosed by any prior art reference at the time of the Notice of Allowance, and the Examiner allowed the claims based on this erroneous belief. *Id.*

1. A hybrid Multi-User Detector System for processing received signals, comprising:

a parameter estimator coupled to said received signals providing received data information;

a multi-user detector decision unit coupled to said parameter estimator and said received signals;

at least two multi-user detectors coupled to said parameter estimator and said multi-user detector decision unit, said multi-user detector decision unit using decision criteria to determine a selected multi-user detector, wherein said selected multi-user detector outputs a plurality of information streams, one stream corresponding to each of said received signals; and

a bank of decoders coupled to said plurality of information streams, wherein said decoders output a plurality of improved information streams.

Contrary to the Reasons for Allowance, these features were known in the art before the Critical Date of the '492 Patent, as explained in the Petition with reference to Wang, Sampath, and Liu. *See* Pet., 8-83.

Third, Collision argues that discretionary denial is warranted because “[t]he Petition fails to address Factor 6 or to even attempt to identify any additional circumstances that would impact the exercise of discretion” and “the Petition does not address **any** *Fintiv* factors.” Request, 20. This argument is without merit because, under the new bifurcated briefing procedure outlined in Director Stewart’s Memorandum of March 26, 2025, Petitioners were not required to address the *Fintiv* factors or any other discretionary denial issue in the Petition. EX1108, 1 (“decisions on whether to institute an IPR or PGR will be bifurcated between (i) *discretionary considerations* and (ii) merits and other *non-discretionary statutory considerations*”). The *Fintiv* factors are a discretionary consideration that is not

appropriate for the Petition under the bifurcated procedure, and Collision's attempt to frame the lack of *Fintiv* analysis in the Petition as weighing in favor of discretionary denial is improper.

G. Holistic Evaluation of All Factors

As discussed above, each *Fintiv* factor is either neutral or favors referral, and thus, all *Fintiv* factors weigh against discretionary denial. Decisions on discretion recently issued in *Shenzen* and *Anthony* further confirm that it would be inappropriate to exercise discretion based on a holistic weighing of the *Fintiv* factors in this case, for the reasons stated above. *Supra* Sections II, III.A.

V. ADDITIONAL CONSIDERATIONS IN THE STEWART MEMORANDUM ALSO COUNSEL AGAINST DISCRETIONARY DENIAL

The Stewart Memorandum dated March 26, 2025, titled "Interim Process for PTAB Workload Management," identified additional considerations that may be evaluated when addressing discretionary issues. *See* EX1108. A proper weighing of these considerations confirms that discretionary denial is not warranted, and that conclusion is only reinforced by considerations recited in the Stewart Memorandum that Collision omitted from its analysis.

A. This Petition Is the First To Meaningfully Adjudicate the Claims Under A Prior Means-Plus-Function Limitation

Collision filed actions against Lenovo Group and Samsung on the same day. Although Samsung filed an IPR Petition against the '492 Patent that was eventually denied institution, a major reason for the denial was Samsung's failure to address a means-plus-function limitation to the Challenged Claims under a prior claim construction order. *Samsung Electronics America, Inc. v. Collision Communications, Inc.*, IPR2024-01247, Paper 10 at 6 (PTAB Dec. 31, 2024) ("at the time the Petition was filed neither lead counsel nor backup counsel...were aware of the prior claim construction order"). This Petition addresses the means-plus-function limitation and describes how each ground meets the Challenged Claims under this interpretation. Pet., 6-7. Thus, for at least this reason, the Board's time and resources are well-suited to consider this Petition.

B. Thorough and Focused Expert Testimony Properly Supports the Petition

The Petition is supported by the expert declaration of Dr. Paul Min. *See* EX1003. Dr. Min's declaration includes testimony, which is not only guided by years of education and experience but is further corroborated by ample documentary evidence including dozens of additional exhibits that confirm and amplify the positions and unpatentability arguments advanced in the Petition. Indeed, Dr. Min's robust testimony is confirmed and corroborated by more than a dozen third-party references. *See generally* EX1003, ¶18; EX1004-EX1025.

As the PTAB further clarified in its “FAQs for Interim Processes for PTAB Workload Management,” “[i]t is most helpful if an expert is providing focused testimony, for example to provide helpful context or to explain terms of art.” EX1111, 8. Consistent with this guidance, Dr. Min’s expert declaration provides such context and explanations. For example, Dr. Min provides corroborated testimony describing the relative complexity of various MUD algorithms by the Critical Date of the ’492 Patent (EX1003, ¶53 (citing EX1013), ¶184 (citing EX1019)); corroborated testimony regarding the fact that parameter estimators were known in the art before the Critical Date of the ’492 Patent (EX1003, ¶84 (citing EX1011, EX1012)); corroborated testimony regarding equations for calculating eigenvalues and eigenvectors (EX1003, ¶95 (citing EX1022, EX1023)); corroborated testimony regarding hardware of MUD detectors as of the Critical Date of the ’492 Patent (EX1003, ¶111 (citing EX1014, EX1015)); corroborated testimony regarding iterative MUD systems (EX1003, ¶157 (citing EX1016, EX1017)); corroborated testimony regarding SINR equations (EX1003, ¶173 (citing EX1021)); and corroborated testimony regarding techniques for using expected SINR to evaluate performance of a MUD (EX1003, ¶180 (citing EX1009, EX1010)). Additionally, Dr. Min’s testimony provides detailed technical explanations supporting the Petition’s proposed obviousness combinations and motivations to combine. EX1003, ¶¶46-81.

In short, the Petition advances strong and meritorious grounds that are supported by Dr. Min's focused and corroborated expert testimony. This factor favors institution.

C. Compelling Economic Interests Favor Institution

Petitioners are responsible for substantial and sustained investments and economic activity in the United States. In proclaiming "North Carolina Technology Day," the Governor of North Carolina commended Lenovo US for making its home in the state "for decades" and "leading the way with corporate and community investments across the state." EX1112, 1. Indeed, Lenovo US employs over 5,000 employees in the United States, including at its North Carolina headquarters. EX1113, 1; EX1014, 1-3. Motorola is headquartered in Chicago, Illinois, and likewise employs thousands of people in the United States. EX1117, 1-2. Indeed, Motorola traces its roots to 1928, when it was founded in Chicago as a car radio manufacturer. Petitioners' large and ongoing investment in the United States presents a compelling economic interest to further continue this meritorious challenge to the patentability of the '492 Patent.

VI. CONCLUSION

For at least the reasons discussed above, Petitioner respectfully requests that the Acting Director exercise her discretion and refer the petition to the merits panel and that the merits panel grant institution of the Petition.

Respectfully submitted,

Dated August 25, 2025

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24, the undersigned hereby certifies that the word count for the foregoing Petitioner's Opposition to Patent Owner's Discretionary Denial Brief totals 6,902 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on August 25, 2025, a complete and entire copy of this this Petitioner's Opposition to Patent Owner's Discretionary Denial Brief and supporting exhibits were provided via email to the Patent Owner via electronic mail on Patent Owner's lead and backup counsel listed below at the following email address:

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