

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

T-MOBILE USA, INC., AT&T MOBILITY LLC, CELLCO PARTNERSHIP
D/B/A VERIZON WIRELESS, ERICSSON INC. AND
NOKIA OF AMERICA CORPORATION

Petitioners,

v.

SMART RF INC.

Patent Owner.

U.S. Patent No. 9,641,204

Issue Date: May 2, 2017

Title: DIGITAL MULTI-BAND PREDISTORTION LINEARIZER
WITH NON-LINEAR SUBSAMPLING ALGORITHM IN THE FEEDBACK
LOOP

Inter Partes Review No.: IPR2025-00692

**PETITIONERS' OPPOSITION TO PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL**

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Petitioners' Exhibit List

Ex. No.	Brief Description
1001	U.S. Patent No. 9,641,204 (“the ’204 Patent”)
1002	Prosecution History for U.S. Patent No. 9,641,204
1003	Expert Declaration of James Proctor under 37 C.F.R. § 1.68.
1004	<i>Curriculum Vitae</i> of James Proctor
1005	World Intellectual Property Organization International Publication No. WO 2012/129768 to James Peroulas, Filing Date of March 28, 2011 and Publication Date October 4, 2012 (“Peroulas”).
1006	Alessandro. Cidronali, “A New Approach for Concurrent Dual-Band IF Digital PreDistortion: System Design and Analysis,” 2008 Workshop on Integrated Nonlinear Microwave and Millimetre-Wave Circuits (January 2009), (“Cidronali”)
1007	Declaration of Julie Ann Munford
1008	Dennis Morgan, “A Generalized Memory Polynomial Model for Digital Predistortion of RF Power Amplifiers,” IEEE Transactions on Signal Processing, vol. 54, no. 10, (October 2006), (“Morgan”)
1009	U.S. Patent No. 6,999,523 (“Posti”)
1010	Nazim Ceylan, “Linearization of Power Amplifiers by Means of Digital Predistortion” (2005) (“Ceylan”)
1011	Excerpts from Zhurbenko <i>et al.</i> , Advanced Microwave Circuits and Systems (2010), (“Zhurbenko”)
1012	Henna Paaso, “Comparison of Direct Learning and Indirect Learning Predistortion Architectures,” 2008 IEEE International Symposium on Wireless Communication Systems (2008), (“Paaso”)
1013	Dayong Zhou, “Novel Adaptive Nonlinear Predistorters Based on the Direct Learning Algorithm,” <i>IEEE Transactions on Signal Processing</i> , vol. 55, no. 1, (Jan. 2007), (“Zhou”)
1014	Youngcheol Park, “Adaptive Predistortion Linearization of RF Power Amplifiers Using Lookup Tables Generated from Subsampled Data,” 2002 IEEE Radio and Wireless Conference (2002), (“Park”)

Ex. No.	Brief Description
1015	<i>Reserved</i>
1016	Excerpts from Qizheng Gu, RF System Design of Transceivers for Wireless Communications (Springer 2005), (“Gu”)
1017	Docket Control Order, <i>Smart RF Inc. v. AT&T Mobility LLC et al.</i> , Case No. 2:24-cv-00195-JRG, Dkt. No. 41 (E.D. Tex. June 21, 2024)
1018	Federal Court Management Statistics - Profiles, June 30, 2024, available at https://www.uscourts.gov/sites/default/files/2024-11/fcms_na_distprofile0630_2024.pdf
1019	U.S. Patent No. 7,110,732 (“Mostafa”)
1020	Rim Barrak, “Optimized Multistandard RF Subsampling Receiver Architecture,” IEEE Transactions on Wireless Communications (2009), (“Barrak”)
1021	Sungho Choi, “Design of Digital Predistorters for Multi-Band Signals,” Proceedings of the Second APSIPA Annual Summit and Conference (2010), (“Choi”)
1022	Letter to Smart RF re: <i>Sotera</i> Stipulation
1023	Excerpts from IEEE Std 100-2000, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition (2000)
1024	R. Venkataramani and Y. Bresler, "Perfect reconstruction formulas and bounds on aliasing error in sub-Nyquist nonuniform sampling of multiband signals," in IEEE Transactions on Information Theory, vol. 46, no. 6, pp. 2173-2183, (Sept. 2000)
1025	R. Venkataramani, “Sub -Nyquist multicaset and MIMO sampling: Perfect reconstruction, performance analysis, and necessary density conditions,” University of Illinois at Urbana-Champaign ProQuest Dissertations & Theses (2001).
1026	Allen Katz, “Linearization: Reducing Distortion in Power Amplifiers,” IEEE Microwave Magazine (2001), (“Katz”)
1027	Lei Ding, Raviv Raich, <i>et al.</i> , “A Hammerstein Predistortion Linearization Design Based on the Indirect Learning Architecture,” 2002 IEEE International Conference on Acoustics, Speech, and Signal Processing (2002), (“Raich”)

Ex. No.	Brief Description
1028	Lei Ding, “Digital Predistortion of Power Amplifiers for Wireless Applications”, A Thesis Presented to the Academic Faculty, School of Electrical and Computer Engineering, Georgia Institute of Technology (2004), (“Ding”)
1029	Excerpts from Ronald Crochiere, Multirate Digital Signal Processing (Prentice Hall 1983), (“Crochiere”)
1030	Excerpts from Leon Couch, Digital and Analog Communication Systems (Macmillan Publishing 1987), (“Couch”)
1031	Excerpts from John Proakis, Communication Systems Engineering (Prentice Hall 2002), (“Proakis”)
1032	<i>Reserved</i>
1033	Confirmatory Assignment for ’204 Patent, recorded May 6, 2024
1034	Complaint, <i>Smart RF Inc. v. AT&T Mobility LLC et al.</i> , No. 2:24-cv-00195-JRG, Dkt. 1 (E.D. Tex. March 19, 2024)
1035	Complaint, <i>Smart RF Inc. v. Verizon Wireless et al.</i> , No. 2:24-cv-00196-JRG-RSP, Dkt.1 (E.D. Tex. March 19, 2024)
1036	Complaint, <i>Smart RF Inc. v. T-Mobile US, Inc. et al.</i> , No. 2:24-cv-00197-JRG-RSP, Dkt.1 (E.D. Tex. March 19, 2024)
1037	Notice of Hearing, <i>Smart RF Inc. v. AT&T Mobility LLC et al.</i> , No. 2:24-cv-00195-JRG (E.D. Tex. May 16, 2025)
1038	Petition, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-727, Paper 1 (PTAB March 18, 2025)
1039	Petition, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-692, Paper 6 (PTAB March 18, 2025)
1040	Petition, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-691, Paper 6 (PTAB March 18, 2025)
1041	Notice of Filing Date Accorded, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-727, Paper 9 (PTAB April 16, 2025)
1042	Notice of Filing Date Accorded, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-692, Paper 9 (PTAB April 16, 2025)
1043	Notice of Filing Date Accorded, <i>T-Mobile USA, Inc. v. Smart RF Inc.</i> , IPR2025-691, Paper 9 (PTAB April 16, 2025)

Ex. No.	Brief Description
1044	Letter from Jacob K. Baron to Patrick J. Conroy, dated March 18, 2025
1045	Federal Court Management Statistics - Profiles, March 31, 2025, <i>available at</i> https://www.uscourts.gov/data-news/reports/statistical-reports/federal-court-management-statistics/federal-court-management-statistics-march-2025
1046	Excerpts from Report of James Proctor Regarding Invalidity of the Patents-in-Suit, dated July 8, 2025, No. 2:24-cv-00195-JRG
1047	Docket Control Order, <i>Sionyx, LLC v. Samsung Electronics Co., Ltd.</i> , Case No. 2:24-cv-00408-JRG (E.D. Tex. December 27, 2024)
1048	Cover Pleading for Plaintiff Smart RF Inc.’s Disclosure of Asserted Claims and Infringement Contentions, dated May 15, 2024, No. 2:24-cv-00195-JRG
1049	<i>Reserved</i>
1050	Excerpt from Zenious et al., BIODESIGN; THE PROCESS OF INNOVATING MEDICAL TECHNOLOGIES (EX-2010 in <i>iRhythm, Inc. v. Welch Allyn, Inc.</i> , IPR2025-00363.
1051	Order Granting Nokia’s Motion to Intervene as a Defendant, <i>Smart RF Inc. v. AT&T Mobility LLC et al.</i> , Case No. 2:24-cv-00195-JRG, Dkt. No. 57 (E.D. Tex. Aug. 8, 2024)
1052	Order Granting Ericsson’s Motion to Intervene as a Defendant, <i>Smart RF Inc. v. AT&T Mobility LLC et al.</i> , Case No. 2:24-cv-00195-JRG, Dkt. No. 56 (E.D. Tex. Aug. 8, 2024)

I. INTRODUCTION

Petitioners T-Mobile USA, Inc. (“T-Mobile”), AT&T Mobility LLC (“AT&T”), Cellco Partnership d/b/a Verizon Wireless (“Verizon”), Ericsson Inc. (“Ericsson”) and Nokia of America Corporation (“Nokia”) (collectively, “Petitioners”) hereby oppose Patent Owner Smart RF Inc.’s (“PO”) request for discretionary denial of Petitioners’ Petition for *Inter Partes* Review of U.S. Patent No. 9,641,204 (“Petition” (Paper 6)). PO bases its request on the *Fintiv* factors and other considerations outlined in the Director’s March 26, 2025 Memorandum titled “Interim Process for PTAB Workload Management” (“Workload Memo”), but PO mischaracterizes several material facts while ignoring others in seeking discretionary relief.

Petitioners acknowledge that a single trial date has been currently scheduled in the three related district court litigations,¹ and that single, tentative trial date would occur before an expected final written decision in this proceeding. (Patent Owner’s Request For Discretionary Denial Of Institution, Paper 10 (“Request”) at 7.) PTAB

¹ *Smart RF Inc. v. AT&T Mobility LLC*, No. 2:24-cv-00195-JRG-RSP (E.D. Tex.); *Smart RF Inc. v. Verizon Wireless et al.*, No. 2:24-cv-00196-JRG-RSP (E.D. Tex.); and *Smart RF Inc. v. T-Mobile US, Inc. et al.*, No. 2:24-cv-00197-JRG-RSP (E.D. Tex.) (“Related Litigations”)

case law supports institution of this Petition notwithstanding the tentative trial schedule in the Related Litigations. PO's recent infringement expert report in the Related Litigations indicates that numerous asserted claims will no longer be pursued. This fact, together with Petitioners' *Sotera* stipulation, render the PTAB the most efficient forum for adjudicating invalidity issues.

PO's Request demonstrates the strength of Petitioners' unpatentability challenges because it resorts to criticizing the form of the Petition's grounds. Specifically, PO notes the type of grounds as reasons for denial, which is irrelevant to the Petition's merits.

A full analysis of the *Fintiv* factors and other considerations, particularly in view of Petitioners' *Sotera* stipulation and the strength of the grounds set forth in the Petition, dictates that discretionary denial is not warranted and that PO's Request should be denied in the interest of efficiency, fairness and patent quality.

Accordingly, Petitioners hereby respectfully request that the Director deny PO's Request and grant the Petition to institute *inter partes* review of the '204 Patent.

II. BACKGROUND

On March 19, 2024, PO brought the Related Litigations in the Eastern District of Texas against T-Mobile, AT&T and Verizon, alleging infringement of five patents: U.S. Patent Nos. 7,035,345 (the "'345 Patent"), 8,767,857 (the "'857 Patent), 9,641,204 (the "'204 Patent"), 8,078,561 (the "'561 Patent) and the '296

Patent (collectively, “Asserted Patents”). (Ex. 1034 at 1; Ex. 1035 at 1; Ex. 1036 at 1.) On August 8, 2024, Ericsson and Nokia (together with T-Mobile, AT&T and Verizon, “Defendants”) intervened as designers and manufacturers of some of the accused products. (Exs. 1051, 1052).

In the Related Litigations, Defendants served their Invalidity Contentions and then supplemented those contentions on July 31, 2024 and March 31, 2025, respectively. (Ex. 1017 at 6.) The Court held the Markman Hearing on June 12, 2025. (Ex. 1037.) Defendants served their Invalidity Expert Report on July 8, 2024. (Ex. 1017 at 4.) According to the Docket Control Order, the trials in the Related Litigations are all tentatively scheduled for the same date—November 17, 2025. (*Id.* at 2.)

Meanwhile, Petitioners proceeded to file IPR petitions against the ’345, ’204, ’561 and ’296 Patents within the year prescribed by statute. 35 U.S.C. § 315(b). Petitioners filed the Petition for the ’561 Patent on February 14, 2025, and filed the petitions for the ’345, ’204 and ’296 Patents on March 18, 2025. (Petition; Exs. 1038-1040.) PTAB entered a Notice of Filing Date Accorded for the Petition for the ’561 Patent on April 14, 2025 (two months after the Petition was filed), thereby setting the deadlines for an institution decision and a final written decision in this proceeding on October 14, 2025 and October 14, 2026, respectively. (Paper 9 at 1.) PTAB entered a Notice of Filing Date for each of the petitions corresponding to the

'345, '204 and '296 Patents on April 16, 2025 (one month after the Petitions were filed), thereby setting the deadlines for institution decisions and final written decisions in those proceeding on October 16, 2025 and October 16, 2026, respectively. (Ex. 1041 at 1; Ex. 1042 at 1; Ex. 1043 at 1.)

The Petition for the '204 Patent asserts two grounds of invalidity. Petition at 20. The two grounds are obviousness grounds under 35 U.S.C. § 103 and rely on either Peroulas or Posti as the primary reference alone, or in view of Cidronali as the secondary reference in each. *Id.*

III. STIPULATION

Petitioners entered a *Sotera* stipulation by a letter sent to PO on March 18, 2025 (“the Stipulation Letter,” Ex. 1044). Petitioners’ stipulation reads:

if the Patent Trial and Appeal Board (“PTAB”) authorizes Defendants to enter this stipulation into evidence and institutes an IPR in response to Defendants’ petitions against Smart RF Inc.’s U.S. Patent Nos. 7,035,345,8,078,561, 9,641,204 or 10,958,296 (the “Petitions”), then Defendants will not pursue the grounds raised, or grounds that could have reasonably been raised, in the instituted Petition before the PTAB in the Litigations. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Pap. 12 at 13-20 (PTAB Dec. 1, 2020) (precedential) (“*Sotera*”). Ex. 1044.

IV. ANALYSIS

Discretionary denial under the *Fintiv* factors and other considerations is not

warranted. *Fintiv* identifies six factors for the PTAB to balance in determining whether to exercise discretionary denial when there is a parallel district court proceeding: likelihood of a stay; the timing of trial; investment in the parallel proceeding; overlap of issues; overlap of parties; and other factors. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5-6 (Mar. 20, 2020) (precedential). Of the *Fintiv* factors, three are neutral and three weigh against discretionary denial in this proceeding. In particular, Factors 4 (overlap of issues) and 6 (other factors) bear substantial weight in Petitioners' favor in view of Petitioners' *Sotera* stipulation and the merits of the Petition.

As of March 26, 2025, the Director includes other considerations in the holistic assessment alongside the *Fintiv* factors: whether the PTAB or another forum has already adjudicated the invalidity of the challenged claims; the strength of the unpatentability challenge; the extent of the petition's reliance on expert testimony; settled expectations of the parties; and any other considerations bearing on the Director's discretion. Workload Memo at 2-3. All of these other considerations too weigh in Petitioners' favor.

Accordingly, balancing all of the *Fintiv* factors and other considerations, the Director should deny PO's Request for discretionary denial.

A. Factor 1 – Likelihood of a Stay

No party has requested a stay, and the District Court has not indicated whether

a stay would be granted in the Related Litigations. Therefore, this factor is neutral. *See, e.g., Hulu, LLC v. SITO Mobile, Ltd.*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021).

PO devotes nearly five full pages of the Request to speculate as to how a hypothetical motion to stay would be resolved. The Director should decline PO's invitation to do the same because the Board has repeatedly and consistently explained that it will not engage in such speculation before a motion to stay is filed. *See Google, LLC v. Parus Holdings Inc.*, IPR2020-00847, Paper 9 at 12 (PTAB Oct. 21, 2020); *Fintiv*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (same); *SAP America, Inc. v. Cyandia, Inc.*, IPR2024-01496, Paper 13 at 5 (PTAB April 7, 2025) (same).

B. Factor 2 – Timing of Trials

Petitioners acknowledge that trials are currently scheduled in the Related Litigations before a final written decision will issue in this proceeding, but the scheduled dates are unlikely to remain in place. In particular, all three trials are scheduled for the same date and thus, even if one case proceeds to trial on the scheduled date, the other two trials must be rescheduled because they will not proceed in parallel. These considerations dictate that this factor is neutral or, at most, only slightly favors discretionary denial. Recent PTAB cases also support institution of this Petition notwithstanding the trial schedule in the Related Litigations. *See,*

e.g., Google LLC v. Mullen Industries LLC, IPR2025-00019, Paper 14 at 13 (PTAB May 12, 2025) (“Although the earlier trial date weighs in favor of discretionary denial, the remaining factors are either neutral or weight against discretionary denial. Accordingly, we decline to exercise discretion to deny institution.”).

Here, the eleven-month gap between the currently scheduled trials on November 17, 2025 (Ex. 1017 at 2) and the statutory deadline for a final written decision on October 16, 2026 is highly likely to shrink, and PO is wrong to suggest otherwise. For example, PO notes that the Docket Control Order designates the trial date as a “deadline that cannot be changed without an acceptable showing of good cause.” (Request at 19 (quoting Ex. 1017 at 6).) PO infers from this standard language, which is included in Judge Gilstrap’s Model Docket Control For Patent Cases, that a trial deadline is essentially set in stone, but this is not the case. The District Court routinely finds good cause to reschedule trials, sometimes even more than once. *See, e.g., Multimedia Techs. PTE Ltd. v. LG Elecs. Inc., et al.*, 2:22-cv-00494-JRG-RSP, Dkt. 273 (E.D. Tex. Mar. 18, 2025) (noting that “[t]his case has been set for trial five times: November 18, 2024, January 27, 2025, February 7, 2025, March 3, 2025, and March 17, 2025.”).

Rescheduled dates are common practice for the District Court. In fact, in the Related Litigations, a date that the Docket Control Order indicated as a “deadline that cannot be changed without an acceptable showing of good cause” has already

been rescheduled. (*Compare* Ex. 1017 at 5 (Markman Hearing scheduled for May 30, 2025) *with* Ex. 1037 (Markman Hearing rescheduled for Jun 12, 2025).) It would be unsurprising then, or even likely, for the District Court to take similar approach with respect to the trials.

As another example, PO argues inaccurately that “[t]he Court’s November 17, 2025, trial setting (just under 20 months from filing) is consistent with the Court’s median time-to-trial date of 21.6 months.” (Request at 19.) PO’s data, however, is outdated. The most recent Federal Court Management Statistics report from March 2025 indicates that the median time to trial in civil cases for the Eastern District of Texas is not 21.6 months but rather 25.9 months. (Ex. 1045 at 35.) The data shows that trial schedules are being extended. *See Whirlpool Corp. et al. v. Shenzhen Sanlida Elec. Tech. Co.*, No. 2:22-CV-00027 (E.D. Tex. Mar. 25, 2025) (1092 days to trial); *Force Mos Tech., Co. v. ASUSTek Computer Inc.*, No. 2:22-CV-00460 (E.D. Tex. Jan. 22, 2025) (802 days to trial); *Touchstream Techs., Inc. v. Charter Communications Inc.*, No. 2:23-CV-00059 (E.D. Tex. Feb. 17, 2025) (746 days to trial). This too gives credence to the likelihood that the trials in the Related Litigations will be rescheduled.

Moreover, PO downplays the fact that there are multiple trials at play.² They

² While not related to timing, PO does not address the significant risk of inconsistent

will not proceed in parallel and will stretch out in time given the number of patents that span distinct technologies and claims at issue. Other factors such as post-trial motions in other cases and the Court's busy schedule exacerbate the problem. Consequently, while the Related Litigations *may* go to trial before a final written decision issues, it is no guarantee that any or all will go to trial prior before such time, and it is likely that any final judgments related to invalidity may issue after the final written decision in the present IPR.³

C. Factor 3 – Investment in Parallel Proceedings

PO's Response misleads as to the amount of the investment that will be made by District Court in the Related Litigations at the time of the expected institution date, October 16, 2025. Viewed in the proper light, this factor favors institution.

As held by the Board in *Fintiv*, “[i]f, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this

jury verdicts on invalidity (given that there will be three separate trials), which further favors resolving invalidity in a single proceeding at the PTAB.

³ Because final judgment, not trial, triggers the timing for appeal, final judgment may be a better point of comparison than the start date of trial for discretionary denial purposes. Even if invalidity is resolved at trial, final judgment will not immediately follow, and is expected to take months after the trial.

fact weighs against exercising discretion to deny institution under NHK.” *Fintiv*, 10. Here, the District Court has not issued any orders nor is it expected to issue any orders related to the ’204 Patent before the statutory deadline for institution. Although the District Court has held a Markman hearing and is expected to issue a Markman order before the deadline, the parties raised no claim construction issues that have bearing on the grounds set forth in the Petition because the prior art relied on in the Petition meets each of the claim terms under any reasonable interpretation.

D. Factor 4 – Overlap of Issues

This factor strongly weighs against discretionary denial for three principal reasons. First, Petitioners entered a *Sotera* stipulation, which moots PO’s arguments stating otherwise. (Request at 18-21.) Second, all of the ’204 Patent’s claims are challenged here, whereas only a subset are asserted in the Related Litigations. Third, the case law that PO cites to support the idea that Petitioners’ *Sotera* stipulation does not make this proceeding a “true alternative” are inapposite.

First, to mitigate any duplication concerns, if the Petition is instituted, Defendants will not pursue in the Related Litigations the grounds raised, or grounds that could have reasonably been raised, in the instituted Petition. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential); *BMW of No. Am., LLC v. Northstar Systems LLC*, IPR2023-01017, Paper 12, at 10 (PTAB Dec. 8, 2023). While not dispositive, this fact is still highly

relevant. See “Guidance on USPTO’s rescission of ‘Interim Procedure for Discretionary Denials in AIA Post- Grant Proceedings with Parallel District Court Litigation,’” March 24, 2025 at 2-3.

Second, the Board may determine the invalidity or non-invalidity of all of the ’204 Patent’s claims in this proceeding because all fifteen claims are challenged. (Petition at Section VI.) The District Court will not have the same opportunity because—PO’s infringement expert report in the Related Litigations indicates that PO will only pursue a minority (claims 1, 12 and 14) of the ’204 Patent’s total claims. Thus, this single proceeding is more efficient than the Related Litigations.

Third, PO improperly relies on *Motorola Solutions, Inc. v. Stellar, LLC*, IPR2024-01205, Paper 19 (PTAB March 28, 2025) and *Samsung Electronics Co., Ltd. v. Sionyx, LLC*, IPR2025-00064, Paper 15 (PTAB June 6, 2025) to support its proposition that this factor weighs in favor of denial. PO’s theory is that because a handful of system art is listed in Defendants’ Invalidity Contentions, this proceeding would not be a “true alternative” to the Related Litigations. The particular circumstances of *Motorola* and *Samsung*, however, are not present in this case.

In *Motorola*, the Director vacated an institution decision, in part because the Director determined that petitioner’s *Sotera* stipulation did not ensure that the IPR proceeding would be a “true alternative” to the district court proceeding. *Motorola*, Paper 19 at 3-4. The Director found that “Petitioner’s invalidity arguments in the

district court are more expansive and include combinations of the prior art asserted in these proceedings with unpublished system prior art, which Petitioner's stipulation is not likely to moot." *Id.* at 4. What is not detailed in the decision, however, is the extent of the petitioner's combinations of the asserted prior art with the system art. The patent owner provided those details in its request for director review. *See Motorola*, Paper 15 at 8-9. There, the patent owner argued that the *Motorola* petitioner "ha[d] offered a 1200-page invalidity expert report in the district court case, the majority of which will not be mooted by Petitioner's *Sotera* stipulation despite clear overlap in subject matter because of obviousness assertions combining art asserted in this IPR with unpublished 'systems prior art' theories." Defendants' invalidity expert report here is easily distinguishable. **None** of the grounds in Defendants' invalidity expert report reply on combinations with system prior art, including the grounds with respect to the '204 Patent. (Ex. 1046 at Section 4 (Summary of Opinions & Materials Considered, Sections 8.3, 9.3, 10.3, 12.1 and 13.1 (Overview of the Prior Art).) Accordingly, Petitioners' *Sotera* stipulation would completely address the duplication concerns as to those grounds if the Petition were instituted. In these circumstances, this proceeding is a "true alternative" as compared to *Motorola*.

In *Samsung*, the Board similarly denied institution, in part because it determined that the petitioner's *Sotera* stipulation did not ensure that the IPR

proceeding would be a “true alternative” to the district court litigation. *Samsung*, Paper 15 at 13. The difference between *Samsung* and *Motorola* is that the defendant in the *Samsung* district court litigation had not yet served its invalidity expert report at the time of the Board’s discretionary denial decision. (*Compare id.* at 1 (April 23, 2025 decision date) *with* Ex. 1042 at 4 (November 17, 2025 deadline to serve expert disclosures).) The Board therefore could only consider how the presence of system prior art in the defendant’s invalidity contentions impacted the effect of the petitioner’s *Sotera* stipulation. *Samsung*, Paper 15 at 13. For this reason, *Samsung* is also easily distinguishable. Here, the Director has the benefit of Defendants’ invalidity expert report that shows, as noted above, **none** of the grounds in the report reply on combinations with system prior art, including the grounds with respect to the ’204 Patent. (Ex. 1046 at Section 4 (Summary of Opinions & Materials Considered, Sections 8.3, 9.3, 10.3, 12.1 and 13.1 (Overview of the Prior Art).) Accordingly, Petitioners’ *Sotera* stipulation addresses duplication concerns and that this proceeding represents a “true alternative” as compared to *Samsung*. Significantly, even under the circumstances in *Samsung*, the Board still found that this factor weighed slightly against exercising its discretion to deny institution. *Samsung*, Paper 15 at 14. With more sure circumstances here, the Director should find that this factor strongly weighs against discretionary denial.

E. Factor 5 – Overlap of Parties

This factor weighs against discretionary denial. Petitioners AT&T, T-Mobile and Verizon are defendants in the Related Litigations. *See, e.g., HP Inc. v. Slingshot Printing LLC*, IPR2020-01084, Paper 13 at 9 (having the “same parties as parallel proceeding” makes factor 5 “neutral”). It is “far from an unusual circumstance that a petitioner in *inter partes* review and a defendant in a parallel district court proceeding are the same.” *Sand Revolution II LLC v. Continental Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 12-13 (PTAB June 16, 2020).

However, Petitioner’s Ericsson and Nokia are intervenors in the Related Litigation because they are designers and manufacturers of some of the accused products. As such they have an interest in challenging the validity of the ’204 Patent that extends beyond the Related Litigation. Thus, only the current IPR can provide the relief they seek from the invalidity of all Challenged Claims. Thus, this factor weighs against discretionary denial.

F. Factor 6 – Other Factors

The Petition presents compelling evidence of invalidity, and it would be unjust for the Director to exercise discretionary denial to deny institution.

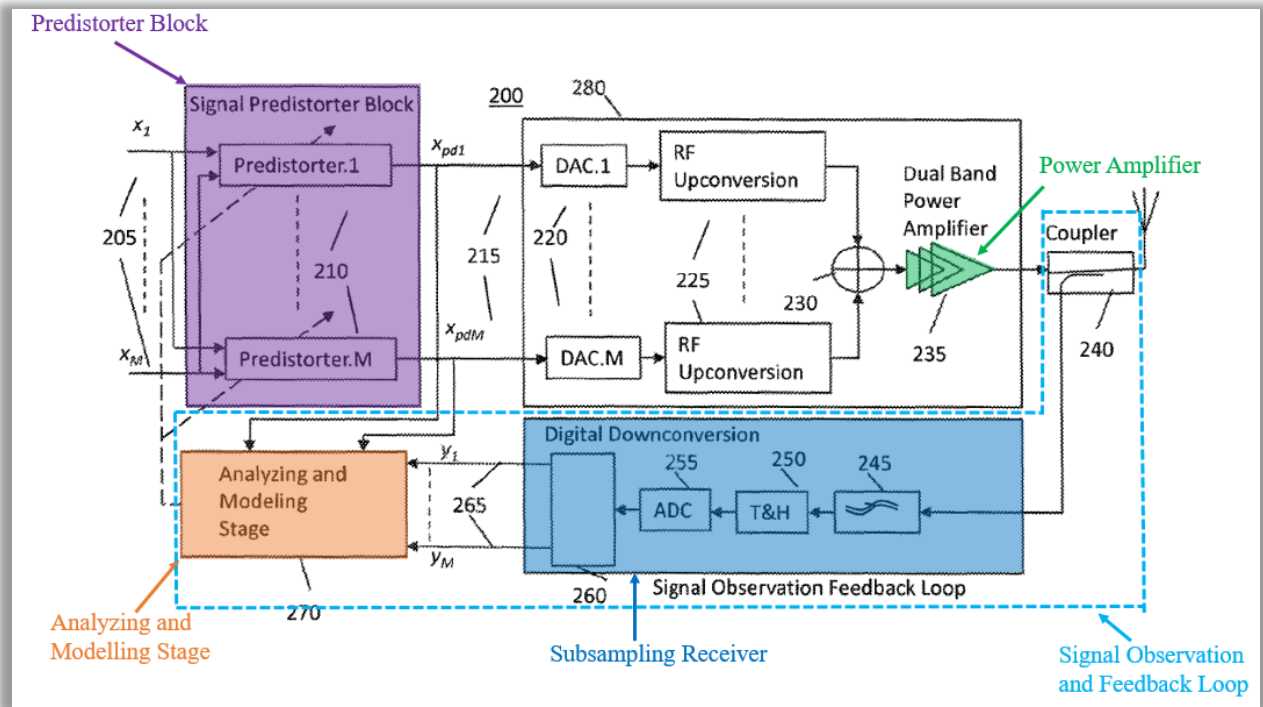
1. The Petition’s Merits Are Strong

PO is silent on the Petition’s merits other than a promise to address in a yet to be filed POPR. (Request at 22.) For that reason alone, this factor should weigh against discretionary denial. *Samsung Electronics Co., Ltd. v. Clear Imaging*

Research, LLC, IPR2020-01401, Paper 12 at 23 (PTAB Feb. 17, 2021)

(encouraging parties to “point out, as part of the factor-based analysis, particular ‘strengths or weaknesses’ to aid the Board in deciding whether the merits tip the balance one way or another.”). But considering the Petition’s merits, the Director will see that this factor strongly weighs against discretionary denial.

As described in the Petition, when a power amplifier (“PA”), like those used in radio telecommunications, operates in its non-linear region, the output from the PA is distorted relative to its input. EX-1003, ¶¶31-37. Like many others prior to the ’204 Patent, the inventors proposed to mitigate PA nonlinearities by predistorting the signal input into the PA. EX-1003, ¶31. As shown in the ’204 Patent’s Fig. 2, the specification discloses an “indirect learning” approach to predistortion where feedback signals are taken after predistortion and after the PA (blue) so that the nonlinearities introduced by the PA (green) can be modeled (orange) and used to update the system’s predistorters (purple):



EX-1001, Fig. 2 (Annotated); EX-1003, ¶32; Petition at 1, 2.

The signal predistorter block predistorts input signals (x_1 to x_M) based on an estimate from the “analyzing and modeling stage” through comparison of the predistorted signals (x_{pd1} to x_{pdM}) to post-PA feedback signals (y_1 to y_M). The post-PA feedback signals are taken using known subsampling techniques. The Patent Owner argued during prosecution that this basic architecture with a subsampling receiver was novel and non-obvious, but this is simply incorrect. EX-1003, ¶33; Petition at 2.

Rather, it was commonplace to compensate for distortion by using feedback signals taken both after predistortion and after the PA to model the PA’s nonlinearity. EX-1003, ¶34. For example, Peroulas (used in Ground 1) discloses a

near identical architecture for predistortion (shown with common elements annotated in a common color):

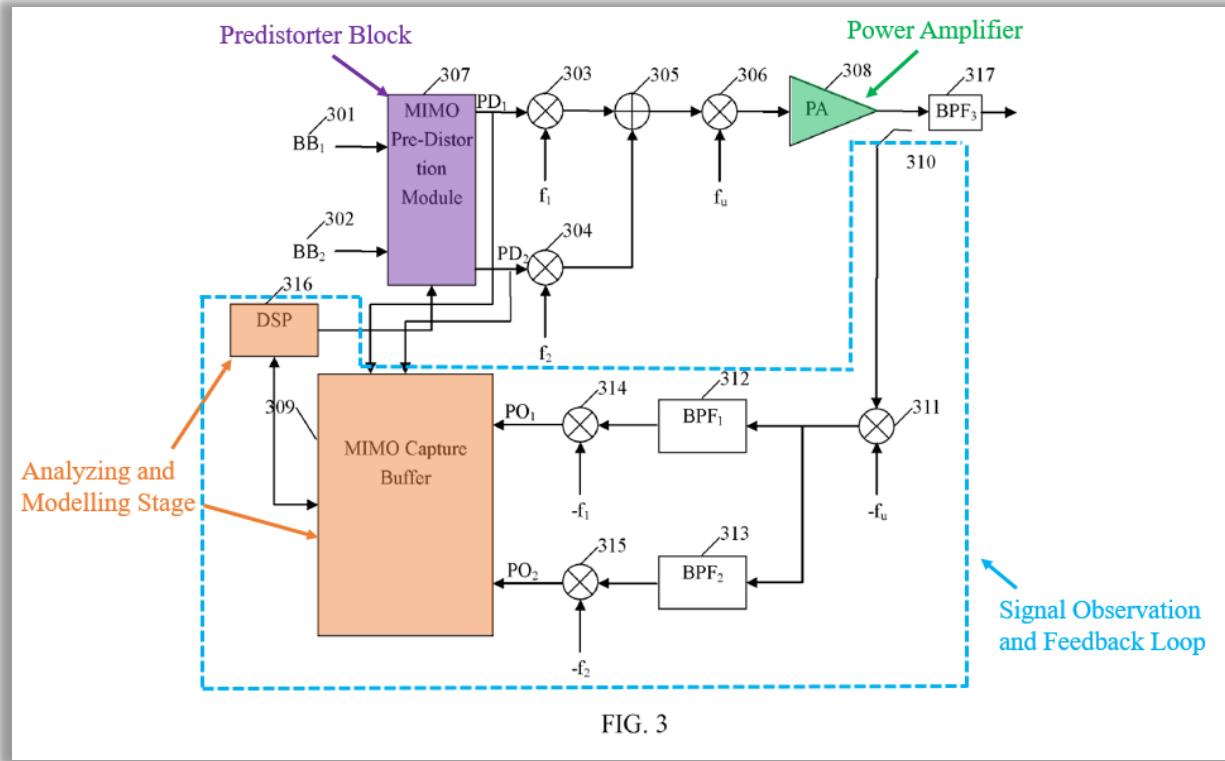


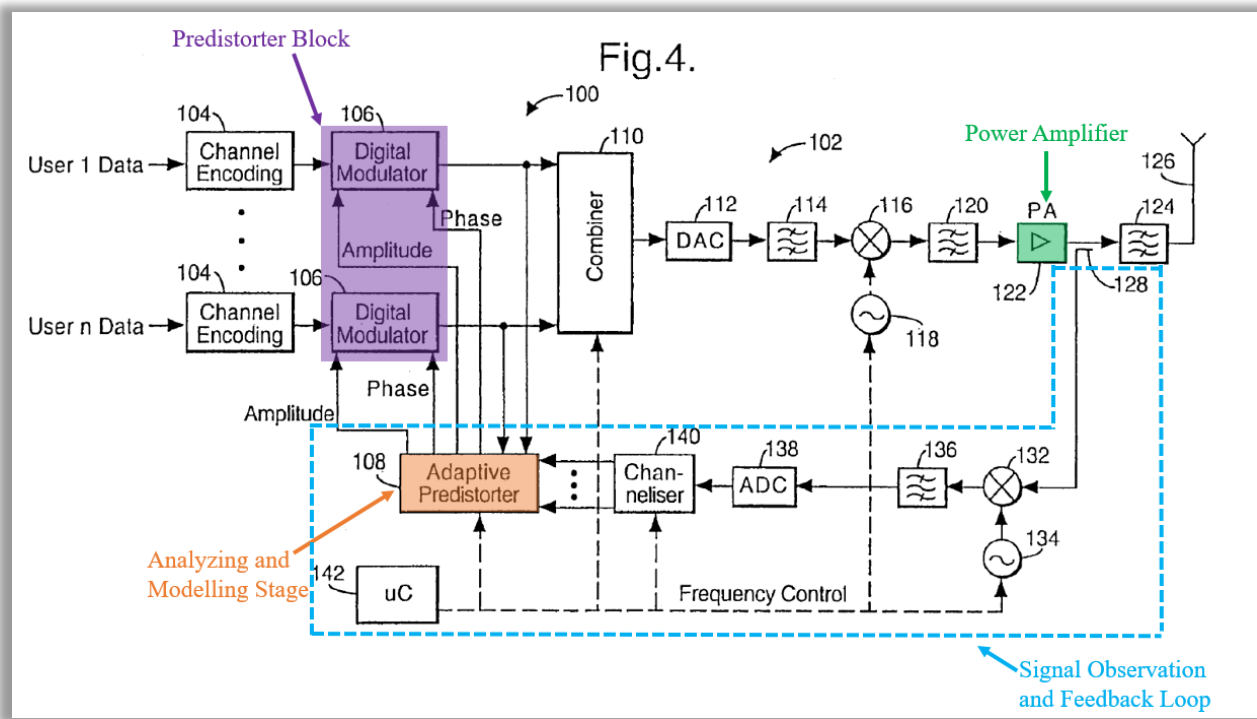
FIG. 3

EX-1005, Fig. 3 (Annotated); Petition at 2, 3.

Peroulas' MIMO Pre-Distortion Module (purple) predistorts input signals (BB_1 and BB_2) based on an estimate from the MIMO Capture Buffer and Digital Signal Processor ("DSP", orange) through comparison of the predistorted signals to post-PA feedback signals. The feedback signals (PO_1 and PO_2) are taken from the output of the PA and sampled by a signal observation and feedback loop (light blue), just like the '204 Patent. EX-1003, ¶35; Petition at 3.

While Peroulas may not expressly state that it uses subsampling for its post-PA feedback, this was a well-known and commonly used technique to provide feedback signals. Thus, a person of ordinary skill in the art (“POSITA”) understood that Peroulas discloses subsampling for its post-PA feedback. Alternately, it would have been obvious to modify Peroulas’ teachings to include subsampling as taught by Cidronali. Cidronali “adopts a subsampling receiver, which allow[s] extreme flexibility and coherent dual-band down-conversion” in digital predistortion systems. EX-1006, 000001. Thus, as described in Ground 1, Peroulas alone or in combination with Cidronali renders obvious each Challenged Claim. EX-1003, ¶36; Petition at 4.

Ground 2 then presents an additional basis of unpatentability in view of Posti. Posti discloses a multi-frequency carrier transmitter comprising a plurality of input signals, a plurality of digital modulators for predistortion (purple), and a PA (green) to amplify the signal. EX-1009, 2:43-60, 5:1-5, 5:13-15, 5:41-42. Posti uses indirect learning with a signal observation and feedback loop (blue) to estimate and linearize the distortion introduced by the PA using an adaptive predistorter 108 (orange) as the claimed “analyzing and modeling stage.” EX-1009, 5:50-52, 6:23-33; EX-1003, ¶37; Petition at 4.



EX-1009, Fig 4 (Annotated); Petition at 5.

As in Ground 1, Posti alone or in combination with Cidronali renders obvious each Challenged Claim.

These grounds plainly demonstrate the unpatentability of the challenged claims.

Moreover, none of the prior art or grounds asserted in the Petition were previously considered by either the Patent Office or any court, Petition at Section VI.B. In such cases, this factor weighs against discretionary denial. *Comcast Cable Commn’s, LLC v. Rovi Guides, Inc.*, IPR2019-00231, Paper 14 at 11 (PTAB May 20, 2019) (obviousness challenges not “previously considered by the Office or any court” weigh in favor of not denying institution).

2. The Petition Has Proper Form

PO first challenges the quantity and quality of the Petition's grounds, stating that "Petitioners assert three grounds, none of which are anticipation grounds. Petitioners' failure to identify any anticipatory art serves as an initial indication of the weaknesses of the Petition's merits."⁴ Request at 29. The number of grounds that a petition presents is not, of course, the standard for institution. 35 U.S.C. § 314(a). ("The Director may not authorize an inter partes review to be instituted unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.") Furthermore, institution may be based on either anticipation or obviousness grounds. 35 U.S.C. § 311(b) ("A petitioner in an inter partes review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 *or* 103[.]). It has never been established or even suggested that an anticipation ground is inherently stronger than an obviousness ground, and PO cites no cases to the contrary.

G. Reliance on Expert testimony

Petitioners' reliance on expert evidence is entirely compliant with Federal Circuit precedent. Both *Phillips* and *KSR*, which form the foundation for claim

⁴ The Petition asserts two grounds, not three. Pet. 20.

construction and obviousness, require one to evaluate a patent and prior art from the perspective of a POSITA. Moreover, the Federal Circuit has made clear that attorney argument alone is insufficient. As such, PO's criticism of the Petition vis-à-vis James Proctor, Jr.'s expert declaration (Ex. 1003.) is misplaced. This consideration weighs against discretionary denial.

It is well established that patent claims are construed based on the understanding of a POSITA. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (“We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have *to a person of ordinary skill in the art*[.]”) In accordance with Federal Circuit precedent, Proctor provides his perspective on the construction of the '204 Patent's claims with testimony supported by the required disclosure of references in accordance with 37 CFR § 42.65(a) and *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (Aug. 24, 2022) (precedential). (See Ex. 1003, Section 7 (Claim Construction).)

Obviousness grounds are likewise evaluated from the perspective of a POSITA. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“If *a person of ordinary skill* can implement a predictable variation, §103 likely bars its patentability.”), 418 (“[I]t can be important to identify a reason that would have prompted *a person of ordinary skill* in the relevant field to combine the elements in the way the claimed new invention does.”). Here, again in accordance with Federal

Circuit precedent, Proctor provides his perspective on the obviousness of certain features claimed by the '204 Patent and the obviousness of the combination of certain references, with testimony supported by the required disclosure of references in accordance with 37 CFR § 42.65(a) and *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (Aug. 24, 2022) (precedential). (See Ex. 1003, Section VIII (Identification of How the Claims Are Unpatentable).) PO's assertion that the Petition somehow detrimentally "relies upon [Proctor's] testimony, including attempting to plug holds by arguing that certain features not disclosed in the relied-on references would have been obvious" does not comport.

Moreover, the Federal Circuit has made it clear that attorney argument is not evidence. *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence.") (citing *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) ("[U]nsworn attorney argument . . . is not evidence and cannot rebut . . . other admitted evidence . . .")). See also *Elbit Sys. Of Am., LLC, v. Thales Visionix, Inc.*, 881 F.3d 1354, 1359 (Fed. Cir. 2018) ("Elbit fails to present any evidence supporting this contention beyond attorney argument . . . and '[a]ttorney argument is not evidence' and cannot rebut other admitted evidence."). The Board recently confirmed this: "It is well settled that mere attorney argument unsupported by factual evidence is entitled no probative value." *PLR Worldwide Sales LTD. v. Flip Phone Games, Inc.*, IPR2024-00209, Paper 28 at

32 (April 24, 2025). Because attorney argument is not evidence, expert testimony, such as Proctor’s declaration with citations to factual support underlying the opinions therein, is essential to properly support IPR claim construction and obviousness positions. Proctor’s declaration is appropriately utilized to explain complicated subject matter and provide detail regarding how a POSITA would have understood the technical disclosures of the ’204 Patent and the prior art references

PO’s Request also asserts that “Mr. Proctor’s declaration contains much of the same language as the Petition” and therefore the Board should be skeptical. However, the cases cited by the PO do not support its argument. In *Kenetics*, the Board cited the relevant law that “[E]xpert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a)” and denied institution after finding that “Dr. Mohapatra’s Declaration does not provide any factual basis for its assertions.” *Kinetic Techs., Inc. v. Skyworks Solutions, Inc.*, IPR2014-00529, Paper 8, 14-15 (P.T.A.B. 2014). Likewise in the *Xerox* case, the Board found “[w]e have reviewed this excerpt from Dr. Jones’ declaration and note that it merely repeats, verbatim, the conclusory assertion for which it is offered to support” and therefore denied institution because “Dr. Jones does not cite to any additional supporting evidence or provide any technical reasoning to support his statement.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15. (P.T.A.B. 2022). Here, PO does not assert that

Dr. Proctor's opinions are conclusory and not factually supported (nor can it due to the extensive pincites to evidentiary support for his opinions). It is not remarkable that Mr. Proctor's declaration contains much of the same language as the Petition some as the rules require that such opinions and factual citations **be included** in the Petition pursuant to 37 § 42.6(a)(3) which states that "arguments must not be incorporated by reference from one document into another document." Thus, the Petition is properly supported by expert testimony that cites the underlying factual support.

H. Settled expectations

This consideration weights against discretionary denial because Petitioners' settled expectations are greater than PO's settled expectations, if any.

1. PO does not have any settled expectations, or at least no reasonable ones.

PO argues that it has settled expectations because Petitioners did not challenge the '204 Patent when it issued on May 2, 2017 or when "Petitioners Ericsson and Nokia [became] collectively aware of the Asserted patents (either directly or through their families) before then." Request 32. As a threshold matter, there are many practical problems with a de facto requirement for petitioners to challenge patents as they issue or are cited. These problems are detailed in the following section. Nevertheless, PO has not adequately supported that it has settled expectations because the case that it cites is inapposite.

In *IRhythm*, a single petitioner challenged four patents in five separate IPRs. *IRhythm Techs., Inc. v. Welch Allyn, Inc.*, IPR2025-00363, Paper 10 at 2 (PTAB June 6, 2025). The four patents belong to a family. *IRhythm*, Paper 11 at 5. Since their issuance, the four patents have only ever been assigned to the patent owner. *Id.* The patent owner argued that the petitioner’s founder was “particularly focused on patent searches.” *IRhythm*, Paper 7 at 30. The petitioner’s founder is quoted as saying, “[T]o figure out if people had done this before[,] we conducted IP searches. Our focus was on patents that had already been issued as well as pending patent applications.” *Id.* (quoting Ex. 1050 at 232). The petitioner’s founder even stated that he “revisited the team’s early IP assessment” and “dived much more deeply in the analysis of specific claims.” *Id.* (quoting Ex. 1050 at 233). The Director discretionarily denied review of the five IPRs because the oldest patent in the family was cited in an information disclosure statement for one of the petitioner’s patent applications where the petitioner was particularly focused on the pending applications. *IRhythm*, Paper 10 at 3.

IRhythm is distinguishable because (1) there are five petitioners here instead of a single petitioner, (2) PO did not purportedly acquire the ’204 Patent until just before filing the Related Litigations and (3) PO provided no evidence that Ericsson was particularly focused on the patent landscape at the time that the ’204 Patent was identified by the examiner.

First, having multiple Petitioners here is significant because whatever knowledge attributable to one of the Petitioners may not be fairly inferred for the others. Even if knowledge of the '204 Patent is attributable to Ericsson through mere citation by an examiner, or inclusion in an IDS, which Petitioners contest, that knowledge may not be inferred for Nokia, AT&T, T-Mobile and Verizon. Therefore, PO could have no settled expectations with respect to the other Petitioners regarding the '204 Patent. And whether or not the '561 and '345 Patents were cited in Ericsson's or Nokia's Patent Applications or included in an IDS has no bearing on Petitioners' knowledge, if any, of the '204 Patent

Second, PO did not acquire ownership of the '204 Patent until May 31 2023, and did not publicly disclose it had acquired the '204 Patent until May 2024, after it had filed the Related Litigations. (Ex. 1033 at 1.) In these circumstances, PO could not begin developing any expectations until the acquisition date of May 2023⁴ at the earliest. Thus, PO should not have had **any** expectations that Ericsson would not challenge the validity of the '204 patent when it was asserted.

Third, PO alleges that the publication of the application that issued as the '204 Patent was cited by examiner on the face of Ericsson '673 patent on May 23, 2017 and by the examiner in office action for the application that issued as the '673 Patent on September 6, 2016, but at these times, the '204 Patent belonged to UTI Limited Partnership. PO does not allege that in 2016 or 2017 Ericsson was particularly

focused on UTI's patents as UTI is clearly not a competitor to Ericsson.⁵

2. Petitioners' settled expectations carry greater weight.

While the PO cannot demonstrate that it had settled expectations, Petitioners can.

First, not only has the '204 Patent lay dormant for its entire life until the Related Litigations, but patent law permits IPRs to be filed many years after a patent issues.

The '204 Patent issued in May 2017, yet it has never been commercialized, asserted, marked, licensed or otherwise applied in Petitioners' technology space before the Related Litigations of March 2024. Petitioners then fairly came to expect that the '204 Patent would continue in the same manner. The Director recently clarified that these are "considerations that weigh against a patent owner's claim of settled expectations and bears on the Director's discretion." *Intel Corporation v. Proxence LLC*, IPR2025-00327, Paper 12 at 2-3 (PTAB June 26, 2025). The fact that the '204 Patent was asserted for the first time in the Related Litigations is not due to allegedly infringing products having recently come to market. PO accuses

⁵ UTI Limited Partnership is associated with the University of Calgary, and the PO does not assert that UTI commercialized, asserted, marked, licensed the '204 Patent or otherwise was a competitor in Petitioners' technology space.

products in the Related Litigations that were first sold to Defendants around seven years before the Related Litigations were filed.

Second, to the extent the '204 is not considered a newer patent, the AIA does not restrict IPRs to “newer” patents; any patent over the age of nine months may be challenged. 35 U.S.C. § 311; *see also NHK Spring Co., Ltd. v. Intri-Plex Techs., Inc.*, No. IPR2018-00752, Paper 8 at 19 (PTAB Sept. 12, 2018) (precedential) (“Patent Owner argues that Petitioner knew about the '841 patent for more than 10 years, yet provides no explanation for why it waited so long to file the Petition. . . . We are not persuaded that this lapse in time favors denying review.”). Petitioners thus have settled expectations that IPRs can be brought in accordance with the AIA, and PO can have no expectation of avoiding an IPR during the lifetime of the '204 Patent (and beyond).

I. Practical Considerations

An additional consideration that the Director should consider is a practical one. The current application of “settled expectations” may unintentionally increase the PTAB’s workload and decrease patent quality, all of which contradicts the stated purpose of the Workload Memo. Workload Memo at 3 (“These processes aim to improve PTAB efficiency, maintain PTAB capacity to conduct AIA proceedings, reduce pendency in *ex parte* appeals, and promote consistent application of discretionary considerations in the institution off AIA proceedings.”) Thus, this

consideration weighs against discretionary denial.

When expectations begin accruing upon patent issuance or the subject patent is cited as a reference for a petitioner's patent application (*see, e.g., Dabico Airport Solutions Inc. v. AXA Power APS*, IPR2025-00408, Paper 21 at 3 (PTAB June 18, 2025); *IRhythm*, Paper 10 at 3)⁶, stakeholders are incentivized to monitor all issued patents and potentially launch IPRs indiscriminantly. This can be impractical and inefficient as costs will substantially increase for the public in monitoring and policing, for patent owners in defending, and for the PTAB in processing the increased case load. Patents that were not likely to be challenged under the old system because they would not be enforced may come under fire because of the public proactively filing IPRs. The public may also be incentivised not to perform prior art searches, thereby also impacting patent quality. In this case, where the

⁶ It is unclear how a patent owner's expectation of non-invalidity may "settle" after its patent issues when patents carry a presumption of validity immediately upon issuance. 35 U.S.C. § 282(a) ("A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim.")

merits of the Petition are particularly strong and Petitioners' settled expectations carry greater weight, the Director should apply the "settled expectations" factor more narrowly so as to avoid these potential unintended consequences.

J. APA Considerations

Notwithstanding the foregoing, the Workload Memo should not apply to the present Petition because that would violate the Administrative Procedure Act ("APA"). 5 U.S.C. §§ 551–559. First, the Director lacks authority to "promulgate retroactive rules." *Tafas v. Dudas*, 511 F. Supp. 2d 652, 666 (E.D. Va. 2007). Second, "general statements of policy" can only be applied prospectively. *Lincoln v. Vigil*, 508 U.S. 182, 197 (1993); 5 U.S.C. § 552(a)(2)(D)(ii). Third, the APA requires agencies to inform parties of the matters of "law asserted." 5 U.S.C. § 554(b)(3). These violations are merely some examples that the Director should consider. Petitioners reserve the right to challenge the Workload Memo on other grounds including because it was adopted without notice-and-comment rulemaking.

V. CONCLUSION

For the foregoing reasons, the Director should deny PO's request for discretionary denial of institution.

Dated: July 16, 2025

Respectfully submitted,

/Christopher Ricciuti/
Christopher Ricciuti
USPTO Reg. No. 65,549

*Counsel for T-Mobile USA, Inc.,
AT&T Mobility LLC, Cellco
Partnership d/b/a Verizon Wireless,
Ericsson Inc. and Nokia of America
Corporation*

CERTIFICATION OF SERVICE ON PATENT OWNER

Pursuant to 37 C.F.R. §§42.6(e), 42.8(b)(4) and 42.105, the undersigned certifies that on July 16, 2025, a complete and entire copy of this **Petitioners' Response to Patent Owner's Request for Discretionary Denial** was served in its entirety via filing through the Patent Trial and Appeal Case Tracking System (P-TACTS), as well as by delivering copies via electronic mail to the following:

David T. DeZern Registration No. 60,117
Justin B. Kimble Registration No. 58,591
NELSON BUMGARDNER CONROY PC
2727 N. Harwood St., Suite 250
Dallas, TX 75201
david@nelbum.com
justin@nelbum.com
SmartRF@nelbum.com

/Christopher Ricciuti/
Christopher Ricciuti
USPTO Reg. No. 65,549

*Counsel for T-Mobile USA, Inc.,
AT&T Mobility LLC, Cellco
Partnership d/b/a Verizon Wireless,
Ericsson Inc. and Nokia of America
Corporation*

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24 *et seq.*, the undersigned certifies that this document complies with the type-volume limitations. This document contains 6,490 words as calculated by the “Word Count” feature of Microsoft 365, the word processing program used to create it.

Dated: July 16, 2025

/Christopher Ricciuti/
Christopher Ricciuti
USPTO Reg. No. 65,549/

*Counsel for T-Mobile USA, Inc., AT&T
Services, Inc., Cellco Partnership d/b/a
Verizon Wireless, Ericsson Inc. and Nokia of
America Corporation*