

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ELECTION SYSTEMS & SOFTWARE, LLC
Petitioner,

v.

HART INTERCIVIC, INC.
Patent Owner.

Case: PGR2025-00066
Patent 12,125,319 B2

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

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UPDATED EXHIBIT LIST
(adding Exhibit 1053)

Exhibit No.	Exhibit Description
1001	U.S. Patent No. 12,125,319
1002	File History for U.S. Patent No. 12,125,319
1003	Declaration of Dr. Shamos
1004	U.S. Patent Application Publication 2014/0231513 (“Brockhouse”)
1005	U.S. Patent 7,406,201 (“Heilper”)
1006	Brazilian Patent Application No. BR102013018558A2
1007	Certified Translation of BR102013018558A2 (“Nadaf”)
1008	U.S. Patent No. 9,401,059 (“Backert”)
1009	Schneier, B., “Applied Cryptography” (Second Ed.), John Wiley & Sons, Inc. (1996) (“Schneier”)
1010	U.S. Patent 7,080,779 (“Cummings”)
1011	U.S. Patent No. 3,609,685 (“Deutsch”)
1012	U.S. Patent 6,250,548 (“McClure”)
1013	U.S. Patent No. 5,764,799 (“Hong”)
1014	U.S. Patent No. 9,361,531 (“Stella”)
1015	‘966 PGR Final Written Decision, PGR 2020-00031, Paper 29 (Sept. 1, 2021)
1016	File History For U.S. Application No. 17/483,627 (Excerpted)
1017	2015 Voluntary Voting System Guidelines. Version 1.1 (“VVSG”)
1018	RESERVED
1019	Keller et al., <i>A PC-Based Open-Source Voting Machin with an Accessible Voter-Verifiable Paper Ballot</i> , Proceedings of the 2005 USENIX Annual Technical Conference (“Keller”)
1020	U.S. Patent No. 5,377,099 (“Miyagawa”)

Exhibit No.	Exhibit Description
1021	Kim et al, <i>Improved Support for Machine-Assisted Ballot-Level Audits</i> , 1 USENIX Journal of Election Technology and Systems (JETS) 88 (2013) (“Kim”)
1022	U.S. Patent Application Publication 2006/0041468 (“Reardon”)
1023	U.S. Patent Application Publication 2009/0166417 (“Dammann”)
1024	U.S. Patent Application Publication 2009/0289115 (“Chung”)
1025	U.S. Patent Application Publication 2019/0213820 (“Sebes”)
1026	U.S. Patent No. 7,306,148 (“Morganstein”)
1027	RESERVED
1028	U.S. Patent No. 2,612,994 (“Woodland”)
1029	U.S. Patent No. 5,726,435 (“Hara”)
1030	Ashford, <i>QR Codes and Academic Libraries: Reaching Mobile Users</i> (2010) (“Ashford”)
1031	Barrera et al., <i>Optical encryption and QR codes: Secure and noise-free information retrieval</i> , 21(5) Optics Express 5373 (2013) (“Barrera”)
1032	U.S. Patent Application Publication 2010/0114674 (“Daza Fernandez”)
1033	U.S. Patent No. 9,165,417 (“Valles”)
1034	U.S. Patent Application Publication No. 2014/0012635 (“Joyce”)
1035	U.S. Patent No. 10,002,481 (“Seibel”)
1036	U.S. Patent No. 10,147,259 (“Dvorak”)
1037	WO 01/020562
1038	Krawczyk et al., <i>IETF Request for Comments 2104: HMAC: Keyed-Hashing for Message Authentication</i> (1997) https://tools.ietf.org/pdf/rfc2104.pdf (“Krawczyk”)
1039	Essex & Hengartner, <i>Hover: Trustworthy Elections with Hash-Only Verification</i> , IEEE Security and Privacy, September/October 2012 (“Essex”)

Exhibit No.	Exhibit Description
1040	U.S. Patent Application Publication No. 2018/0102013 (“Spanos”)
1041	U.S. Patent No. 7,729,991 (“Rodriguez”)
1042	WO 04/038632 (“Boldin”)
1043	U.S. Patent Application Publication No. 2011/0202464 (“Carbullido”)
1044	U.S. Patent No. 6,873,966 (“Babbitt”)
1045	Shamos, <i>Electronic Voting Glossary</i> (2011) http://euro.ecom.cmu.edu/people/faculty/mshamos/Glossary.pdf
1046	FIPS PUB 186-4 – Digital Signature Standard (DSS) (July 2013)
1047	U.S. Reissue Patent No. RE40,449 (“Provitola”)
1048	Pires Declaration
1049	<i>Microsoft Computer Dictionary</i> (2002), definition of “recursion”
1050	Barron’s <i>Dictionary of Computer and Internet Terms</i> (10 th . Ed., 2009), definition of “recursion”
1051	Rigdon’s <i>Dictionary of Computer and Internet Terms</i> (1 st edition 2016) definition of “recursion”
1052	U.S. Patent Application Publication US2015/0279139A1 (“Kincaid”)
1053	‘966 PGR Institution Decision, PGR 2020-00031, Paper 6 (Sept. 2, 2020)

I. INTRODUCTION

Patent Owner (“PO”) asserts throughout its Brief in Support (“Br.” or “Brief”) that the Challenged Claims are patentable because of a single “temporal” limitation — comparing the first and second data sets prior to generating any cast vote record. But the Board previously held in a PGR of a family member to the ‘319 Patent (PGR2020-00031 (“’966 PGR”)) that Nadaf does exactly that. Thus, the only trivial difference between the Challenged Claims and Nadaf is that the generated CVR in Nadaf is used for auditing the vote rather than tabulating it. But the Examiner never considered Schneier, which is plainly not cumulative of Nadaf, and obviates anything remaining of PO’s asserted temporal limitation. And PO invited the Examiner for the ‘319 Patent to commit material error by repeatedly “mischaracterizing” (the Board’s word) a 2019 Letter authored by Petitioner.

PO also asserts the Board rejected Petitioner’s § 101 arguments in the ‘966 PGR and that the Examiner did as well during prosecution of the ‘319 Patent. Not so. The Board previously held in the Institution Decision for the ‘966 PGR that very similar claims were directed to an abstract idea (but decided the FWD on other Grounds) and the Examiner never mentioned ineligibility.

PO’s other arguments recycle these same incorrect themes and fail to justify discretionary denial. Petitioner submits post grant review should be instituted.

II. DISCRETIONARY DENIAL UNDER § 325(d) IS NOT PROPER

Discretionary denial is improper under Part 1 of *Advanced Bionics*. The Board in the previous ‘966 FWD did not reject Petitioner’s ineligibility challenge in Ground 1 as PO falsely insinuates. And the Examiner during prosecution never articulated how or why the claims of the ‘319 Patent (or any family member) are eligible under § 101 despite the Board having determined in the prior Institution Decision that nearly identical claims in the related ‘966 Patent were directed to abstract ideas. Further, each of Grounds 2 and 4¹ raise prior art (Schneier) and arguments not previously presented to the Examiner. Schneier discloses more information than Nadaf, obviates the asserted temporal limitation, and is plainly not cumulative of Nadaf. This information is pertinent to unpatentability.

Discretionary denial is also improper under Part 2 of *Advanced Bionics* as the Examiner made errors that were material to patentability during prosecution of the ‘319 Patent and its family members. Indeed, PO itself invited those errors by, for example, repeatedly “mischaracterizing” Petitioner’s 2019 Letter (“2019 Letter”).

¹ PO submitted a Disclaimer of Claims 21, 22, 28, 30, 32, 33, 36, 37, and 38 to avoid Ground 3, but stated that it reserves the right to reissue those claims. EX2008; Br. at 18. Disclaimed Claims 30, 32, 33, 36, 37, and 38 are also challenged in Ground 4.

A. *ADVANCED BIONICS* PART I

1. Eligibility Under § 101 Has Not Been Properly Considered

The Board did not reject Petitioner’s ineligibility assertions in the ‘966 FWD as PO insinuates:

Because we determine that these claims are unpatentable in light of prior art or indefinite for the reasons discussed above, **we do not separately assess the patentability of these claims based on the remaining [ineligibility] ground in this proceeding.**

EX1015, 83 (emphasis added), *citing Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (“... the Board has ‘discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims.’”). *See also* Br. at 9. Per Chief Judge Boalick’s recent July 29, 2025 Memorandum requiring all FWDs to address all grounds, such a result will no longer occur. Accordingly, this proceeding would be the first to decide the ineligibility of claims in the ‘319 Patent family.

PO similarly asserts the Examiner necessarily rejected Petitioner’s ineligibility arguments pursuant to MPEP §2103. Br. at 9. But the Examiner did not meaningfully consider ineligibility or the arguments presented during the ‘966 PGR as seen from a review of the Board’s Institution Decision involving the near-identical claims of the ‘966 Patent. *See* Petition at 11-12.

In the Institution Decision, the Board found that Petitioner had “sufficiently show[n] that the [‘966 patent] claim recites an abstract idea that falls within the

grouping of certain methods of organizing human activity.” EX1053 at 41. The Board’s Institution Decision further explained that “to be sure, Petitioner shows—on this record and at this preliminary stage—that the recited OCR and the additional processes were disclosed in the prior art.” *Id.* at 46. But as PO did not submit a POPR, the Board invited the parties to “address, during trial,” the other factual issues related to patent eligibility under *Alice* such as whether the claim elements were well-known, routine, and/or conventional. *See id.* at 45, 47.

Despite these findings by the Board, the Examiner made no mention of eligibility generally or the Institution Decision during prosecution of the ‘319 Patent or any related application. While the Examiner did stamp “ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH” on the IDS forms, nothing in the file histories indicates meaningful review of the Institution Decision. *See, e.g.*, EX1002, 235-243. For example, the Examiner specifically noted during prosecution of the ‘267 and ‘621 Applications that she had “Reviewed Petition for Post Grant Review” “on 9/21/2020”—over three years before the application that issued as the ‘319 Patent was filed. *See* EX2006, 81, 642; EX2007, 49. But there is no such note specific to the September 1, 2021 Institution Decision.

There is also no indication in any of the other file histories in the ‘319 Patent family that the Examiner reviewed the ‘966 Petition or Institution Decision. *See* EX1002, 231, 297; EX2003, 43, 355, 401; EX2004, 22; EX2005, 25, 334. And no

Office Action or Notice of Allowance mentions § 101. There is thus no evidence that the Examiner meaningfully considered the Institution Decision and PO never identified it as something to which the Examiner should pay particular attention. *See EctoWorld, LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13, at 7.

Ultimately, the ineligibility assertions presented in the ‘966 PGR were sufficiently strong to warrant institution. The same result should follow here as the only purported difference between the ‘966 Patent Claims and the Challenged Claims is, per PO, a “temporal” limitation regarding comparing the first and second datasets to generate a CVR—which the specification explains is done using the generic “computing device 25.” *See* Br. at 12-13. *See also* EX1001, 4:2-38. Use of such devices and processes in a voting machine has long been held patent ineligible. *See Voter Verified, Inc. v. Election Systems & Software LLC*, 887 F.3d 1376, 1385-86 (Fed. Cir. 2018) (“the claims as a whole are drawn to the concept of voting, verifying the vote, and submitting the vote for tabulation. Humans have performed this fundamental activity that forms the basis of our democracy for hundreds of years.”).

2. Schneier Was Not Considered During Prosecution and Is Not Cumulative

While Brockhouse and Nadaf were marked as considered, the Examiner did not issue a rejection premised on Brockhouse or Nadaf during prosecution of the ‘319 Patent. *See* EX1002, generally. And the Examiner did not consider Schneier

during prosecution of any patent application in the ‘319 Patent family. This should end the inquiry pursuant to § 325(d) regarding Grounds 2 and 4.

PO, however, incorrectly asserts that Schneier is merely cumulative of Nadaf because both disclose the use of hash functions to confirm the accuracy of data sets. *See Br.* at 11. PO’s oversimplification of Nadaf and Schneier misses the mark. The relevant questions are: (i) does Schneier provide more and different information than Nadaf (it does); and (ii) is that additional information relevant to the grounds (it is).

As the Board explained in the FWD in the ‘966 Patent PGR, “Nadaf’s equipment 19 compares ‘the text vote information’ to ‘the vote information encoded into the bar code.’ The issue, though, is **whether that comparison generates a CVR. We agree with Petitioner that it does.**” EX1015 at 45 (emphasis added, internal citations omitted). *See also id.* at 49, 74 (holding Nadaf generates a CVR from the OCR data set). Nadaf thus discloses the same systems and processes for creating and comparing datasets and generating a CVR as in the Challenged Claims.

The trivial difference between Nadaf and the Challenged Claims is that this ‘data set comparison and CVR generation’ is used to *audit* the election in Nadaf rather than *tabulate* it. *See, e.g.,* EX1016, 112-123 (“...Nadaf only compares OCR data sets in the audit stage”). As explained in more detail in the following section, the Examiner’s acceptance of PO’s arguments regarding Nadaf was in error as it was based at least in part on PO’s repeated “mischaracterization” of the 2019 Letter.

Regardless, as explained in the Petition, by Dr. Shamos, and in Schneier itself, the use of hash functions to confirm the accuracy and authenticity of a document has been known in the art for decades. *See* Petition at 21-24. Schneier’s use of hash functions for this purpose is not limited in its temporal timeframe as it is in the specific audit process of Nadaf. Rather, Schneier discloses that the result of the hash function (*e.g.* the document “fingerprint”) can travel with the document—for example a financial instrument or, more aptly here, the PVR of Brockhouse. EX1003, ¶¶ 221-223, 257, 261. That “fingerprint” can thus be used to confirm the accuracy and authenticity of the document at any time or anywhere “in the network.” EX1009, 30-31. *See also* Petition at 67-70. And Schneier specifically discloses that digital signatures and hash functions can be used to ensure “Secure Elections.” EX1003, ¶ 221; EX1009, 125-126.

Schneier thus discloses more than Nadaf’s specific audit application, and those disclosures are directly relevant to the obviousness of the Challenged Claims. Schneier is not cumulative of Nadaf and institution is proper.

B. *ADVANCED BIONICS PART II*

Under the Board’s precedent, if the grounds present arguments and prior art that are not the same or substantially the same as those considered during examination, there is no need to proceed to Part II of *Advanced Bionics* (*i.e.*, whether the Office erred in a manner material to the patentability of challenged claims). As

explained in the previous section, that is the case here concerning ineligibility and Schneier. Regardless, the Examiner erred in several ways material to patentability.

1. The Examiner Erred in Not Considering the Combination of Brockhouse's Use of OCR to Generate the Tabulation CVR and Nadaf's Comparison Before CVR Generation

The Examiner did not issue any office actions during prosecution of the '319 Patent based on Brockhouse, Nadaf, or any combination thereof. PO asserts instead that during prosecution of related applications in the same patent family that the Examiner repeatedly considered and rejected Petitioner's arguments regarding the combination of Brockhouse and Nadaf (but not Schneier). Br. at 5-8. Review of those file histories, however, reveals that the Examiner looked to these references in combination for nothing more than the interchangeability of their bar codes.²

For example, during prosecution of the '294 Patent, the Examiner issued a rejection citing Brockhouse as the primary reference. EX2003, 382-398. The Examiner cited Nadaf only once in that rejection, regarding a single dependent claim requiring a "QR code" as Nadaf discloses a QR code while Brockhouse discloses a 1-D bar code. *Id.*, 387-88. The Examiner subsequently issued a rejection with Nadaf as the primary reference but did not cite Brockhouse. *Id.*, 337-354.

² The Examiner also cited Heilper throughout the file histories for its disclosure of an election dictionary and Levenshtein distance, but those claim elements do not appear in any of the Challenged Claims and are therefore not discussed herein.

During prosecution of the '092 Patent, the Examiner also rejected the pending claims using Brockhouse as the primary reference and citing Nadaf only for its disclosure of a QR code regarding two dependent claims. EX2004, 380-81. The Examiner then issued a rejection using Nadaf as the primary reference and cited Brockhouse only for its 1-D bar code regarding one dependent claim. *Id.*, 324-325.

As to the '357 Application, the Examiner issued a single rejection before PO abandoned the Application, again citing the interchangeability of the Nadaf and Brockhouse bar codes. EX2005, 3-21. No rejection based on Nadaf and Brockhouse was issued during prosecution of the '292 Patent. EX2006, 624-640.

Finally, during prosecution of the '078 Patent, the Examiner again cited Nadaf as the primary reference and cited Brockhouse only for the interchangeability of known QR codes and 1-D bar codes. EX2007, 382-383.

In short, the Examiner cited nothing more than the interchangeability of the 1-D and QR bar codes disclosed in Brockhouse and Nadaf. The Examiner did not apply the combination of: (1) Brockhouse's system for printing a PVR bearing voter readable text and a bar code, and generating a CVR for tabulation from the OCR dataset created from the scan of the voter readable text; and (2) Nadaf's comparison of the first and second datasets and resulting generation of the CVR.

As Dr. Shamos (whose testimony the Board repeatedly credited in the '966 FWD) explains in his Declaration, a POSITA would have known at the time of the

invention that OCR processes are error prone, and a POSITA therefore would have been motivated to implement processes in Brockhouse that ensured the OCR dataset used to create the CVR for tabulation was accurate and reliable. EX1003, ¶¶ 249, 258. Nadaf’s data set comparison as part of its audit CVR generation does exactly that. Indeed, and as explained by Dr. Shamos, a POSITA would have known the CVR used to audit an election must be as accurate as the CVR used to tabulate it, such as the Brockhouse CVR. *Id.* at ¶ 127. The Examiner’s failure to consider the pertinent disclosures of Brockhouse and Nadaf in combination during prosecution of the ‘319 Patent and its parent applications was therefore a material error.

2. PO’s Repetition of a Known Mischaracterization of Petitioner’s 2019 Letter Exacerbated the Examiner’s Errors

The Examiner’s errors regarding the combination of Brockhouse and Nadaf were compounded by PO’s own repeated “mischaracterization” of Petitioner’s 2019 Letter during prosecution of the applications in the ‘319 Patent family. *See* EX1015 (‘966 PGR FWD), 24-27, 33-34 (Board discussing “how Patent Owner mischaracterizes [Petitioner]’s letter” and the 2019 Letter actually “indicates that bar codes are trusted enough to be used in OCR-based tabulation systems.”). The Board further “disagree[d] with Patent Owner that [the 2019] letter indicates skepticism or any other kind of objective indicia of non-obviousness.” *Id.* at 34. And in a holding particularly apt here, the Board **rejected** PO’s argument that the 2019 Letter asserted “OCR could not be relied on in voting machines.” *Id.* at 25-27. The Board credited

Petitioner’s own prior art that “use[d] OCR to decode voter selections.” *Id.* at 25.

Despite these holdings, PO thereafter repeated its Board declared “mischaracterization” of the 2019 Letter during prosecution in response to rejections involving Nadaf. What follows is a side-by-side comparison of PO’s “mischaracterization” of the letter during the ‘966 PGR and PO’s identical assertions during prosecution of multiple related applications, including applications that were pending after the Board issued the ‘966 FWD:

‘966 PGR, Patent Owner Response	PO Statements During Prosecution
Indeed, as recently as April 2019, ES&S asserted in a public letter to sitting U.S. Senators that no voting system could “use OCR to read [a candidate’s name] and record a vote reliably[.]” PGR2020-00031, Paper 14 at 2 (emphasis added).	Indeed, as recently as April 2019, Election Systems & Software, LLC (the US market share leader in voting machines and the Petitioner in the Post Grant Review) asserted in a public letter to sitting U.S. Senators that no voting system could “use OCR to read [a candidate’s name] and record a vote reliably[.]” EX2003 at 62-63, 323-325; EX2004 at 45-46, 306-307; EX2006 at 592-94; EX2007 at 339-40 (emphasis added).

(emphasis added). PO made this “mischaracterization” in arguing to the Examiner that “[u]sing OCR in the CVR process of a voting system” is purportedly “difficult” because the voting systems have to process high volumes of records with high accuracy. *See* EX2003 (‘627 Application File History), 324. PO ultimately asserted that Petitioner, the “US market share leader in voting machines,” had stated that

OCR was not reliable enough to tabulate elections and that only via the “inventions of the pending application,” such as “comparing the OCR results to encoded information” or using an “election dictionary,” could one “use OCR in an electronic voting system.” *Id.* at 323-325. *See also* EX2004, 306-308 (same). The Board rejected that argument and the Examiner should have as well. That the Examiner did not reject it further shows the Examiner did not properly consider the ‘966 FWD.

To this latter point, PO made no mention of the Board’s finding that PO “mischaracterized” Petitioner’s letter during prosecution of the ‘319 Patent or any of the other applications that were pending when the Board issued the ‘966 FWD. *See* EX1002; EX2003; EX2004. PO’s Brief here does not address the Board’s findings regarding the 2019 Letter, either, despite the Petition discussing them in the specific context of why the claims should not have issued. *See* Petition at 13-14.

PO, having invited the Examiner’s errors during prosecution, cannot now credibly assert that no error took place and that institution should be denied. Both prongs of the *Advanced Bionics* framework are thus satisfied here, as: (1) the Petition includes ineligibility assertions and prior art (Schneier) that were not considered during prosecution; and (2) the Examiner committed errors during prosecution that were material to patentability. The Petition also presents additional evidence and facts, including Dr. Shamos’s analysis and opinions, that further warrant review.

**C. DISCRETIONARY DENIAL UNDER § 322(a)(4) AND
RULE 204(B)(4) IS NOT PROPER**

PO's argument is based on the incorrect premise that none of the art cited in the Petition "includes a temporal limitation that specifies *when* a cast record [*sic*] vote (CVR) is generated relative to a comparison of data sets—*e.g.* a comparison is performed '*prior to* generating any cast vote record.'" Br. at 12-13 (emphasis original). But as explained above, in the Petition, in Dr. Shamos's declaration, and in the Board's '966 FWD, Nadaf performs a comparison of the OCR and encoded data sets before generating a CVR. To again quote the Board's FWD:

Nadaf's equipment 19 compares "the text vote information" to "the vote information encoded into the bar code." The issue, though, is whether that comparison generates a CVR. We agree with Petitioner that it does. ... **Thus, after the comparative audit, the vote must exist in some form, as a CVR, so that the vote can be included in a count or tabulation.**

EX1015 (FWD), 45-46 (emphasis added, internal citations omitted). *See also* Petition at 11-12, 67; EX1003, ¶ 254. There can thus be no dispute that this temporal aspect of comparing the data sets before generating a CVR in the Challenged Claims is disclosed by Nadaf.

PO also cites to the '267 Application file history to support PO's argument that "Nadaf does not provide the temporal limitation." Br. at 14, n.9. But that application issued as U.S. Patent No. 11,004,292 Patent on May 11, 2021, nearly six months before the '966 FWD issued on September 1, 2021. And, importantly, the

claims of the '292 Patent do not require that the CVR be generated after the data set comparison or that the CVR be used for tabulation. Rather, similar to the '966 Patent, the independent claims of the '292 Patent require only “comparing the first data set and the second data set” (claim 1) and “providing a cast vote record indicating the voter’s at least one vote selection as determined by the first data set.” (Claim 1 and 18). *Compare* '292 Patent, Claims 1 and 18 (EX2006, 586, 588) with '966 Patent, Claim 6. The term “tabulation” appears in none of the claims of the '292 Patent. And the arguments by PO that the Examiner accepted regarding Nadaf, namely that “equipment 19 does use OCR, but it **does not generate anything that could qualify as a CVR with ‘voter selections [...] based on the voter readable text,**” were arguments the Board rejected in the '966 FWD. EX2006, 602 (emphasis added); EX1015 (FWD), 45, 48-49. Accordingly, the Examiner’s conclusion that “Nadaf fails to teach or fairly suggest comparing the first data set and the second data set before providing a cast vote record as determined by the first data set” shows only that the Examiner’s conclusion was contrary to that of the Board and lends no support to PO’s position. *See* EX2006, 78.

Given Nadaf’s disclosures and the Board’s holdings, it is clear the only trivial difference between the Challenged Claims and Nadaf is that the CVR generated after the data set comparison is used for *tabulation* of the votes (Challenged Claims) rather than an *audit* of the votes (Nadaf). Nothing about the process of generating

the CVR itself changes. As discussed above in Section II(A)(2), Schneier does not teach any limits for the use of the disclosed hash functions to confirm the accuracy and integrity of the “fingerprinted” document to any specific time frame.

To the contrary, Schneier, in the example of financial transactions, teaches that the hash function can be used to prevent a change in the fingerprinted pre-image (*e.g.* check) “somewhere in the network.” EX1009, 30-31; EX1003, ¶ 223. Somewhere in the network includes the first presentment of the financial instrument, akin to the PVR in Brockhouse that is used to generate the CVR for tabulation. *See id.* at ¶ 261. Schneier further teaches that the hash functions and associated digital signatures can be used to “prevent cheating” and that computerized voting systems must be able to prevent the ability to “change anyone else’s vote without being discovered.” EX1009, 125-126; EX1003, ¶¶ 229, 233. “Changing the vote” plainly relates to tabulation. The disclosures of Schneier are clear and Dr. Shamos thoroughly explains their applicability to Brockhouse and Nadaf in the context of the Challenged Claims. PO’s accusations to the contrary are not correct.

Further, the July 31 Stewart Memorandum regarding Rule 204 cited by PO explains that it “will apply to any **petition for IPR filed on or after September 1, 2025.**” EX2009, 3 (emphasis added). The Petition for PGR here was filed July 17, 2025. Accordingly, Patent Owner’s assertions regarding allegedly missing elements in the cited prior art are both incorrect for the reasons explained above and irrelevant.

**D. NONE OF THE *WORKLOAD MANAGEMENT* FACTORS
FAVOR DISCRETIONARY DENIAL³**

***1. Whether the PTAB or Another Forum Has Already
Adjudicated the validity or patentability of the claims***

The Board’s ‘966 FWD holding that the highly similar claims of the ‘966 Patent were not patentable was entered before the ‘319 Patent issued. *See* EX1015. This “tips the balance against discretionary denial.” *See Posco Co. v. Arcelormittal*, IPR2025-00370, Paper 10, at 3 (Stewart, June 25, 2025).

2. No Changes in the Law or New Judicial Precedent

This factor does not support discretionary denial. PO’s Brief does point to Deputy Commissioner Kim’s August 2025 Section 101 Memorandum (“101 Memo”), but the 101 Memo by its own terms does not “announce any new USPTO practice or procedure and is meant to be consistent with existing USPTO guidance.” EX2002, 1. The existing guidance includes: (1) MPEP §2106.04(a)(2)(II)(C), which identifies “voting, verifying the vote, and submitting the vote for tabulation” in the “managing personal behavior or relationships or interactions between people” categories of abstract ideas; and (2) MPEP §2106.04(a)(2)(III)(C)(1), which identifies voting as “performing a mental process on a generic computer.” Both are cited in the Petition. Petition at 30.

³ As there is no co-pending district court case or other parallel proceeding, Petitioner does not address the *Fintiv* factors herein.

3. The Merits of the Petition Are Strong

As explained above in Section II(A)(1), PO's assertion that the Board rejected Petitioner's ineligibility challenge in the '966 FWD is wrong. Likewise, PO's argument that a single line in the Petition explaining that the steps of OCR and confirming the accuracy of a PVR can be performed in the human mind is "facially incorrect" has no merit. *See* Br. at 18. Nadaf, for example includes a voting device (a "second 'tablet'") that "allows 'the voter to leave the polling station after comparing the two printed records of their vote, one in text and the other in a two-dimensional bar code.'" EX1015, 35. *See also* EX1007, 13:4-9, 15:1-3; EX1003, ¶ 215. Thus, the voter (a human) reads the voter readable text (akin to OCR'ing the PVR) and compares the voter readable text to the decoded bar code information using the "second tablet" to confirm the PVR is accurate. As the 101 Memo confirms, such "observations, evaluations, judgments, and opinions" are mental processes that "can practically be performed in the human mind." EX2002 at 2. *See also Voter Verified*, 887 F.3d at 1385-86.

PO's myopic focus on a single statement in the Petition about the "human mind" ignores that the Petition also explains the Challenged Claims "cover the judicial exceptions of organizing human activity, managing personal behavior, and mathematical concepts." Petition at 30. PO also omits reference to MPEP §2106(a)(2)(III)(C) and §2106(a)(2)(III)(C)(1), which as discussed in the preceding

section, clearly identify “voting, verifying the vote, and submitting the vote for tabulation” as abstract ideas and “performing a mental process on a generic computer.” Such are consistent with the clear direction of the Federal Circuit in *Voter Verified*, which is also discussed in the Petition at pages 32-35. Indeed, the Federal Circuit explained in *Voter Verified* that tabulating votes is one of the fundamental activities that has been the basis of our democracy for hundreds of years. *Voter Verified, Inc.*, 887 F.3d at 1385.

Lastly, the 101 Memo does not bolster the purported eligibility of the Challenged Claims as PO implies. *See* Br. at 17-18. The 101 Memo was sent to Technology Centers 2100, 2600, and 3600 and addresses examiners “in software related arts, including Artificial Intelligence and Machine Learning.” The ‘319 Patent was examined in Art Unit 2876, which is in Technology Center 2800. *See* EX1002 at 233. And the 101 Memo clearly states that it “is not intended to announce any new USPTO practice or procedure and is meant to be consistent with existing USPTO guidance.” EX2002, 1. The Board already concluded under the existing guidance that the very similar claims of the ‘966 Patent were directed to abstract ideas and that institution was warranted. EX1015.

4. Dr. Shamos’s Testimony Is Not Conclusory and Does Not Merely Fill Gaps

PO’s attack on Dr. Shamos for “discussing what constitutes the relevant knowledge of a POSITA” and a POSITA’s motivations to combine references

misses the mark. *See* Br. at 19. Petitioner’s reliance on Dr. Shamos for such points, which he supports with many citations, is proper. *See* 37 C.F.R. 42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (Aug. 24, 2022) (precedential).

Dr. Shamos’s testimony also does not provide evidentiary gap filling, which weighs against discretionary denial. *IRhythm*, IPR2025-00363, Paper 10, at 2-3. PO’s assertion the Petition relies “solely” on Dr. Shamos’s declaration to address the “temporal limitations” of the Challenged Claims is demonstrably incorrect. *See* Br. at 19-20. In short, PO recycles its assertions regarding § 322(a)(4), which are incorrect for the reasons discussed above in Section II(B). Again, Nadaf teaches that the comparison of datasets is completed before generating the CVR and Schneier teaches that the comparison can be done at any time to confirm the accuracy and integrity of the fingerprinted pre-image—*e.g.* the PVR in Brockhouse used to create the CVR. Dr. Shamos provides pages of explanation of these points in his declaration. EX1003, ¶¶ 229-233, 255-265. Dr. Shamos’s explanation and opinions are not “conclusory, hindsight statements.”

5. No Settled Expectations for the Recently Issued ‘319 Patent

As the Deputy Director has consistently explained:

Early challenges favor robust, predictable patent rights and weigh against discretionary denial. Further, petitions for post-grant review are favored because they must be filed no later than nine months from the grant of the patent (35 U.S.C. § 321(c)), are close in time to examination, and occur before expectations in the patent rights are strongly settled.

Toyota Motor Corp. v. Autoconnect Holdings LLC, PGR2025-00041, Paper 9 (Dir. Stewart, Sept. 8, 2025); *Geotab Inc. v. Fractus, S.A.*, PGR2025-00056, Paper 14 at 2-3 (Dir. Stewart, Oct. 17, 2025). And having successfully challenged the near identical claims of the ‘966 Patent, Petitioner had settled expectations that it would be permitted to challenge any claims in any patents related to the ‘966 Patent.

Furthermore, the parties are not involved in a parallel proceeding involving the ‘319 Patent, and there is thus no concern of inconsistent outcomes or significant duplication of efforts. This further counsels against discretionary denial. *Intas Pharm. Ltd. v. Atossa Therapeutics, Inc.*, PGR2025-00043, Paper 12 at 2 (Deshpande, Aug. 29, 2025).

III. CONCLUSION

For the reasons stated above and in the Petition, institution of review is proper.

Dated: October 31, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

It is hereby certified that on this 31st day of October, 2025, a copy of the foregoing document was served via electronic mail, as consented to by Patent Owner upon the following counsel of record:

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