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Paper 13
Date: April 1, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,

Petitioner,

v.

INTERDIGITAL, INC.,

Patent Owner.

IPR2024-01441
Patent 9,674,556 B2

Before JAMESON LEE, KRISTEN L. DROESCH, and LISA A. MURRAY, *Administrative Patent Judges.*

MURRAY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 325(d)

INTRODUCTION

Intel Corporation ("Petitioner") filed a Petition for *inter partes* review of claims 1–8 (the "challenged claims") of US Patent 9,674,556 B2 ("the '556 Patent"). Paper 2 ("Pet."); *see* Ex. 1001 ('556 Patent). InterDigital Inc. ("Patent Owner") timely filed a Preliminary Response. Paper 6 ("Prelim. Resp."). With the permission of the Board, Petitioner filed a Preliminary Reply, Paper 10, and Patent Owner filed a Preliminary Sur-Reply, Paper 12.

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a) (2023) ("The Board institutes the trial on behalf of the Director."). Section 325(d) of Title 35 of the United States Code provides that, in determining whether to institute an *inter partes* review, "the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office." Upon consideration of the evidence and arguments in the Petition (including its supporting testimonial evidence) as well as the evidence and arguments in the Preliminary Response (including its supporting testimonial evidence), the Preliminary Reply, and the Preliminary Sur-Reply, we determine that the same or substantially the same prior art or arguments were presented to the Office during prosecution of the '556 Patent and that Petitioner has not shown that the Office erred in a manner material to the patentability of the challenged claims. We thus determine not to institute an *inter partes* review of any of the challenged claims on any of the grounds alleged in the Petition.

A. Related Proceedings

The parties identify the following as matters that may affect, or be affected by, a decision in this proceeding:

> *Electronic Devices Including Smartphones, Computers, Tablet Computers, and Components Thereof*, Inv. No. 337-TA-1373 (USITC).
>
> *InterDigital, Inc. et al v. Lenovo Group Limited, et al*., 5-23-cv-00493 (EDNC).

Pet. 72–73; Paper 5 at 1 (Patent Owner's Mandatory Notices).

B. Real Parties in Interest

Petitioner identifies Intel Corporation, Lenovo Group Limited, and Lenovo (United States) Inc. as real parties in interest. Pet. 72. Patent Owner identifies InterDigital VC Holdings, Inc., the owner of the challenged patent, as a real party in interest. Paper 5 at 1 (Patent Owner's Mandatory Notices).

C. Evidence

Petitioner relies on the following patent evidence.

Name	Patent Document	Exhibit
Lee	US 2003/0219073 A1	1006
Chiang	US 2006/0110062 A1	1007
Lin	US 2003/0152146 A1	1008

Petitioner relies on the following non-patent literature evidence.

Name	Non-Patent Literature Title	Author	Exhibit
AAPA	Applicant Admitted Prior Art	Unknown	1001
VC1 Standard	SMPTE Standard: VC-1 Compressed Video Bitstream Format and Decoding Process, SMPTE 421M-2006 (Feb. 24, 2006)	Society of Motion Picture and Television Engineers	1009

Name	Non-Patent Literature Title	Author	Exhibit
Guleryuz	*A Nonlinear Loop Filter for Quantization Noise Removal in Hybrid Video Compression*, IEEE Int'l Conference on Image Processing (published Nov. 14, 2005)	Onur G. Guleryuz	1010

Additionally, Petitioner supports its challenge with a Declaration of Dr. Clifford Reader (Ex. 1003).

D. Prior Art and Asserted Grounds

Petitioner challenges the patentability of claims 1–8 of the '556 Patent on the following four grounds:

Claim(s) Challenged	35 U.S.C. §[1]	Reference(s)/Basis
1–8	103(a)	Lee
1–8	103(a)	Lee, AAPA
1–8	103(a)	Chiang, Lin
1–8	103(a)	VC1 Standard, Guleryuz

Pet. 4.

THE '556 PATENT

A. Technology at Issue

The '556 Patent is directed to methods and apparatus for in-loop de-artifact filtering. Ex. 1001, Title. When compressed images are decoded, undesired visual artifacts often remain. Claims 1–8 of the '556 Patent recite

[1] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. The '556 Patent has an effective filing date before March 16, 2013, *see, e.g.*, Ex. 1001, code (60), and, therefore, we apply the pre-AIA version of the statutory basis for unpatentability. Our determination, however, would be the same if the post-AIA version of the statute applied.

an improved method and apparatus for filtering these artifacts out of an image or video frame. *Id.* at 18:24–19:8. The apparatus includes an encoder for encoding an image region. The encoder has at least two filters for successively performing in-loop filtering to respectively reduce at least a first and a second type of quantization artifact. *See id.*, Abstr. The first filter is a deblocking filter, and the second is an adaptive sparse de-noising filter that can be selectively enabled or disabled. *See id.* at 18:24–35, 18:49–62 (claims 1, 5).

Figure 5 of the ’556 Patent is reproduced below.

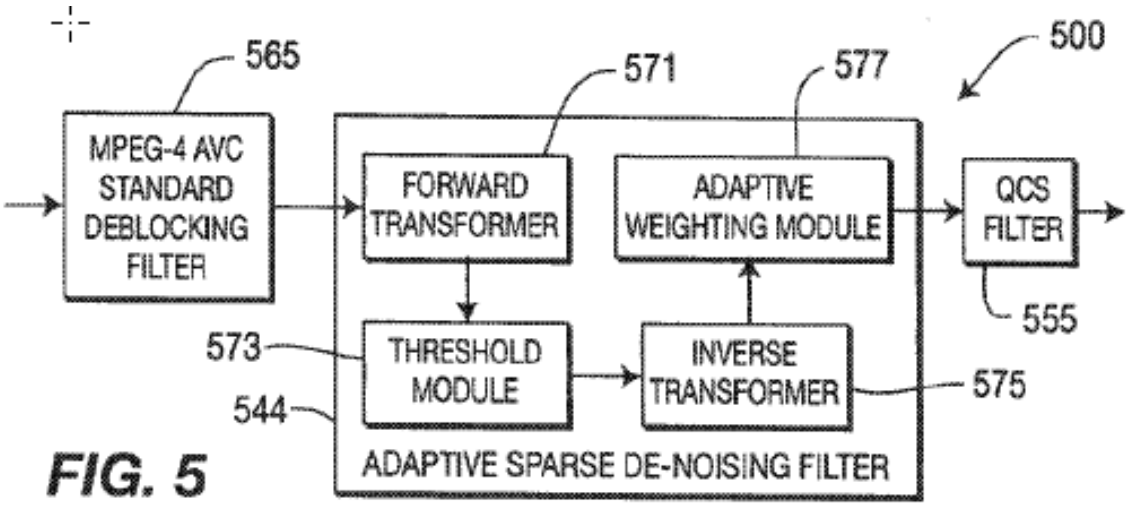

FIG. 5

Figure 5 shows a diagram for an exemplary succession of de-artifact filters, according to an embodiment of the invention. Ex. 1001 at 5:44–46, Fig. 5. In the diagram, element 565 is a standard deblocking filter, while element 544 is an adaptive sparse de-noising filter. *Id.* Fig. 5. A series of arrows illustrates that the deblocking filter is applied first and the adaptive sparse de-noising filter is applied second. *See id.* at 10:65–11:1, Fig. 5.

B. Illustrative Claim

The Petition challenges claims 1–8 of the '556 Patent. Claims 1 and 5 are independent claims that are commensurate in scope. Claims 2–4 depend from claim 1, while claims 6–8 depend from claim 9. Ex. 1001, 18:24–19:8. Claim 1 is illustrative of the claimed subject matter and is reproduced below with Petitioner's bracketing added for reference:

> **1[pre]** 1. A method comprising:
>
> **1[a1]** decoding an image region, wherein the decoding includes performing in-loop filtering to reduce at least a first and a second type of coding artifact using at least two filters in succession,
>
> **1[a2]** the at least two filters including a deblocking filter for performing a first pass to reduce blocking artifacts and an *adaptive sparse de-noising filter* for performing a second pass to reduce noise,
>
> **1[a3]** wherein the *adaptive sparse de-noising filter* is selectively enabled or disabled at a given level, the given level being at least a macroblock level, a slice level, a picture level or a sequence level.

Ex. 1001, 18:24–35 (emphasis added to disputed limitation); *see* Pet. vii (indicating Petitioner's bracketing).

CLAIM CONSTRUCTION

Both Petitioner and Patent Owner argue that the Board can determine whether to grant or deny institution without construing any claim terms. Pet. 16; Prelim. Resp. 17. They represent, however, that the construction of the term "sparse de-noising filter" is contested in the co-pending investigation under 19 U.S.C. § 1337 at the U.S. International Trade Commission ("ITC"). Pet. 13; *see* Prelim. Resp. 6–8. In that litigation, four constructions were proposed for that term: ITC Complainants' proposal, ITC

Respondents' preferred proposal, ITC Respondents' alternative proposal, and the ITC Investigative Staff's proposal. Ex. 1025, 13–30 (Staff's *Markman* Br.); Ex. 1032, 68–82 (Resps.' *Markman* Br.); Ex. 1033, 6–38 (Compls.' Corr. *Markman* Br.); *see* Pet. 14; Prelim. Resp. 8.

Petitioner agrees with the ITC Respondents' alternative proposed construction: "a filter which exploits a sparse image model using an over complete set of linear transforms and hard thresh-holding, which is not a deringing filter." Pet. 16. Petitioner further asserts that the construction proposed by the ITC Complainants (including Patent Owner) is: "a filter that reduces noise based on a sparse signal." *Id.* at 17; Ex. 1003 ¶ 132 (Reader Decl.) ("[I]t appears that PO reads out the word 'representation' from its own construction.")

Patent Owner disagrees with this characterization of its proposal before the ITC and states that its proposed construction of "sparse de-noising filter" is the plain and ordinary meaning of the term, i.e., "a filter that reduces noise based on a *sparse representation* of the signal." Prelim. Resp. 6 (emphasis added). Patent Owner explains that a "sparse signal" and a "sparse representation of the signal" are two very different things,[2] and denies that it proposes to construe the disputed term as "a filter that reduces noise based on a sparse signal[.]" Prelim. Resp. 12–17.

[2] Patent Owner's expert, Dr. Iain Richardson, defines a "sparse representation" as "a perspective of the input signal in which certain components of the signal can be more easily discriminated to separate the original signal (before being corrupted by noise) from the noise . . . this sparse representation must still represent the input data." Prelim. Resp. 15; Ex. 2001 ¶¶ 45–51 (Richardson Decl.).

Petitioner's misunderstanding of Patent Owner's proposed construction is relevant here in that Petitioner concedes that the challenged claims are only unpatentable under asserted Grounds 1A and 2 if the Board adopts the Patent Owner's claim construction, as Petitioner understands it.[3] Pet. 20, 43; *see* Prelim. Resp. 10–12. Petitioner believes that construction to be incorrect, and Patent Owner states that the construction does not reflect its position, either. Pet. 16–17; Prelim. Resp. 12–17. This is different from the situation where a petitioner submits alternative claim constructions for the Board's review, one supported by the petitioner and the other by the patent owner. *See*, *e.g.*, *10x Genomics, Inc. v. Bio-Rad Labs., Inc.*, IPR2020-00086, Paper 8 at 22 (PTAB Apr. 27, 2020) (granting institution).[4] Here, Grounds 1A and 2 rely on a claim construction that *no* party advocates before the Board. This alone would be sufficient reason for us to exercise our discretion to deny institution based on either of these asserted grounds.[5]

[3] This is because the prior art references asserted in Grounds 1A and 2 teach a deringing filter. Ex. 1006 ¶¶ 9–12 (Lee); Ex. 1007 ¶ 29 (Chiang). Petitioner argues that Patent Owner disclaimed deringing filters to overcome a rejection based on Lee during prosecution of the parent application to the '556 Patent. Pet. 15; Ex. 1003 ¶ 130. Petitioner argues that "[t]his was an express disclaimer, which carries forward to the '556 Patent." Pet. 15.

[4] *See also Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, IPR2024-00952, Paper 12 at 8 (PTAB Dec. 13, 2024) (informative) (While "our rules do not necessarily prohibit petitioners from taking inconsistent claim construction positions before the Board and a district court[,]" institution was denied where petitioner failed to explain its reasons for advocating a construction not advanced by either party in district court and failed to provide the Board with any means-plus-function construction for the Board's consideration.)

[5] We also have no reason to construe the term that way.

Nevertheless, we determine that for current purposes we do not need to resolve the claim construction dispute between the parties. *See*, *e.g.*, *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). For the reasons discussed below, no matter which claim construction was adopted for the disputed term, under the framework set forth in *Advanced Bionics*[6] and the factors identified in *Becton Dickinson*[7] we would deny the Petition under 35 U.S.C. § 325(d).

DISCRETIONARY DENIAL

A. Legal Standard—35 U.S.C. § 325(d)

In determining whether to institute an *inter partes* review, "the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. § 325(d). The Board uses a two-part framework for evaluating arguments under Section 325(d):

> (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
>
> (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the

[6] *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential).

[7] *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph).

> Office erred in a manner material to the patentability of the challenged claims.

Advanced Bionics, Paper 6 at 8.

When applying this framework, we consider the *Becton, Dickinson* factors that address the Board's discretion to deny institution when a petition presents the same or substantially the same prior art or arguments previously presented to the Office, including:

> (a) the similarities and material differences between the asserted art and the prior art involved during examination;
>
> (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
>
> (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
>
> (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
>
> (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
>
> (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18. Factors (a), (b), and (d) relate to whether the same or substantially the same art or arguments were previously presented to the Office, and factors (c), (e), and (f) relate to whether a petitioner demonstrates that the Office erred in a manner material to the patentability of the claims. *Advanced Bionics*, Paper 6 at 9–11. Only if the same or substantially the same art or arguments were previously presented to

the Office do we then consider whether the petitioner has demonstrated a material error by the Office. *Id.*

B. Analysis

1. Advanced Bionics Step One

"[T]he first part of the *Advanced Bionics* framework is satisfied if either substantially the same prior art *or* substantially the same arguments were previously presented to the Office." *Nokia of America Corp. v. Alexander Soto and Walter Soto*, IPR2023-00680, Paper 18 at 4 (PTAB Mar. 4, 2024) (Director Review) (emphasis in original). "Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent." *Advanced Bionics*, Paper 6 at 7–8.

a) The Prosecution History

The '556 Patent issued from U.S. Patent Application No. 14/981,345, which is a continuation of Application No. 12/312,386, filed as PCT/US2007/022795 on Oct. 25, 2007 and issued as US Patent No. 9,277,243 ("the '386 Application"). Ex. 1001 (code 63). As Petitioner describes it, "[t]he '556 Patent issued after minor amendments not relevant to the grounds in this Petition and a terminal disclaimer to U.S. 9,277,243." Pet. 8; Ex. 1002 ('556 Patent file history). The '386 Application, however, was the subject of several rejections that Petitioner states are "relevant to this Petition[.]" Pet. 8; Ex. 1005 ('386 Application file history).

Of particular relevance is the January 2, 2014, rejection of all pending claims as anticipated by the Lee reference asserted in the current Petition.[8] In that rejection, the Examiner mapped Lee's deringing filter to the recited "sparse de-noising filter." Ex. 1005, 257–259; Pet. 9; *see* Prelim. Resp. 4 ("The Examiner mapped Lee's deringing filter to the claimed 'sparse de-noising filter' *just as Petitioner's Ground 1A does*."). In response, Applicant argued that "[w]hile the cited portions of Lee may disclose deringing filtering, Lee does not disclose or suggest *a sparse de-noising filter for performing a second pass to reduce noise.*" Ex. 1005, 287; Pet. 10. The Examiner agreed, concluding that "Lee discloses an adaptive deringing filter (de-noising filter) . . . but does not disclose that the de-noising filter is a sparse filter." Ex. 1005, 304; Prelim. Resp. 4.

The Examiner then stated that even so, "it would have been obvious . . . to use the teachings of the Applicant's Admitted prior art to modify the apparatus of Lee by using a sparsity based de-noising filter[.]" Ex. 1005, 304; Pet. 10; Prelim. Resp. 4 ("[T]he Examiner asserted it would be obvious to replace Lee's deringing filter with the prior art filter from the '386 Application's specification background, *just as Petitioner's Ground 1B does*.").

In response to the Examiner's rejection over Lee and the Applicant Admitted Prior Art ("AAPA"), the Applicant filed a notice of appeal and a pre-appeal brief that argued, in relevant part, that the AAPA teaches away from the proposed combination with Lee. Ex. 1005, 320; *see* Pet. 10. The AAPA contains a statement that "sparsity based de-noising techniques . . .

[8] An earlier anticipation rejection was based on the parent application to the currently asserted Lee reference. *See* Pet. 9; Ex. 1005, 171–175.

present important visual artifacts that need to be addressed." Ex. 1001 at 2:43–47; *see* Ex. 1005, 320. Applicant argued that while the AAPA mentions sparsity-based de-noising, "it does so for the very purpose of pointing out why one skilled in the art would not consider using sparsity-based denoising as proposed by the combination asserted in the rejections. Ignoring this fundamental teaching-away is clear error in the rejections under § 103(a)." Ex. 1005, 321; *see* Prelim. Resp. 5. The Examiner did not respond to this argument, but issued a notice of allowance after the Applicant amended the claims to recite an "*adaptive* sparse de-noising filter."[9] Ex. 1005, 342, 359.

b) Lee, the AAPA, and Guleryuz

The AAPA at issue is located in the Background section of the '386 Application. Ex. 1005, 95–96 (standard deblocking filters), 96–97 (sparse de-noising filters), 304 (citation by Examiner). Patent Owner persuasively argues that this AAPA is the same as the Guleryuz reference asserted in Ground 3 of the Petition.[10] Prelim. Resp. 4–5 ("[T]he '386 Application's (and '556 Patent's) provisional application . . . explicitly indicates that the filter being described at those passages is a filter proposed by Onur G. Guleryuz in . . . the Guleryuz reference relied upon by Petitioner[.]"); *see* Ex. 1005, 137 ("In order to overcome the limitations of H.264 deblocking filtering, recently, a denoising type nonlinear in-loop filter has been proposed by Onur G. Guleryuz . . ."); *compare* Ex. 1001 at 2:4–47 ("In order

[9] This was followed by a Request for Continued Examination and continued prosecution of other claims not challenged in the current Petition. *See* Ex. 1005, 378–526.

[10] Guleryuz was also cited in an IDS during prosecution. *See* Pet. 69–70.

to overcome the limitations of the MPEG-4 AVC Standard deblocking filter, an approach has been recently proposed involving a de-noising type nonlinear in-loop filter.")

Based on the evidence currently before us, we determine that the AAPA asserted in Ground 1B is "the same or substantially the same prior art" as the Guleryuz reference asserted in Ground 3. Thus, Lee, the AAPA, and Guleryuz were all previously presented to the Office, were expressly evaluated during examination, and formed the basis for one or more rejections of the claims that subsequently issued as claims 1–8 of the '556 Patent. We further determine that the arguments Petitioner makes in support of Grounds 1A and 1B substantially overlap with the arguments concerning Lee and the AAPA that were made during examination and overcome by the Applicant. *Compare* Pet. 20–34 *with* Ex. 1005, 257–259; *compare* Pet. 34–43 *with* Ex. 1005, 304. Accordingly, Step 1 of the *Advanced Bionics* framework is satisfied for Grounds 1A and 1B.

c) Chiang, Lin, and the VC1 Standard

It is undisputed that Chiang, Lin, and the VC1 Standard were not presented to the Examiner during prosecution. Patent Owner argues, however, that they are cumulative of the prior art considered by the Examiner. Prelim. Resp. 63–66. *Becton, Dickinson* factors (a), (b), and (d) are particularly relevant here. *See Becton, Dickinson*, Paper 8 at 17–18. Factors (a) and (b) consider whether the asserted art is cumulative of the prior art involved in the examination or whether there are material differences between the two. *Id.* Factor (d) considers the extent of the overlap between the arguments made during examination and those asserted in this proceeding. *Id.*

Patent Owner asserts that Chiang is cumulative to Lee.[11] Prelim. Resp. 64–66. Like Lee, Chiang is cited as teaching an edge adaptive filtering system (i.e., a deringing filter) implemented in conjunction with a deblocking filter. Pet. 43; *see* Ex. 1007 ¶¶ 5, 29, 41. The evidence shows that Chiang describes a de-blocking filter that may be implemented in-loop, and it describes a deringing filter that may be implemented in-loop. Ex. 1007 ¶¶ 34, 40. Unlike Lee, however, Chiang does not describe an embodiment in which *both* the de-blocking filter and the deringing filter are in-loop and processed in succession, as recited in the challenged claims. Instead, "[a]s Petitioner admits, 'much of Chiang's subsequent explanation regarding application of its filters focuses on an embodiment in which the filters are applied *outside* of the decoding loop.'" Prelim. Resp. 43 (quoting Pet. 46). The Petition attempts to overcome this by arguing that a person of ordinary skill in the art "would have understood that Chiang teaches applying the same order of filters in-loop." Pet. 46; *see* Ex. 1003 ¶¶ 225–226. The fact remains, however, that this aspect of the challenged claims is taught explicitly in Lee, *see* Ex. 1006 ¶ 31, but is, at best, implied in Chiang. The evidence shows that Lee is the stronger reference. Chiang is relied upon to teach the same limitations as Lee, but Chiang does not add anything new that would support allowing Petitioner to revisit an argument already

[11] In the Petition, Lin is asserted in combination with Chiang as teaching selectively enabling or disabling a filter. Pet. 44. Petitioner asserts that Chiang also teaches selectively enabling or disabling filtering. *Id.* at 43–44; *see* Ex. 1003 ¶ 122. Patent Owner does not contest either of these assertions. Because Lin and Chiang are cited in combination and are relied upon to teach the same limitation of challenged claim 1, we view Lin as cumulative of Chiang for the purposes of our Section 325(d) analysis.

considered by the Examiner. Thus, based on the record before us we agree with Patent Owner that Chiang is cumulative of Lee.

Similarly, the evidence shows that the VC1 Standard is relied upon to teach the same limitations as Lee when Lee is combined with Guleryuz (i.e., the AAPA), but that the VC1 Standard is a weaker reference that does not add anything new to the discussion. The VC1 Standard discloses a decoding process that includes an in-loop deblock filtering process. Pet. 57; *see* Ex. 1009, 178–188. Petitioner argues that "a POSITA would have been motivated to combine the teachings of the VC1 Standard and Guleryuz by applying Guleryuz's in-loop denoising filter after the VC1 Standard in-loop deblock filter." Pet. 58; Ex. 1003 ¶ 269. Petitioner further argues that "[w]hile the VC1 Standard contemplates a post-processing deringing filter to remove ringing artifacts, a POSITA would have recognized the benefit of using a second in-loop filter after VC1's in-loop deblock filter in order to improve the decoding process by providing higher quality reference frames during the decoding loop." Pet. 58 n.6; Ex. 1003 ¶ 269. Thus, as with Chiang, in order to fit the teachings of the VC1 Standard to the limitation recited in the challenged claims, Petitioner is forced to rely on an argument about the understanding and motivations of one of ordinary skill in the art, whereas Lee's similar teachings are stated expressly. *See* Ex. 1006 ¶ 31. Based on the evidence before us, we determine that the VC1 Standard is cumulative of Lee.

The evidence shows that the Examiner considered Lee and the AAPA at length, which are substantially the same on the points extracted by Petitioner from Chiang and Lin and from the VC1 Standard and Guleryuz. Petitioner's declarant does not provide further evidence that would support

revisiting these substantially similar art and arguments. We determine, therefore, that Chiang, Lin, and the VC1 Standard are substantially the same prior art as that presented to the Examiner and are used in the Petition to make the same or substantially the same arguments as those considered during prosecution. Accordingly, Step 1 of the *Advanced Bionics* framework is satisfied for Grounds 2 and 3.

2. Advanced Bionics Step Two

Under the *Advanced Bionics* framework, "if either condition of the first part of the framework is satisfied," the Board will consider "whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims." *Advanced Bionics*, Paper 6 at 8. We have determined that Step 1 of the *Advanced Bionics* framework is satisfied for all four of the grounds presented in the Petition. We therefore must consider for each ground whether Petitioner has shown that the Examiner erred, bearing in mind that "[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability." *Id.* at 9. Petitioner bears the burden of demonstrating material error. *Id.* at 8.

For Ground 1A, Petitioner argues that "the Examiner did not consider PO's proposed construction of 'sparse denoising filter' during prosecution. If the Board adopts that construction here, the Examiner erred in allowing the Challenged Claims over Lee[.]" Pet. 70. Petitioner is referring to its own understanding of Patent Owner's proposed construction: "a filter that reduces noise based on a sparse signal." *See id.* at 17; Ex. 1003 ¶ 132 (Reader Decl.). As discussed above, Patent Owner rejects this characterization of its proposed construction and asserts that its actual

proposal is: "a filter that reduces noise based on a sparse representation of the signal." Prelim. Resp. 6, 12–17. Thus, Petitioner is arguing that the Examiner erred by not considering a claim construction that no one, including Petitioner, believes to be correct. We do not find this argument persuasive.

For Ground 1B, Petitioner argues that the Examiner erred in allowing the challenged claims over Lee in view of the AAPA "because the Lee-AAPA combination renders obvious all of the Challenged Claims regardless of the adopted construction of 'adaptive sparse denoising filter.'" Pet. 71; *see* Ex. 1003 ¶¶ 178, 188–191. Petitioner contends that "neither Applicant's argument that the AAPA taught away from use of a sparse denoising filter nor Applicant's amendment to add 'adaptive' to the claim term should have overcome the Examiner's rejection based on the Lee-AAPA combination." Pet. 71. Patent Owner argues that Petitioner has not shown this was error because "Petitioner never analyzed the teaching away in Ground 1B of its Petition and its expert does not explain why there would be a motivation to combine in the face of it." Prelim. Resp. 68. In contrast, Patent Owner's expert, Dr. Richardson, explains why a POSITA would *not* combine the references "given the strong teaching in the Guleryuz reference that the '556 Patent's AAPA addresses."[12] *Id.*; *see* Ex. 2001 ¶¶ 70–94.

Based on our review of the record, we determine that Petitioner's arguments do not meet its burden of demonstrating material error. To meet that burden, "Petitioner must demonstrate that the Examiner erred in the

[12] Guleryuz teaches, among other things, that "it is very beneficial to have a *single* filtering solution that is applicable in the general case." Ex. 1010, 1 (emphasis added).

evaluation of the prior art, for example, by showing that the Examiner misapprehended or overlooked *specific* teachings in the relevant prior art such that the error by the Office was material to the patentability of the challenged claims." *Advanced Bionics*, Paper 6 at 21 (emphasis added). Petitioner does not identify any specific teachings in the prior art that were "misapprehended or overlooked," but instead simply restates its merits argument, which mirrors the reasoning overcome during examination. This is not a case where the prior art reads so strongly on the claims at issue that the obviousness of those claims should have leapt out at the Examiner. On the contrary, in this case the AAPA teaches that "sparsity based denoising techniques . . . may present important visual artifacts that need to be addressed." Ex. 1001 at 2:43–47. This could suggest that, as Patent Owner argues, one of ordinary skill in the art would not have been motivated to add a sparse denoising filter to the standard in-loop blocking filter found in Lee. Prelim. Resp. 68. At a minimum, it appears that "reasonable minds can disagree" regarding the purported treatment of the AAPA art or arguments, and therefore "it cannot be said that the Office erred in a manner material to patentability." *See Advanced Bionics*, Paper 6 at 9.

For Ground 2, Petitioner does not identify any Examiner error relating to Chiang and Lin, which were not presented to the Examiner. Petitioner's only argument regarding Ground 2 is that "considering the entirety of the Grounds in this Petition, the same or substantially the same art or arguments were not previously presented to or considered by the Office; there is no need to go to *Advanced Bionics* part two." Pet. 70. By definition, this argument does not establish that the Examiner erred.

Finally, for Ground 3, the only error asserted is that "Guleryuz was cited in an IDS during prosecution of the parent application. However, the Examiner did not apply Guleryuz in a rejection or consider it in combination with the VC-1 standard." Pet. 72. As discussed above, we are persuaded by Patent Owner's argument that the AAPA's discussion of a prior art approach to overcoming the limitations of a standard deblocking filter is in fact a reference to the Guleryuz prior art cited in the IDS during prosecution of the '386 Application. *See* Ex. 1005, 137. As discussed above, the Examiner expressly considered and applied the AAPA/Guleryuz reference during examination. *Id.* at 304. Moreover, as previously discussed, the VC1 Standard is cumulative of Lee. There would have been no reason for the Examiner to separately apply both the Lee-AAPA/Guleryuz combination and the VC1 Standard-AAPA/Guleryuz combination, as they are substantially the same. Petitioner's statement of error thus is not supported by the evidence.

CONCLUSION

Using the *Advanced Bionics* framework, we have determined that each of the four grounds for challenge asserted in the Petition rely on prior art or arguments that were previously presented to the Office during examination. We have further determined that Petitioner has not shown that the Examiner erred in a manner material to the patentability of claims 1–8 of the '556 Patent. We therefore conclude that it is appropriate to exercise our discretion under 35 U.S.C. § 325(d) to deny institution of an *inter partes* review on any of the asserted grounds as to any of the asserted claims.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied as to all challenged claims of the ’556 Patent.

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