

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.

Petitioner,

v.

ADVANCED CODING TECHNOLOGIES, LLC

Patent Owner.

Patent No. 6,845,128

Filing Date: February 8, 2002

Issue Date: January 18, 2005

Inventor: Kenji Sugiyama

Title: VIDEO-EMPHASIS ENCODING APPARATUS
AND DECODING APPARATUS AND METHOD OF
VIDEO-EMPHASIS ENCODING AND DECODING

PATENT OWNER'S PRELIMINARY RESPONSE

Case No. IPR2024-00062

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Exhibit No.	Description of Document
2001	Second Amended Docket Control Order, Dkt. 84, <i>Advanced Coding Techs. LLC v. Samsung Elecs. Co.</i> , Case No. 2:22-cv-00499-JRG (E.D. Tex. Feb. 21, 2024)
2002	Defendants' Joint Patent L.R. 3-3 Invalidity Contentions and Subject Matter Ineligibility Contentions, <i>Advanced Coding Techs. LLC v. Samsung Elecs. Co.</i> , Case No. 2:22-cv-00499-JRG (E.D. Tex.), served Feb. 21, 2024
2003	Defendants' Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.'s P.R. 4-2 Preliminary Claim Constructions with Evidence, <i>Advanced Coding Techs. LLC v. Samsung Elecs. Co.</i> , Case No. 2:22-cv-00499-JRG (E.D. Tex.), served Feb. 6, 2024

I. INTRODUCTION

On November 22, 2023, Samsung Electronics Co., Ltd. (“Petitioner” or “Samsung”) submitted a Petition (Paper 2, “Petition” or “Pet.”) to institute *inter partes* review (“IPR”) of U.S. Patent No. 6,845,128 (Ex. 1001, the “’128 Patent”), challenging claims 1-6 and 8 (the “Challenged Claims”). The Petition asserts that (i) Claims 1-6 and 8 are rendered obvious by U.S. Patent No. 5,491,514 (“Ex. 1005” or “Fukuda”); (ii) Claims 1-4 are rendered obvious over Fukuda and U.S. Patent No. 5,241,387 (“Ex. 1006” or “Fujikawa”); and (iii) Claims 1-6 and 8 are obvious by U.S. Patent No. 6,801,665 (“Ex. 1007” or “Atsumi”). Pet. at 1. The Board should deny the Petition for at least the reasons described briefly below.

Petitioner’s assertion that “no formal claim constructions are necessary” in this proceeding contradicts its positions in the parties’ co-pending district court litigation. If Petitioner believed that any claim terms required construction, it had a duty to identify “how the challenged claim is to be construed” in its Petition. For the purposes of this Preliminary Response, Patent Owner does not dispute that Petitioner’s proposed constructions in the district court action should be applied in this proceeding. Under these proposed constructions, the claims require at least setting an “emphasis level,” that is setting “a value that represents the amount by which the amplitude of the high frequency components of a video signal is increased.” Petitioner fails to show any disclosure in Fukuda, Fukuda in combination

with Fujikawa, or Atsumi of increasing the amplitude of the high frequency components of a video signal or any value representing the amount of such increase, as required by Claim 1.

Petitioner fails to show that Fukuda, Fukuda in combination with Fujikawa, or Atsumi disclose at least “setting an emphasis level to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” as required by Claim 1 of the ’128 Patent. In particular, while the claim limitation requires that an emphasis level is set in accordance with “at least one factor,” Petitioner nonetheless fails to show how any of the cited references, alone or in combination, disclose all three factors among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” as required by Claim 1.

The Board should exercise its discretion to deny the Petition under 35 U.S.C. § 314(a) for at least the following reasons: (i) there exists a parallel District Court Litigation between the same parties or real-parties-in-interest; (ii) the District Court Litigation involves the same subject patent (the ’128 Patent) with substantially the same claims; (iii) the District Court’s trial will be *over seven months before* the projected statutory deadline; (iv) the parties have heavily invested in the District Court Litigation and a trial date is set for October 7, 2024; and (v) there is no stay of

the parallel District Court Litigation.

II. THE '128 PATENT

The '128 Patent is “relate[d] to a video-emphasis encoding apparatus and a method of video-emphasis encoding for applying an emphasis processing to input video signals and encoding the emphasized signals to obtain video bitstreams. Moreover, this invention relates to a video-emphasis decoding apparatus and a method of video-emphasis decoding for decoding the video bitstreams.” '128 Patent, 1:8-14.

Prior to the claimed invention, the '128 Patent notes that the prior art had the following drawbacks:

The emphasis processing is applied to video signals with no emphasis-level control. The emphasis data transferred to the video-deemphasis decoding apparatus indicates only whether or not the emphasis processing has been applied to video signals.

An overrange condition thus often occurs to input video signals when the video signals have already been applied the enhancement processing.

Narrow quantization step width for quantization of the input video signals in video-emphasis encoding often causes increase in codes generated against noise elimination.

Moreover, videos signals reproduced by the video-deemphasis decoding apparatus are sometimes unsuitable for the enhancement processing at a display apparatus for displaying the reproduced video signals.

Id., at 2:28-43.

The '128 Patent is explicit that “emphasis processing,” as used in Claims 1 and 4 of the '128 Patent, applies to the high-frequency components of a video signal:

An emphasis processing is a known technique widely used in storage and transfer of video and audio signals. In detail, an emphasis circuit gives ***emphasis effects on high-frequency components*** of video or audio signals before storage and transfer.

Id., 1:16-20 (emphasis added).

The '128 Patent is also clear that emphasis processing involves increasing the amplitude of the high-frequency components of a video signal, such as through multiplying the high-frequency component by a quantized emphasis value and then adding the result of the multiplication to the input video signal so as to increase the high-frequency component of that signal:

The high-frequency component of the video signal is supplied to a multiplier 7 for multiplication with an emphasis value Ee (0 to 1.0) supplied from an emphasis controller 11, which will be explained later. The high-frequency component multiplied by the emphasis value Ee is supplied to an adder 2. The Ee-multiplied high-frequency component is ***added to the input video signal*** for high-frequency component emphasis processing.

Id., 4:51-58 (emphasis added).

The '128 Patent also describes that “emphasis level” is a value that represents the amount of amplitude increase. For example, the '128 Patent describes an

embodiment where “[t]he emphasis controller 11 sets an emphasis level (the emphasis value E_e),” and E_e is a value that is multiplied to the high-frequency components and then added to the input video signal, which results in an amplitude increase for the high-frequency components of that video signal. *Id.*, 5:40-41.

The ’128 Patent further explains that the purpose of the emphasis level is to increase the amplitude of a video signal’s high-frequency components by a certain amount that can be dependent on a desired advantage (*i.e.*, higher emphasis levels for less generation of block distortion and mosquito noises and lower emphasis levels for less generation of codes and also less occurrence of an overrange condition):

In detail, the emphasis-level settings are performed as the wider the quantization step width, the higher the emphasis level for less generation of block distortion and mosquito noises whereas the narrower the quantization step width, the lower the emphasis level for less generation of codes and also less occurrence of an overrange condition.

Id., 4:5-10.

The emphasis level can be set in accordance with at least one of three factors:

[C]ontrol data such as emphasis-level designating data carried by input video signals (not disclosed in the foregoing embodiments);

[P]icture state such as the degree of enhancement effects on input video signals, which can be detected from the input video signals; and

[E]ncoding conditions for the input video signals such as the degree of quantization applied to the video signals in encoding.

Id., 8:33-45.

The claimed invention, including setting emphasis levels in accordance with at least one of three factors gives the present invention the following advantages:

(a) Emphasis-level settings in accordance with at least one of three factors such as control data carried by input video signals, picture state detected from the input video signals and encoding conditions for the input video signals provide high image quality after decoding and reproduction while restricting occurrence of an overrange condition and increase in generated code amounts in emphasis processing.

(b) High-level emphasis processing to video signals quantized at a wide quantization step width (a degree of quantization detected as video-signal encoding conditions) provides pictures with less block distortion and mosquito noises. On the contrary, low-level emphasis processing to video signals quantized at a narrow quantization step width (another degree of quantization detected as video-signal encoding conditions) provides pictures with restricted overrange condition and code amounts in emphasis processing.

(c) Low-level emphasis processing to video signals at high-enhancement levels (detected from the video signals) provides pictures with restricted overrange condition and code amounts in emphasis processing and also less block distortion and mosquito noises.

Id., 8:46-9:2.

III. THE ALLEGED PRIOR ART

A. Fukuda

Fukuda “relates to coding apparatus, decoding apparatus, coding-decoding apparatus for video signals, and optical disk conforming thereto, useful for transmission, recording and reproduction of video signals.” Ex. 1005, 1:9-12.

Fukuda describes that it is directed to reducing coding noise:

It is hence a primary object of the invention to present coding apparatus, decoding apparatus, coding-decoding apparatus for video signals, and optical disks suited to them, being effective for reducing coding noise to deteriorate the picture quality, generated in the compressing and coding process of video signals.

Id. at 1:51-56.

B. Fujikawa

Fujikawa “relates to an encoding noise reduction filter which is applicable to a decoded digital video signal obtained from a digital video signal encoding/decoding apparatus utilizing orthogonal transform processing.” Ex. 1006, 1:7-12.

Fujikawa describes a few problems with the prior art techniques that it seeks to address:

[J]udging those picture elements that are to be subjected to the smoothing filtering is complex, and requires large amounts of processing. Moreover, due to the fact that no parameter is used in that judgement which expresses the overall quality of the picture expressed by the digital video

signal, it is difficult to control the filter operation in accordance with picture quality.

Id., 2:47-55.

To rectify, these problems, for example, one aspect of Fujikawa is disclosing a “high frequency emphasis section 3” that “separates the high spatial frequency components . . . from the low spatial frequency components, and converts to the value zero all of those picture element values contained in the high spatial frequency components which are below a predetermined threshold value.” *Id.*, 5:6-43.

C. Atsumi

Atsumi relates to “a method and apparatus for encoding images for transmission or storage where a region of interest (ROI) or certain regions of the image are to be emphasized and for decoding the encoded image after transmission or retrieval from storage.” Ex. 1007, 2:56-60.

Atsumi’s method and apparatus is directed to regions of an image to emphasized rather than high frequency components, which are not discussed throughout the entirety of Atsumi’s patent specification. *See generally id.*

IV. PETITIONER IMPROPERLY FAILS TO IDENTIFY HOW THE CHALLENGED CLAIMS ARE TO BE CONSTRUED

Petitioner’s assertion that “no formal claim constructions are necessary” in this proceeding (Pet. at 2) contradicts its positions in *Advanced Coding Techs. LLC v. LG Elecs., Inc.*, Case No. 2:22-cv-00501-JRG (E.D. Tex.) (the “District Court

Action”). In the District Court Action, Petitioner proposed the following constructions:

Claim Term	Claims	Proposed Construction
“emphasis processing”	1 and 4	“increasing the amplitude of the high frequency components of a video signal”
“emphasis level”	1-4	“a value that represents the amount by which the amplitude of the high frequency components of the video signal is increased.”

Ex. 2003, at A-1, A-2. These constructions expressly limit “emphasis processing” and “emphasis level” to high--frequency components of a video signal. The Petition does not assume that the plain and ordinary meaning of these terms is so limited, and the Petition’s analysis of the claim limitations containing these terms against the cited references does not indicate that those references disclose these limitations under Petitioner’s proposed constructions in the District Court Action.

If Petitioner believed that any claim terms required construction, it had a duty to identify “how the challenged claim is to be construed” in its Petition. 37 C.F.R. § 42.104(3); *see also* Patent Trial and Appeal Board Consolidated Trial Practice Guide, at 48 (“The Board, in its claim construction determinations, will consider statements regarding claim construction made by patent owners and by a petitioner filed in other proceedings, if the statements are timely made of record.”) (citations

omitted). Instead, Petitioner chose to apply the plain and ordinary meaning in this case, while simultaneously proposing narrowing constructions in the District Court Action. Petitioner's gamesmanship should not be countenanced by the Board. Petitioner's proposed constructions in the District Court Action should be applied in this proceeding.

For the purposes of this Preliminary Response, Patent Owner does not dispute that Petitioner's proposed constructions in the District Court Action should be applied in this proceeding. Moreover, Patent Owner intends to agree to Petitioner's proposed constructions in the District Court Action. As such, it is highly likely that the District Court will enter the agreed constructions. Patent Trial and Appeal Board Consolidated Trial Practice Guide, at 47 (citations omitted) ("Parties should submit a prior claim construction determination by a federal court or the ITC in an AIA proceeding as soon as that determination becomes available. Preferably, the prior claim construction determination should be submitted with the petition, preliminary response, or response, along with explanations. Submission of a prior claim construction determination is mandatory under 37 C.F.R. § 42.51(b), if it is 'relevant information that is inconsistent with a position advanced by the party during the proceeding.'").

A. “Emphasis Processing”: “increasing the amplitude of the high-frequency components of a video signal”

The '128 Patent is explicit that “emphasis processing,” as used in Claims 1 and 4 of the '128 Patent, applies only to the high-frequency components of a video signal:

An emphasis processing is a known technique widely used in storage and transfer of video and audio signals. In detail, an emphasis circuit gives *emphasis effects on high-frequency components* of video or audio signals before storage and transfer.

'128 Patent, 1:16-20 (emphasis added).

The '128 Patent is also clear that emphasis processing involves increasing the amplitude of the high-frequency components of a video signal, such as through multiplying the high-frequency component by a quantized emphasis value and then adding the result of the multiplication to the input video signal so as to increase the high-frequency component of that signal:

The high-frequency component of the video signal is supplied to a multiplier 7 for multiplication with an emphasis value Ee (0 to 1.0) supplied from an emphasis controller 11, which will be explained later. The high-frequency component multiplied by the emphasis value Ee is supplied to an adder 2. The Ee-multiplied high-frequency component is *added to the input video signal* for high-frequency component emphasis processing.

'128 Patent, 4:51-58 (emphasis added).

As noted above, in the District Court Action, Petitioner has agreed that emphasis processing involves increasing the amplitude of the high-frequency components of a video signal. Ex. 2003, at A-1.

B. “Emphasis Level”: “a value that represents the amount by which the amplitude of the high-frequency components of a video signal is increased”

As noted above in Section IV.A, “emphasis processing” relates to increasing the amplitude of the high frequency components of a video signal” and an emphasis level is a value that represents the amount of amplitude increase. For example, the ’128 Patent describes an embodiment where “[t]he emphasis controller 11 sets an emphasis level (the emphasis value E_e),” and E_e is a value that is multiplied to the high-frequency components and then added to the input video signal, which results in an amplitude increase for the high-frequency components of that video signal. *Id.*, 5:40-41.

The ’128 Patent further explains that the purpose of the emphasis level is to increase the amplitude of a video signal’s high-frequency components by a certain amount that can be dependent on a desired advantage (*i.e.*, higher emphasis levels for less generation of block distortion and mosquito noises and lower emphasis levels for less generation of codes and also less occurrence of an overrange condition):

In detail, the emphasis-level settings are performed as the wider the quantization step width, the higher the emphasis level for less generation of block distortion and mosquito noises whereas the narrower the quantization step width, the lower the emphasis level for less generation of codes and also less occurrence of an overrange condition.

Id., 4:1-10.

As noted above, in the District Court Action, the Petitioner has agreed that an emphasis level is a value that represents the amount by which the amplitude of the high-frequency components of a video signal is increased. Ex. 2003, at A-1, A-2.

V. LEVEL OF ORDINARY SKILL IN THE ART

For the purposes of this Preliminary Response only, Patent Owner utilizes Petitioner's proposed level of skill in the art: "at least a Bachelor's degree in computer science, electrical engineering, computer engineering, or a related field, with 2-3 years of experience in digital video processing, or a related field. Additional graduate education could substitute for professional experience, and *vice versa*." Pet. at 3 (citations omitted).

VI. PETITIONER HAS NOT DEMONSTRATED A REASONABLE LIKELIHOOD OF SUCCESS FOR THE GROUNDS ADVANCED IN THE PETITION, AND THE PETITION SHOULD BE DENIED

The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill

in the art, and (4) so-called secondary considerations where in evidence. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1537 (Fed. Cir. 1983).

The Board has held that a failure to identify the differences between the claimed subject matter and the prior art is fatal to an obviousness challenge. *See, Apple, Inc. v. Contentguard Holdings, Inc.*, IPR2015-00355, Decision Denying Institution of *Inter Partes* Review, Paper 9 at 9-10 (P.T.A.B. June 26, 2015) (denying institution for failure to identify the differences between the claimed subject matter and the prior art).

In arriving at an obviousness determination, the Board must sufficiently explain and support the conclusions that the prior-art references disclose all the elements recited in the Challenged Claims and a relevant, skilled artisan not only could have made, but would have been motivated to combine all the prior art references in the way the patent claims and reasonably expected success. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017). That is, even if all the claim elements are found across a number of references, an obviousness determination must consider whether a person of ordinary skill in the art would have

the motivation to combine those references. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1368 (Fed. Cir. 2016); *Los Angeles Biomedical Rsch. Inst. at Harbor-UCLA Med. Ctr. v. Eli Lilly & Co.*, 849 F.3d 1049, 1067 (Fed. Cir. 2017) (vacating and remanding an obviousness determination, in part, because the Board did not make factual finding as to whether there was an apparent reason to combine all three prior art references to achieve the claimed invention and whether a person of skill in the art would have had a reasonable expectation of success from such a combination). This combinability determination, as supported by an articulated motivation to combine, requires a plausible rationale as to why those prior art references would have worked together. *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013). Absent some articulated rationale, a “common sense” finding is no different than the conclusory statement “would have been obvious.” *In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017). Of additional importance, “knowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references. . . .” *Innogenetics, N.V. v. Abbott Lab’ys.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008).

A. Claims 1-6 and 8 Are Not Obvious Over Fukuda

**1. The Petition Does Not Show that Fukuda Discloses
“an emphasis-level setter for setting an emphasis level
to the input video signal . . .,” as Required by Claim
Element 1.1**

Claim 1 of the ’128 Patent recites “an emphasis-level setter for setting an

emphasis level to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal.”

The Petition is deficient because it fails to show that Fukuda discloses “setting an emphasis level” under the proper construction of “emphasis level.” *See supra* Section IV.B. As construed by Petitioner in the District Court Action and agreed by Patent Owner, an emphasis level is “a value that represents the amount by which the amplitude of *the high frequency components* of a video signal is increased.” *Id.* (emphasis added). The Petition does not contend that Fukuda discloses an emphasis level setter for setting “a value that represents the amount by which the amplitude of *the high frequency components* of a video signal is increased,” let alone increasing the amplitude “in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” as required by the claims.

Therefore, the Petition is deficient because it fails to show that claim element 1.1 is disclosed or rendered obvious by Fukuda.

**2. The Petition Does Not Show that Fukuda Discloses
“... setting an emphasis level to the input video signal
in accordance with at least one factor among control
data carried by the input video signal, a picture state
detected from the input video signal and encoding
conditions for the input video signal,” as Required by
Claim Element 1.1**

Claim 1 of the '128 Patent recites “an emphasis-level setter for setting an emphasis level to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal.”

The Petition is deficient because it fails to show that Fukuda discloses all three claimed factors, and particularly, the claimed “control data carried by the input video signal.” In claims reciting “at least one of” several factors, all factors must be disclosed in the prior art reference(s) cited by Petitioner. For example, in a similar claim that recited “at least one of a first antenna virtualization vector and a second antenna virtualization vector is associated with the first antenna port group,” the Board held that “[a]s an initial matter, at this stage of the proceeding, we conclude that the plain and ordinary meaning of this claim limitation requires both a first antenna virtualization vector and a second antenna virtualization vector,” even though “the plain and ordinary meaning of the claim language only requires that at least one of these vectors is associated with the first antenna port group.” *Samsung Elecs. Co. v. Apex Beam Techs. LLC*, IPR2023-00603, Institution Decision, Paper

No. 10, 22-23 (P.T.A.B. Oct. 20, 2023). Similarly, while Claim Element 1.1 requires “setting an emphasis level to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” all three factors must be present in the disclosure of Fukuda to meet this claim element.

The Petition is deficient on its face because Petitioner admittedly fails to show that Fukuda discloses the recited “control data carried by the input video signal” in its discussions of Claim Element 1.1. *See* Pet. at 13-24; 35 U.S.C. § 312(a)(3) (“A petition filed under section 311 may be considered only if—. . . the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.”). Petitioner’s rationale for intentionally ignoring “control data carried by the input video signal” is an alleged lack of § 112 support for that term in the specification. Pet. at 14, n.4. However, an alleged lack of §112 written description support is not a basis upon which this Board can institution a petition in an *inter partes* review. 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 and only on the basis of prior art consisting of patents or printed publications.***”) (emphasis added).

Additionally, Petitioner presents no authority why it is entitled to institution of its Petition when it admits to having failed to show where a claim element is found in the cited references. Patent Owner is aware of no authority allowing a Petitioner to avoid its duty under 37 C.F.R. § 42.104(b)(4) to “specify where each element of the claim is found in the prior art patents or printed publications relied upon” by simply declaring that the claim element lacks support in the specification.

Patent Owner also disagrees with Petitioner’s characterization that “the ’128 Patent admits that it does not have written description support for [control data carried by the input video signal].” Pet. at 14, n.4. The fact that the specification notes that the “control data carried by the input video signal” is not described in one of the previously described embodiments does not mean that the claim element lacks written description support. Quite the opposite, the specification’s identification of “control data such as emphasis-level designating data carried by input video signals,” ’128 Patent, 8:36-38, as a factor used for setting an emphasis level is obviously sufficient disclosure to support the corresponding claim limitation. *Id.*

Therefore, the Petition is deficient because it fails to show that Claim Element 1.1 is disclosed or rendered obvious by Fukuda.

3. The Petition Does Not Show that Fukuda Discloses “an *emphasizer for applying the emphasis processing to the input video signal at the emphasis level to obtain an emphasized video signal*,” as Required by Claim Element 1.2

Claim 1 of the '128 Patent recites “an *emphasizer for applying the emphasis processing to the input video signal at the emphasis level to obtain an emphasized video signal*.”

As noted in Sections VI.A.1 and VI.A.2 above, the Petition does not show that Fukuda discloses “an *emphasis-level setter for setting **an emphasis level** to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal*,” and, therefore, “an *emphasizer for applying **the emphasis processing** to the input video signal at **the emphasis level** to obtain an emphasized video signal*.”

Therefore, the Petition is deficient because it fails to show that this claim limitation is disclosed or rendered obvious by Fukuda.

4. The Petition Does Not Show that Fukuda Discloses “an *encoder for encoding the emphasized video signal to obtain a video bitstream*,” as Required by Claim Element 1.3

Claim 1 of the '128 Patent recites “an *encoder for encoding the emphasized video signal to obtain a video bitstream*.”

As noted in Section VI.A.3 above, the Petition does not show that Fukuda discloses “an emphasisizer for applying the emphasis processing to the input video signal at the emphasis level to obtain *an emphasized video signal*,” and, therefore, “an encoder for *encoding the emphasized video signal* to obtain a video bitstream.”

Therefore, the Petition is deficient because it fails to show that this claim limitation is disclosed or rendered obvious by Fukuda.

5. The Petition Does Not Show that Fukuda Discloses “a multiplexer for multiplexing the video bitstream and data on the emphasis level,” as Required by Claim Element 1.4

Claim 1 of the '128 Patent recites “a multiplexer for multiplexing the video bitstream and data on the emphasis level.”

As noted in Sections VI.A.1, VI.A.2, and VI.A.4 above, the Petition does not show that Fukuda discloses “an emphasis-level setter for setting *an emphasis level* to the input video signal in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” and “an encoder for encoding the emphasized video signal to obtain *a video bitstream*,” and, therefore, a “multiplexer for multiplexing *the video bitstream* and data on *the emphasis level*.”

Moreover, Fukuda is completely silent on the use of a multiplexer and does not mention the word in its entire specification. *See generally* Ex. 1005.

Therefore, the Petition is deficient because it fails to show that this claim limitation is disclosed or rendered obvious by Fukuda.

6. The Petition Does Not Show that Fukuda Renders Claims 2-6 and 8 Obvious

Claims 2-3 are dependent on Claim 1. For at least the same reasons as Claim 1, Fukuda fails to obviate Claims 2-3.

Claim 4 is the method claim analogue of Claim 1. For at least the same reasons as Claim 1, Fukuda fails to obviate Claim 4.

Claims 5 and 6 recite “[a] video-deemphasis decoding apparatus,” which is a mirror to the “video-emphasis encoding apparatus” of Claim 1. For at least the same reasons as Claim 1, Fukuda fails to obviate Claim 5.

Claim 8 recites “[a] video-deemphasis decoding method,” which is the method claim analogue of Claim 5. For at least the same reasons as Claim 5, Fukuda fails to obviate Claim 8.

B. Claims 1-4 Are Not Obvious Over Fukuda in Combination with Fujikawa

1. The Petition Does Not Show that Fukuda in Combination with Fujikawa Renders Obvious Claim 1

Petitioner admits that “Ground 1B is substantively identical to, and incorporates the analysis of, Ground 1A.” Pet. at 61. For example, Petitioner only relies on Fujikawa with respect to certain aspects of Claim Elements 1.1 and 1.4 in

Claim 1. *Id.*

To the extent that Ground 1B (Fukuda in combination with Fujikawa) relies on the analysis of Ground 1A (Fukuda alone), Ground 1B fails to render obvious Claim 1 for the same reasons as Ground 1A. *See* Section VI.A.

Further, Petitioner’s use of Fujikawa to disclose the claimed “emphasis-level setter for setting an emphasis level to the input video signal” is deficient because, as Petitioner admits, Fujikawa’s “high frequency emphasis section 3” merely “separates the high spatial frequency components . . . from the low spatial frequency components, and converts to the value zero all of those picture element values contained in the high spatial frequency components which are below a predetermined threshold value.” Pet. at 62 (citing Ex. 1006, 5:6-43, 7:1-67, FIGS. 1, 3-4). Therefore, Fujikawa’s “high frequency emphasis section 3” does not set “a value that represents the amount by which the amplitude of the high frequency components of a video signal is increased,” let alone increasing the amplitude “in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal,” as required by the claims.

Therefore, the Petition is deficient because it fails to show that this claim is disclosed or rendered obvious by Fukuda in combination with Fujikawa.

2. The Petition Does Not Show that Fukuda, Fukuda in combination with Fujikawa, or Atsumi Renders Claims 2-4 Obvious

Claims 2-3 are dependent on Claim 1. For at least the same reasons as Claim 1, Fukuda in combination with Fujikawa fails to obviate Claims 2-3.

Claim 4 is the method claim analogue of Claim 1. For at least the same reasons as Claim 1, Fukuda in combination with Fujikawa fails to obviate Claim 4.

C. Claims 1-6 and 8 Are Not Obvious Over Atsumi

1. The Petition Does Not Show that Atsumi Renders Obvious Claim 1

Patent Owner incorporates its arguments with respect to Fukuda, which also apply to Atsumi. *See supra* Section VI.A.

For example, as with Fukuda in Petitioner's Ground 1A, the Petition is deficient because it fails to show any disclosure of "setting an emphasis level" under the proper construction of "emphasis level" in Atsumi. *See supra* Section VI.A.1. More specifically, the Petition fails to show any disclosure in Atsumi of an emphasis level setter for setting "a value that represents the amount by which the amplitude of the high frequency components of a video signal is increased," let alone increasing the amplitude "in accordance with at least one factor among control data carried by the input video signal, a picture state detected from the input video signal and encoding conditions for the input video signal," as required by the claims. Pet. at 71-75. Atsumi does not even mention the term "high frequency." *See generally* Ex.

1007.

For further example, like Fukuda, the Petition also fails to show any disclosure of the recited “control data carried by the input video signal” in Atsumi. *See supra* Section VI.A.2.

Therefore, the Petition is deficient because it fails to show that Claim 1 is disclosed or rendered obvious by Atsumi.

2. The Petition Does Not Show that Atsumi Renders Claims 2-6 and 8 Obvious

Claims 2-3 are dependent on Claim 1. For at least the same reasons as Claim 1, Atsumi fails to obviate Claims 2-3.

Claim 4 is the method claim analogue of Claim 1. For at least the same reasons as Claim 1, Atsumi fails to obviate Claim 4.

Claims 5 and 6 recite “[a] video-deemphasis decoding apparatus,” which is a mirror to the “video-emphasis encoding apparatus” of Claim 1. For at least the same reasons as Claim 1, Atsumi fails to obviate Claim 5.

Claim 8 recites “[a] video-deemphasis decoding method,” which is the method claim analogue of Claim 5. For at least the same reasons as Claim 5, Atsumi fails to obviate Claim 8.

**VII. THE PETITION SHOULD BE DENIED IN THE DISCRETION
OF THE DIRECTOR UNDER 35 U.S.C. § 314(A)**

Based on Petitioner’s reasons regarding § 314(a), the Board should exercise its discretion to deny this Petition.

The circumstances of the parallel District Court Action necessitate denial of the Petition under the Board’s precedent, as every factor considered in relation to efficiency, fairness, and the merits supports denial. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 6 (P.T.A.B. Mar. 20, 2020) (precedential) (considering (a) “whether the petitioner and the defendant in the parallel proceeding are the same party”; (b) “overlap between issues raised in the petition and in the parallel proceeding” (c) “proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision”; (d) “investment in the parallel proceeding by the court and the parties”; (e) “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted”; and (f) “other circumstances that impact the Board’s exercise of discretion, including the merits.”).

As set forth below, these factors collectively demonstrate that efficiency and integrity of the AIA are best served by denying review. First, the Petitioner is the Defendant in the parallel proceeding. *See infra* Section VII.A. Second, the asserted claims in the District Court Action are all at issue in the Petition. *See infra* Section II.B. Third, trial in the District Court Action is set for October 7, 2024, over seven

months prior to the projected statutory deadline for a Final Written Decision of this Petition in May 28, 2025. *See infra* Section VII.C. Fourth, the parties (and Patent Owner in particular) have invested significant resources on developing legal and factual issues of validity and infringement in the District Court Action and will have invested substantially more resources before any decision on this Petition. *See infra* Section VII.D. Fifth, the Court has neither granted nor denied a stay pending this Petition. *See infra* Section VII.E. Finally, no other factors favor institution. *See infra* Section VII.F.

Accordingly, the Board should exercise its discretion under § 314(a) and deny the Petition because institution of this proceeding would not be consistent with the objective of the AIA to “provide an effective and efficient alternative to district court litigation.” *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8, at 20 (P.T.A.B. Sept. 12, 2018) (quoting *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, at 16–17 (P.T.A.B. Sept. 6, 2017) (precedential)).

A. The Parallel District Court Action and the Petition Involve the Same Parties

As noted in Patent Owner’s Mandatory Notice, there exists a parallel District Court Action between the same parties regarding the same subject patent (the ’128 Patent). Pet. at 1. Petitioner is a party to the District Court Action captioned as

Advanced Coding Techs. LLC v. Samsung Elecs. Co., Case No. 2:22-cv-00499-JRG (E.D. Tex.). Accordingly, this factor weighs in favor of discretionary denial.

B. The District Court Action Involves Substantially the Same Claims

All of the asserted claims of the '128 Patent in the District Court Action are at issue in this Petition. “In at least these ways, the parallel proceedings would duplicate effort. This is an inefficient use of Board, party, and judicial resources and raises the possibility of conflicting decisions.” *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15 at 10 (P.T.A.B. May 15, 2020). Accordingly, this fact weighs in favor of discretionary denial.

C. Proximity of the District Court’s Trial Date

The proximity of the District Court Action’s trial date to the Board’s projected statutory deadline for a Final Written Decision strongly weighs in favor of discretionary denial.

The parties’ trial is scheduled for October 7, 2024. Exhibit 2001 (Second Amended Docket Control Order, Dkt. 84, *Advanced Coding Techs. LLC v. Samsung Elecs. Co.*, Case No. 2:22-cv-00499-JRG (E.D. Tex. February 21, 2024)). Pursuant to 35 U.S.C. §§ 314(b)(1) and 316(a)(11), the projected statutory deadline for a Final

Written Decision of this Petition is May 28, 2025.¹ As the District Court’s trial will be *over seven months before* the projected statutory deadline, this factor weighs strongly in favor of denying institution. *See Supercell Oy v. Gree, Inc.*, IPR2020-00513, Paper 11 at 10-12 (P.T.A.B. June 24, 2020) (denying institution where the jury trial was scheduled to conclude approximately ten months before the statutory deadline); *Edward LifeSciences Corp. v. Evalve, Inc.*, IPR2019-01479, Paper 7, at 6-13 (P.T.A.B. Feb. 26, 2020) (denying institution where jury trial would conclude more than nine months before a final decision would be due); *Samsung Elecs. Am., Inc. v. Uniloc 2017 LLC*, IPR2019-01218, Paper 7, at 7-10 (P.T.A.B. Jan. 7, 2020) (denying institution where jury selection was scheduled for approximately six months before trial in the Board proceeding would conclude); *Next Caller Inc. v. TrustID, Inc.*, IPR2019-00961, -00962, Paper 10, at 8-16 (P.T.A.B. Oct. 16, 2019) (denying institution where trial was scheduled to conclude “several months,” before a final decision would be due); *Cisco Sys., Inc.*, IPR2020-00122, Paper 15 at 8

¹ The statutory deadline for institution is May 28, 2024, “three months after receiving a preliminary response to the petition under section 313.” *See* 35 U.S.C. § 314(b)(1). If instituted, the statutory deadline for Final Written Decision is May 28, 2025, “not later than 1 year after the date on which the Director notices the institution of a review.”

(“Because the trial date is substantially earlier than the projected statutory deadline for the Board’s final decision, this factor weighs in favor of discretionary denial.”).

Petitioner does not contest that the proximity of the trial favors denial of institution. Thus, this factor also weighs in favor of discretionary denial.

D. Significant Investment and Petitioner’s Delay in Filing the Petition

The parties’ investment in the parallel proceeding weighs in favor of discretionary denial. In the District Court Action, the Court has already entered three Docket Control Orders (Dkts. 46, 76, 84), Discovery Order (Dkt. 47), Protective Order (Dkts. 50, 64), and E-Discovery Order (Dkt. 57). Discovery is also well under way. The parties have already exchanged infringement contentions pursuant to P.R. 3-1, invalidity contentions pursuant to P.R. 3-3, proposed claim constructions pursuant to P.R. 4-2, and a trial date is set for October 7, 2024, which is approximately seven months away. Ex. 2001. Thus, the parties’ and Court’s substantial investment in this proceeding weighs in favor of denial of institution under this factor.

E. No Stay of the Parallel District Court Action

There is no stay of the parallel District Court Action. Even if the Petition were instituted and Petitioner filed a motion to stay the District Court Action, prejudice, tactical disadvantage to Advanced Coding Technologies LLC, the late stage of the litigation, and the lack of potential simplification would weigh strongly against such

a motion. *See Lennon Image Techs., LLC v. Macy's Retail Holdings, Inc.*, 2:13-CV-00235-JRG, 2014 WL 4652117, at *1 (E.D. Tex. Sept. 18, 2014). The statutory deadline for institution is not until after claim construction discovery begins.² Ex. 2001; *see Intell. Ventures II v. FedEx Corp.*, No. 2:16-cv-00980-JRG, Dkt. 141 at 5 (E.D. Tex. Oct. 24, 2017) (“The Court agrees that the Parties have already invested substantial effort and resources during discovery and in preparing claim construction briefing. . . . These circumstances weigh against staying this case”).

Moreover, a stay would not decrease the burden on the Court and the parties since any instituted IPR would only cover 3 out of at least 20 combinations of obviousness that Petitioner has raised in the District Court Action, and do not include Petitioner’s challenges under § 101, § 102, or § 112. *See generally* Ex. 2002, at 9-15; 49-52; 72-103; 249-253; 291-293. *Intell. Ventures II*, No. 2:16-cv-00980-JRG, Dkt. 141 at 3-4 (“[T]he instituted IPRs only cover a narrow slice of the invalidity arguments Defendants have raised in this case. For example, Defendants have argued that the ’715 Patent is invalid under § 102 with respect to at least eight references . . . under § 103 with respect to at least twenty-six combinations . . . under

² As noted above, the statutory deadline for institution is April 17, 2024. *See supra* n.1. Per Ex. 2001, the date for compliance with P.R. 4-1 (Exchange Proposed Claim Terms) is March 22, 2024.

§ 112 [], and under § 101.”).

Accordingly, it would be unlikely for the Court to hold that a stay would streamline the litigation and this factor supports denial of institution.

F. Other Factors Favor Discretionary Denial

Petitioner does not present a strong case on the merits, further supporting denial of institution. *See supra* Section VI. Petitioner also does not identify any other factors which weigh against discretionary denial. Pet. at 98-99.

Thus, when viewing the factors together, the Petition should be denied in the Director’s discretion under 35 U.S.C. § 314(a).

VIII. CONCLUSION

For the foregoing reasons, Patent Owner respectfully requests that the Board deny institution of the Petition in its entirety.

Respectfully submitted,

Dated: February 28, 2024

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CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PATENT OWNER'S RESPONSE specified in 37 C.F.R. § 42.24 has 6,994 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word for Office 365.

Respectfully submitted,

February 28, 2024

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