

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. 9,986,303

Filing Date: March 13, 2015

Issue Date: May 29, 2018

Inventors: Hideki Takehara and Motoharu Ueda

Title: VIDEO IMAGE CODING DATA TRANSMITTER,
VIDEO IMAGE CODING DATA TRANSMISSION METHOD, VIDEO IMAGE
CODING DATA RECEIVER, AND VIDEO IMAGE CODING
DATA TRANSMISSION AND RECEPTION SYSTEM

PATENT OWNER'S PRELIMINARY RESPONSE

Case No. IPR2024-00327

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LIST OF EXHIBITS

Exhibit No.	Description of Document
2001	Fourth Amended Docket Control Order, Dkt. 93, <i>Advanced Coding Techs. LLC v. LG Elecs. Inc.</i> , Case No. 2:22-cv-00501-JRG (E.D. Tex. March 11, 2024)
2002	Defendants' Joint Patent L.R. 3-3 Invalidity Contentions and Subject Matter Ineligibility Contentions, <i>Advanced Coding Techs. LLC v. LG Elecs. Inc.</i> , Case No. 2:22-cv-00501-JRG (E.D. Tex.), served Feb. 21, 2024
2003	Joint Claim Construction and Prehearing Statement, Dkt. 87, <i>Advanced Coding Techs. LLC v. Samsung Elecs. Co.</i> , Case No. 2:22-cv-00499-JRG (E.D. Tex.), filed March 5, 2024

I. INTRODUCTION

On January 5, 2024, 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. 9,986,303 (Ex. 1001, the “’303 Patent”), challenging claims 1-2 (the “Challenged Claims”). The Petition asserts that (i) Claims 1-2 are rendered obvious over U.S. Patent Publication No. 2008/0181302 (“Ex. 1005” or “Demircin”) and (ii) Claim 1 is rendered obvious over U.S. Patent Publication No. 2011/0211631 (“Ex. 1007” or “Kimoto”) in view of Demircin. Pet. at 1-2. The Board should deny the Petition for at least the reasons described briefly below.

Petitioner fails to show that Demircin alone or in combination Kimoto discloses at least “receiving basic video image coding data; decoding the received basic video image coding data so as to reproduce a video image; receiving supplementary video image coding data including a supplementary hierarchical picture whose coding order and display order are earlier by a factor of a group of pictures including an intra coded picture and a plurality of inter prediction coded pictures than those of a basic hierarchical picture included in the basic video image coding data, a basic hierarchy and a supplementary hierarchy being set in units of the group of pictures; acquiring basic video image coding data received before supplementary video image coding data that has been received at the moment; and

reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data,” as required by Claims 1-2.

First, the Petition fails because it does not show that the prior art discloses “basic video image coding data” and “supplementary video image coding data” in their proper relationship to each other, namely, that basic video image coding data corresponds to a higher quality and higher transmission rate than supplementary video image coding data. Both Demircin and Kimoto disclose a base/lower layer that is of a lower quality than its disclosed enhancement/upper layer(s).

Second, the Petition also fails because it does not interpret “basic video image coding data” as separate from “supplementary video image coding data.” Each of Demircin’s and Kimoto’s base/lower layer pictures have corresponding enhancement/upper layer pictures and are therefore not separate since each enhancement/upper layer picture is merely combined with its corresponding base/lower layer picture for a higher quality video reproduction.

Third, the Petition fails because it does not show that the prior art discloses “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data,” which is properly construed to mean “rearranging basic video coding data with supplementary video image coding data.” Instead, the Petition merely claims that the claimed “reconstructing” is met by Demircin’s and Kimoto’s synthesizing or adding corresponding base/lower layer

and enhancement/upper layer pictures. The Challenged Claims require “rearranging” *separate* pictures, not merely synthesizing or adding constituent parts (corresponding to different quality) of the same singular picture.

The Board should exercise its discretion to deny the Petition under 35 U.S.C. § 314(a) for at least the following reasons: (i) a parallel District Court Litigation (defined below) exists between the same parties or real-parties-in-interest; (ii) the District Court Litigation involves the same subject patent (the ’303 Patent) with substantially the same claims; (iii) the District Court’s trial will be *over nine 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 ’303 PATENT

The ’303 Patent “relates to a video image coding data transmission technology and, more particularly, to a video image coding data transmission technology for transmitting video image coding data in real time.” ’303 Patent, 1:18-21.

The ’303 Patent discloses “basic video image coding data” in its relation to a “transmission structure of a video image based on the transmission rate”:

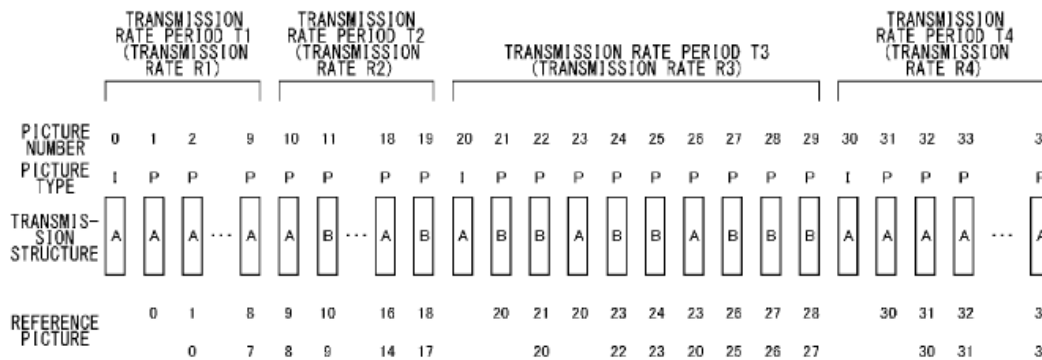
The predictive transmission structure setting unit 100 sets the transmission structure of a video image based on the transmission rate provided from the transmission rate acquisition unit 105 and also sets a prediction structure that indicates a reference relationship of each picture of

the video image. The transmission structure of the video image includes a basic hierarchy and a supplementary hierarchy. A basic hierarchy is a hierarchy for transmitting an overview video image, and a supplementary hierarchy is a hierarchy for transmitting an extension video image.

Id., 3:58-67. When the “transmission rate is sufficiently high,” only basic hierarchical pictures are transmitted, meaning that basic hierarchical pictures contain the most data, and “as the transmission rate becomes lowered” or bandwidth decreases, supplementary hierarchical pictures are increased and the ratio of basic hierarchical pictures is reduced:

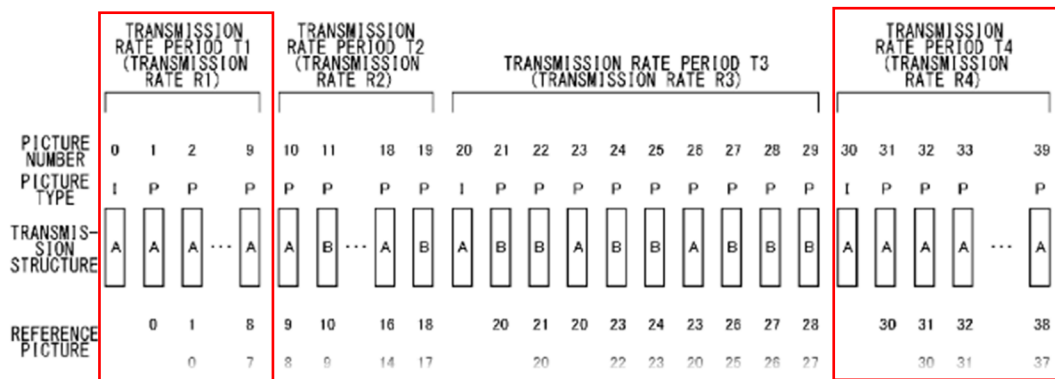
As described, the proportion of basic hierarchies to supplementary hierarchies can be changed in accordance with the transmission rate. ***When the transmission rate is sufficiently high (there is a margin), all basic hierarchies in the transmission rate are coded as basic hierarchical pictures.*** As the transmission rate becomes lowered (there is less margin), supplementary hierarchical pictures are increased, and the ratio of basic hierarchical pictures is reduced.

Id., 9:49-56 (emphasis added). The specification of the '303 Patent thus describes basic video image coding data as video image coding data of a base layer in a multi-layer coding scheme that corresponds to ***a higher*** transmission rate as compared to any supplementary video image coding data. The '303 Patent describes this relationship in FIG. 4 and its corresponding disclosure:



Id., FIG. 4. In FIG. 4, basic hierarchical pictures comprising the basic video image coding data are represented as “A” while supplementary hierarchical pictures comprising the supplementary video image coding data are represented as “B.” *Id.*, 9:27-36 (“There are two types of transmission structures: a basic hierarchical picture (A) and a supplementary hierarchical picture (B).”). Additionally, FIG. 4 represents each picture as either “an I picture for performing intra coding” or “a P picture for performing inter prediction coding” although “instead of a P picture, a B picture may be used as a picture type,” which “perform[s] inter prediction coding in a bidirectional manner.” *Id.*, 9:18-26.

As described by the '303 Patent, FIG. 4 shows that when the transmission rate is sufficiently high to accommodate the data of all of the basic video image coding data, as is the case for both R1 at 4 Mbps or R4 at 6Mbps in the exemplary embodiment, only basic video image coding data will be transmitted, shown as “A” rectangles below.



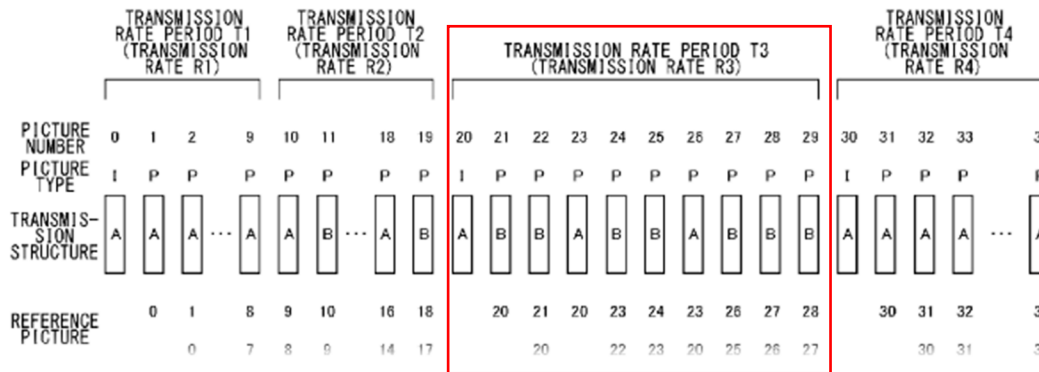
Id., 8:65-9:7, FIG. 4 (annotated).

When the transmission rate drops to R2 at 2 Mbps, as shown below, supplementary video image coding data (i.e., lower quality predictive pictures) are interspersed with the basic video image coding data.



Id.

In the case of R3, as shown below, there is an even greater percentage of supplementary video image coding data or “B” rectangles than within R2 because R3 (800 kbps) is a lower transmission rate than R2 (2 Mbps).



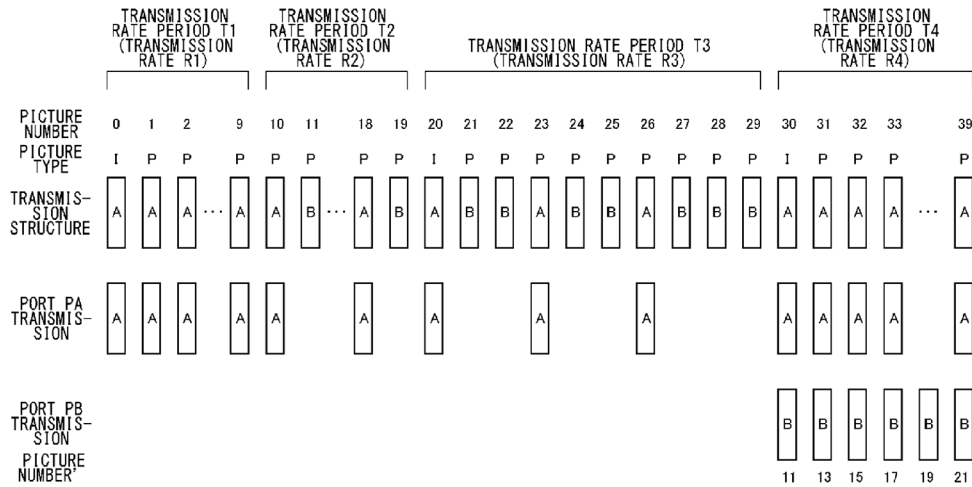
Id.

Therefore, if bandwidth or transmission rate decreases, FIG. 4 shows that more P pictures, which are predicted frames containing less data, are transmitted instead of some of the I pictures of the basic video image coding data, which contain more data. This enables the adaptation to available bandwidths, namely to send higher quality or lower quality video in real time. *Id.*, 1:65-67 (“[A] purpose of the present invention is to provide a video image transmission technology capable of achieving real-time video image transmission and viewing of high-quality video images at the same time.”).

Moreover, FIG. 4 shows that “supplementary video image coding data” provides separate pictures than basic video image coding data pictures, and, therefore, neither provides additional quality to “basic video image coding data” nor requires the availability of corresponding basic video image coding data pictures. As shown in FIG. 5 of the ’303 Patent below, “‘Port PA transmission’ indicates basic hierarchical pictures transmitted from the port PA, and ‘Port PB transmission’

indicates supplementary hierarchical pictures transmitted from the port PB.”

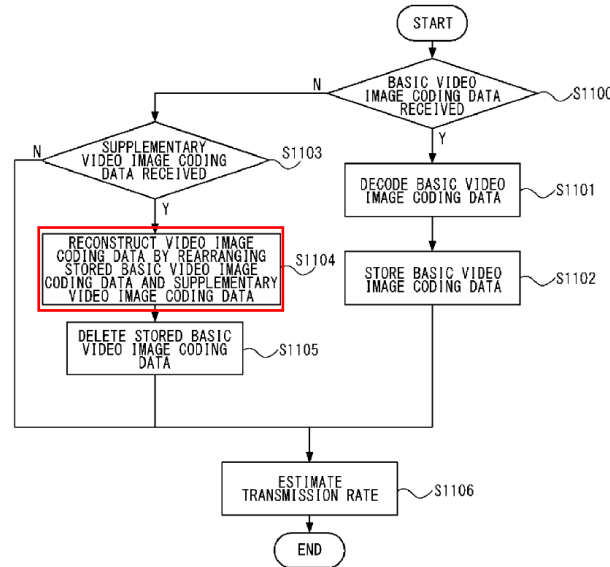
FIG. 5



Id., 11:46-52, FIG. 5. Therefore, “supplementary video image coding data” comprised of supplementary hierarchical pictures are separate pictures from “basic video image coding data” comprised of basic hierarchical pictures.

The ’303 Patent is explicit that “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data,” as used in Claims 1 and 2 of the ’303 Patent, comprises *rearranging* existing basic and supplementary video image coding data rather than changing or adding supplementary to basic video image coding data, as in some layered coding schemes. For example, FIG. 3 of the ’303 Patent demonstrates that the claimed “reconstructing” is “rearranging stored basic video image coding data and supplementary video image coding data”:

FIG.3

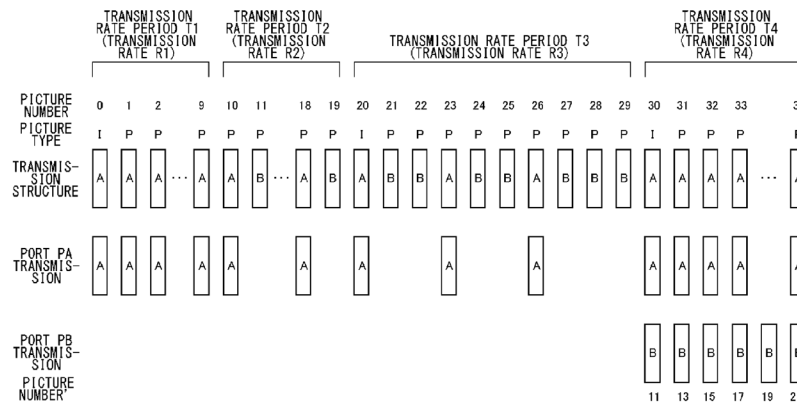


'303 Patent, FIG. 3 (annotated). The specification of the '303 Patent also provides intuitive support that the claimed “reconstructing” is “rearranging” because the supplementary hierarchical pictures are received out of order in the sense that they are received in an order other than their display and decoding order with respect to the basic video image coding data. *See Id.*, 5:19-25 (“The coding data reconstruction unit 202 **rearranges the order of pictures** between the basic video image coding data of the past stored in the memory and the supplementary video image coding data received by the receiving unit 200 so as to reconstruct video image coding data and stores the reconstructed video image coding data in the coding data storage unit 203.”) (emphasis added), 8:1-4 (“In this case, the rearrangement of the basic video image coding data and the supplementary video image coding data is performed based on a frame number showing the **coding order** of pictures.”)

(emphasis added), 12:1-5 (“The coding data reconstruction unit 202 *rearranges the order* of basic hierarchical pictures of the past stored in the memory and the supplementary hierarchical pictures received in the transmission rate period T4 and performs reconstruction”) (emphasis added), 7:51-55, 13:60-14:3.

FIG. 5 also shows that the recited “reconstructing” is “rearranging” because the supplementary hierarchical pictures are predicted based on the basic hierarchical pictures that are received before.

FIG. 5



Id., FIG. 5.

III. THE ALLEGED PRIOR ART

A. Demircin

Demircin relates to “methods and systems for rate-adaptive transmission of video.” Ex. 1005, [0001].

Demircin’s “base layer provides a minimum level of video quality, and may provide compatibility with H.264/AVC.” *Id.*, [0035], [0022]). Demircin also

discloses “[o]ne or more enhancement layers provide additional quality in an incremental manner, also referred to as progressive refinement. Decoding of the first enhancement layer requires availability of the base layer. Decoding of each subsequent enhancement layer requires availability of all previous enhancement layers, as well as the base layer.” *Id.*, [0035].

As depicted in Demircin’s FIG. 1, Demircin’s enhancement layer pictures have corresponding base layer pictures to which they are added to in order to provide higher quality for those respective enhanced pictures (i.e., a base layer and two enhancement layer pictures that can be added exist for each of A, B, C, D, etc.):

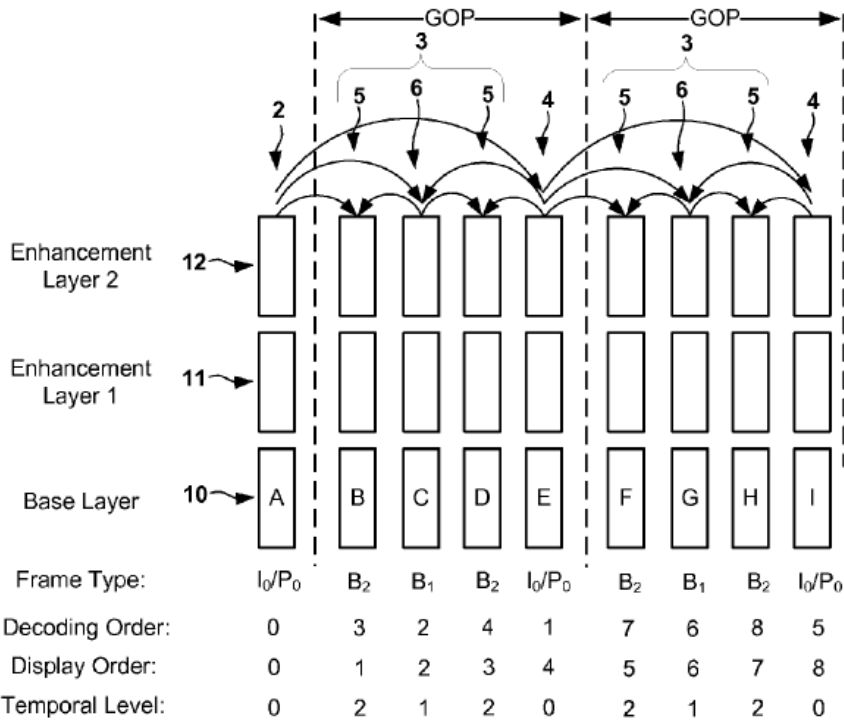


FIG. 1

Id., FIG 1 (annotated).

Therefore, the system of Demircin combines the base layer and enhancement layer comprised of network abstraction layer (“NAL”) units consistent with Scalable Video Coding (“SVC”) techniques. *Id.*, [0035].

B. Kimoto

Kimoto “relates to a moving image distribution system including a transmitting unit that transmits moving image data and a receiving unit that receives moving images.” Ex. 1007, [0001].

Kimoto discloses “lower layer data” from which moving image contents can be viewed at a low quality. *Id.*, [0019]-[0025]. Kimoto’s “lower layer data” has a “corresponding part” to “upper layer subsequent data” for a given picture. *Id.*, [0069]-[0070]). Kimoto also describes “synthesizing” corresponding lower layer and upper layer pictures to generate high quality data for reproduction. *Id.*, [0019], [0043], [0069]-[0071], FIG. 2 (S05-S06).

IV. CLAIM CONSTRUCTION

Petitioner’s assertion that “no formal [claim] constructions are presently 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
“a factor of a group of pictures” ¹	1-2	“one or more groups of pictures”
“reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data”	1-2	“rearranging basic video image coding data with supplementary video image coding data.”

Ex. 2003, at 2. The Petition does not assume that the plain and ordinary meaning of these terms is as limited as the Parties’ agreed upon constructions, and the Petition’s analysis of the claim limitations containing these terms against the cited references does not indicate that those references disclose at least “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data” 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 CFR. § 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

¹ Patent Owner does not address the “a factor of a group of pictures” term as it has no bearing on the Petition.

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 proceeding while agreeing to narrower constructions in the District Court Action. The Parties’ agreed upon constructions in the District Court Action should be applied in this proceeding.

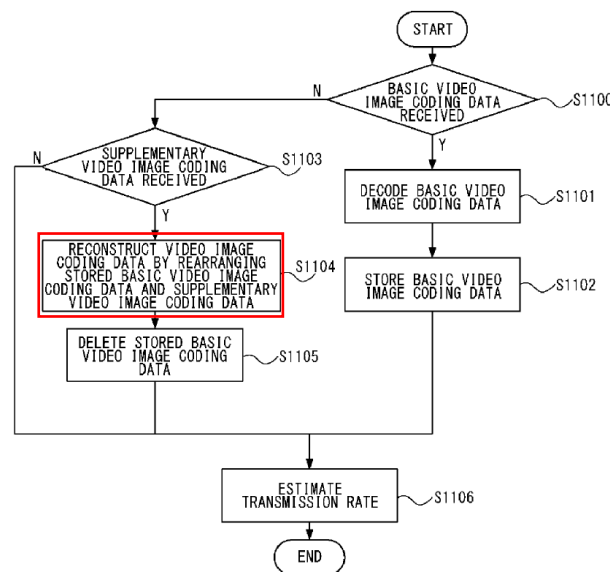
For the purposes of this Preliminary Response, Patent Owner notes that since both Patent Owner and Petitioner agreed to the constructions of the above terms in the District Court Action, it is highly likely that the District Court will enter the agreed constructions. Patent Trial and Appeal Board Consolidated Trial Practice Guide, at 47 (“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.’”) (citations omitted).

A. “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data”: “rearranging basic video coding data with supplementary video image coding data”

The ’303 Patent is explicit that “reconstructing video image coding data from

the basic video image coding data and the supplementary video image coding data,” as used in Claims 1 and 2 of the ’303 Patent, comprises **rearranging** existing basic and supplementary video image coding data rather than changing or adding supplementary to basic video image coding data, as in some layered coding schemes. For example, FIG. 3 of the ’303 Patent demonstrates that the claimed “reconstructing” is “rearranging stored basic video image coding data and supplementary video image coding data”:

FIG.3

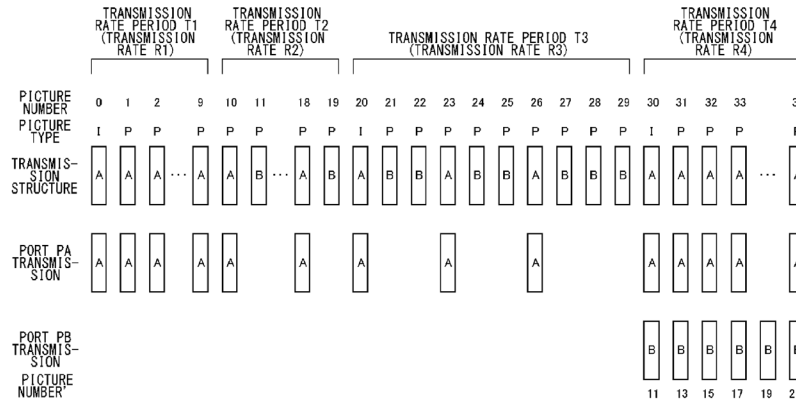


’303 Patent, FIG. 3 (annotated). The specification of the ’303 Patent also provides intuitive support that the claimed “reconstructing” is “rearranging” because the supplementary hierarchical pictures are received out of order in the sense that they are received in an order other than their display and decoding order with respect to the basic video image coding data. *See Id.*, 5:19-25 (“The coding data reconstruction

unit 202 *rearranges the order of pictures* between the basic video image coding data of the past stored in the memory and the supplementary video image coding data received by the receiving unit 200 so as to reconstruct video image coding data and stores the reconstructed video image coding data in the coding data storage unit 203.”) (emphasis added), 8:1-4 (“In this case, the rearrangement of the basic video image coding data and the supplementary video image coding data is performed based on a frame number showing the *coding order* of pictures.”) (emphasis added), 12:1-5 (“The coding data reconstruction unit 202 *rearranges the order* of basic hierarchical pictures of the past stored in the memory and the supplementary hierarchical pictures received in the transmission rate period T4 and performs reconstruction”) (emphasis added), 7:51-55, 13:60-14:3.

FIG. 5 also shows that the recited “reconstructing” would have been understood by the POSITA to be “rearranging” because the supplementary hierarchical pictures are predicted based on the basic hierarchical pictures that are received before.

FIG. 5



Id., FIG. 5.

As noted above, in the District Court Action, the Parties agreed to a construction that “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data” should be construed as “rearranging basic video image coding data with supplementary video image coding data.” Ex. 2003, at 2.

B. “Basic Video Image Coding Data” Corresponds to Data Transmitted Over a Higher Transmission Rate Than “Supplementary Video Image Coding Data”

While Patent Owner submits that a formal construction is not required on “basic video image coding data” and “supplementary video image coding data,” Petitioner is implicitly construing the terms “basic video image coding data” and “supplementary video image coding data” and does so incorrectly. Based on these terms’ explicit disclosure in the ’303 Patent specification, which describes that basic

video image coding data corresponds to a higher transmission rate (due to its comprising pictures occupying more bandwidth) than separate supplementary video image coding data, the Petitioner's position that basic video image coding data corresponds to a lower transmission rate is incorrect.

Petitioner is proposing an implied construction of these terms that is directly contrary to the embodiment in the specification. Constructions that read out the preferred embodiment are "rarely, if ever, correct and would require highly persuasive evidentiary support." *Vitrionics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). Here, Petitioner's implied constructions exclude both embodiments. The '303 Patent discloses "basic video image coding data" in its relation to a "transmission structure of a video image based on the transmission rate":

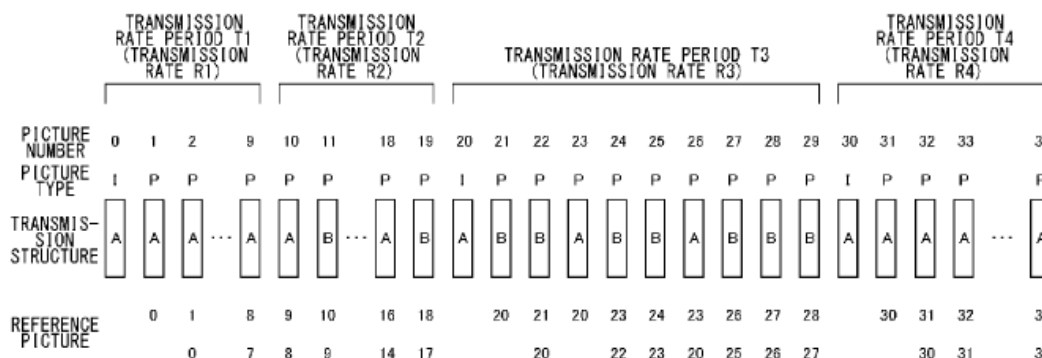
The predictive transmission structure setting unit 100 sets the transmission structure of a video image based on the transmission rate provided from the transmission rate acquisition unit 105 and also sets a prediction structure that indicates a reference relationship of each picture of the video image. The transmission structure of the video image includes a basic hierarchy and a supplementary hierarchy. A basic hierarchy is a hierarchy for transmitting an overview video image, and a supplementary hierarchy is a hierarchy for transmitting an extension video image.

'303 Patent, 3:58-67. When the "transmission rate is sufficiently high," only basic hierarchical pictures are transmitted, meaning that basic hierarchical pictures contain the most data, and "as the transmission rate becomes lowered" or bandwidth

decreases, supplementary hierarchical pictures are increased and the ratio of basic hierarchical pictures is reduced:

As described, the proportion of basic hierarchies to supplementary hierarchies can be changed in accordance with the transmission rate. *When the transmission rate is sufficiently high (there is a margin), all basic hierarchies in the transmission rate are coded as basic hierarchical pictures.* As the transmission rate becomes lowered (there is less margin), supplementary hierarchical pictures are increased, and the ratio of basic hierarchical pictures is reduced.

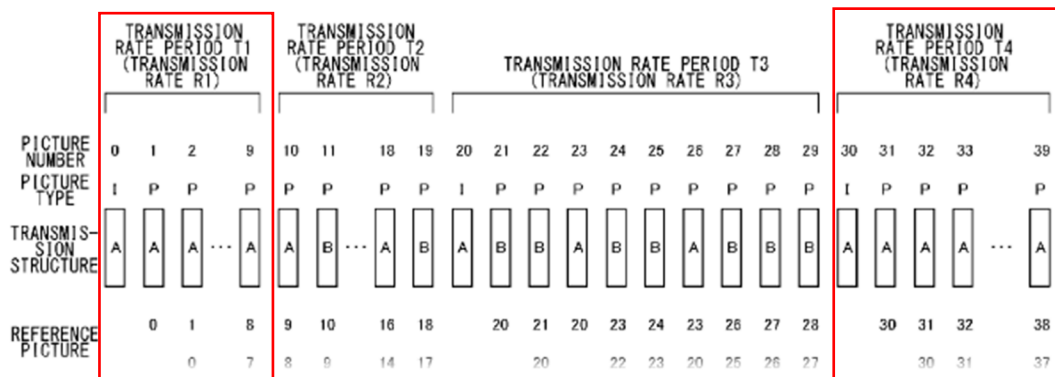
'303 Patent, 9:49-56 (emphasis added). The specification of the '303 Patent thus describes basic video image coding data as video image coding data of a base layer in a multi-layer coding scheme that corresponds to *a higher* transmission rate as compared to any supplementary video image coding data. The '303 Patent describes this relationship in FIG. 4 and its corresponding disclosure:



'303 Patent, FIG. 4. In FIG. 4, basic hierarchical pictures comprising the basic video image coding data are represented as “A” while supplementary hierarchical pictures comprising the supplementary video image coding data are represented as “B.” *Id.*,

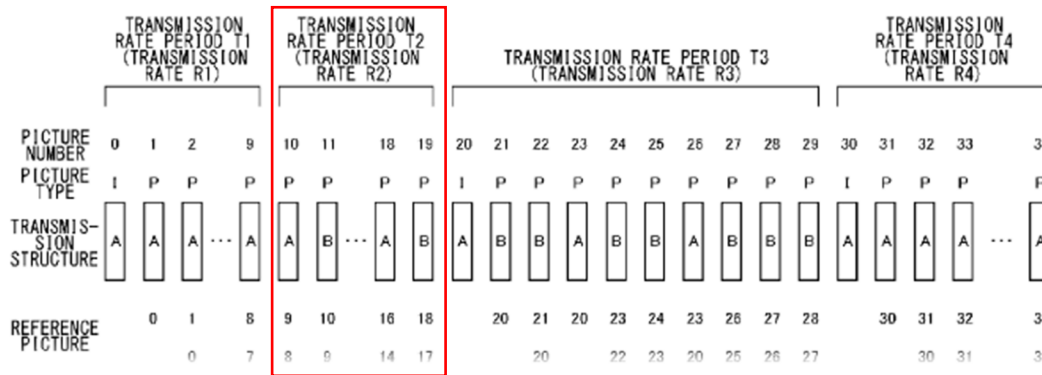
9:27-36 (“There are two types of transmission structures: a basic hierarchical picture (A) and a supplementary hierarchical picture (B).”). Additionally, FIG. 4 represents each picture as either “an I picture for performing intra coding” or “a P picture for performing inter prediction coding” although “instead of a P picture, a B picture may be used as a picture type,” which “perform[s] inter prediction coding in a bidirectional manner.” *Id.*, 9:18-26.

As described by the '303 Patent, FIG. 4 shows that when the transmission rate is sufficiently high to accommodate the data of all of the basic video image coding data, as is the case for both R1 at 4 Mbps or R4 at 6Mbps in the exemplary embodiment, only basic video image coding data will be transmitted, shown as “A” rectangles below.



'303 Patent, 8:65-9:7; *Id.*, FIG. 4 (annotated).

When the transmission rate drops to R2 at 2 Mbps, as shown below, supplementary video image coding data (i.e., lower quality predictive pictures) are interspersed with the basic video image coding data.



Id.

In the case of R3, as shown below, there is an even greater percentage of supplementary video image coding data or “B” rectangles than within R2 because R3 (800 kbps) is a lower transmission rate than R2 (2 Mbps).



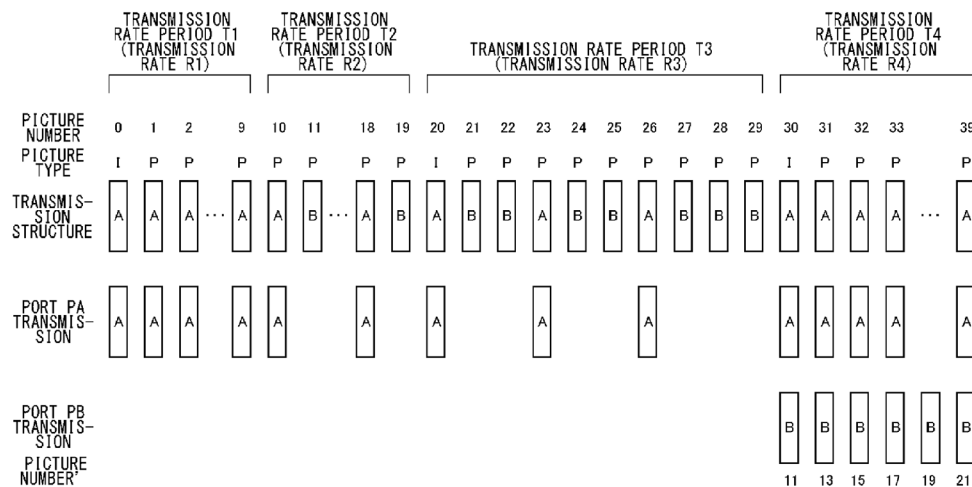
Id.

Therefore, if bandwidth or transmission rate decreases, FIG. 4 shows that more P pictures, which are predicted frames containing less data, are transmitted instead of some of the I pictures of the basic video image coding data, which contain more data. This enables the adaptation to available bandwidths, namely to send higher quality or lower quality video in real time. *Id.*, 1:64-67 (“a purpose of the

present invention is to provide a video image transmission technology capable of achieving real-time video image transmission and viewing of high-quality video images at the same time.”).

Moreover, FIG. 4 shows that “supplementary video image coding data” provides separate pictures than basic video image coding data pictures, and, therefore, neither provides additional quality to “basic video image coding data” nor requires the availability of corresponding basic video image coding data pictures. As shown in FIG. 5 of the '303 Patent below, “‘Port PA transmission’ indicates basic hierarchical pictures transmitted from the port PA, and ‘Port PB transmission’ indicates supplementary hierarchical pictures transmitted from the port PB.”

FIG.5



'303 Patent, 11:46-52, FIG. 5. Therefore, “supplementary video image coding data” comprised of supplementary hierarchical pictures are separate pictures from “basic

video image coding data” comprised of basic hierarchical pictures.

Therefore, while a formal construction of these terms is not necessary, the Board should note that Petitioner is proposing an implied construction of these terms that is directly contrary to the embodiment in the specification because the recited “basic video image coding data” corresponds to *separate* pictures transmitted during a *higher* transmission rate than the recited “supplementary video image coding data.”

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. Ground 1: Claims 1-2 Are Not Obvious Over Demircin

1. The Petition Does Not Show that Demircin Discloses “basic video image coding data,” or “supplementary video image coding data,” as Required by Claim Elements [1.3]-[1.7]

Claim 1 of the ’303 Patent recites “receiving basic video image coding data; decoding the received basic video image coding data so as to reproduce a video

image; receiving supplementary video image coding data including a supplementary hierarchical picture whose coding order and display order are earlier by a factor of a group of pictures including an intra coded picture and a plurality of inter prediction coded pictures than those of a basic hierarchical picture included in the basic video image coding data, a basic hierarchy and a supplementary hierarchy being set in units of the group of pictures; acquiring basic video image coding data received before supplementary video image coding data that has been received at the moment; and reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data.”

The Petition is deficient because it implicitly construes “basic video image coding data” and “supplementary video image coding data” outside of their proper relationship to each other. The Petition does not show that the claims, properly construed, are obvious over Demircin, as alleged in Ground 1.

For example, the Petition incorrectly asserts that Demircin’s “base layer [that] provides *a minimum level of video quality*, and may provide compatibility with H.264/AVC” discloses the recited “basic video image coding data.” Pet. at 17 (citing Ex. 1005, [0035], [0022]) (emphasis added). Petitioner’s understanding of “basic video image coding data” as corresponding to “a minimum level of video quality” directly contradicts the specification of the ’303 Patent, which describes basic video coding data as corresponding to a layer that contains the *highest* level of video

quality and therefore transmitted only a sufficiently high bandwidth or transmission rate. *See supra* Section IV.B

The Petition also asserts that Demircin’s “enhancement layer coding data” discloses the recited “supplementary video image coding data.” Pet. at 22. This is wrong for several reasons. First, the recited “supplementary video image coding data” is not an “*enhancement* layer” because the ’303 Patent describes the term as comprising less data due to being comprised of more predictive pictures. *See supra* Section IV.B. The purpose of the ’303 Patent is to have a backup lower quality picture when the transmission rate drops such that it cannot support the highest quality of only basic video image coding data. *Id.* (citing ’303 Patent, 1:65-67).

Second, the Petition contends that Demircin’s “enhancement layers provide additional quality *in an incremental manner*, also referred to as progressive refinement” and that “[d]ecoding of the first *enhancement layer requires availability of the base layer*.” Pet. at 23 (citing Ex. 1005, [0035]) (emphasis added). The Petition depicts that Demircin’s enhancement layer pictures have corresponding base layer pictures to which they are added to in order to provide higher quality for those respective enhanced pictures (i.e., a base layer and two enhancement layer pictures that can be added exist for each of A, B, C, D, etc.):

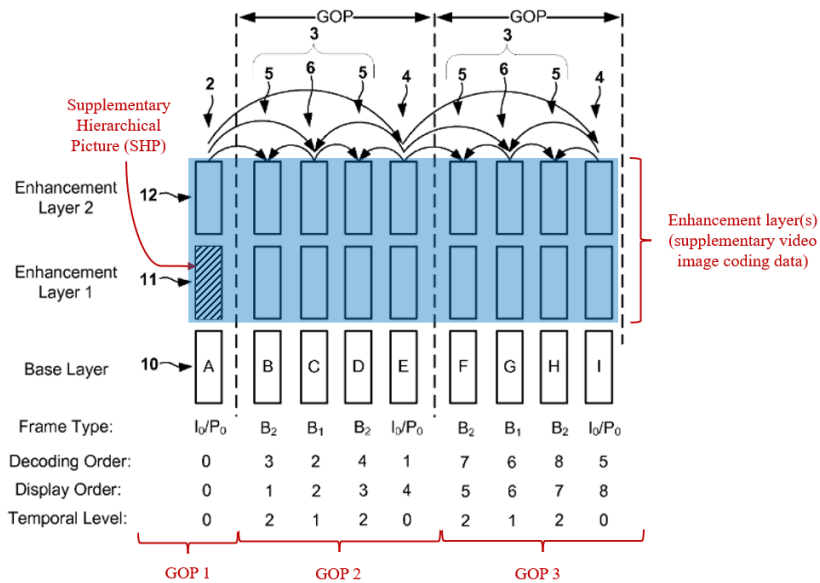


FIG. 1

Pet. at 25 (citing Ex. 1005, FIG 1) (annotated). However, the claimed “supplementary video image coding data” is separate from “basic video image coding data” and therefore is incompatible with having a base layer corresponding to the same picture, let alone being added to provide greater video quality when added to the base layer. *See supra* Section IV.B.

Therefore, the Petition is deficient because it fails to show that the claim limitations of Claim 1 are disclosed or rendered obvious by Demircin.

2. The Petition Does Not Show that Demircin Discloses “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data,” as Required by Claim Element [1.7]

Claim 1 of the ’303 Patent recites “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding

data.”

As noted above, Petitioner failed to propose a construction for this term, despite agreeing to construe this term as “rearranging basic video coding data with supplementary video image coding data” in the District Court Action. *See supra* Section IV.A. Instead, Petitioner merely proposes that the “reconstructing” term is met by combining base layer and enhancement layer pictures. *See Pet.* at 46 (“reconstructs higher-quality video image coding data by combining use of the base layer and enhancement layer NAL [network abstraction layer] units consistent with SVC [Scalable Video Coding] techniques”) (citing Ex. 1005, [0035]). Such a combination is not “rearranging,” as is required by this claim limitation, in order to provide the right proportion of basic video image coding data and supplementary video image coding data that were received out of order (i.e., received in an order other than their display and decoding order with respect to the basic video image coding data) to match a transmission rate. *See supra* Section IV.A.

Therefore, the Petition is deficient because it fails to show that this claim limitation of Claim 1 is disclosed or rendered obvious by Demircin.

3. The Petition Does Not Show that Demircin Renders Claim 2 Obvious

The Petition relies on its arguments for Claim 1 to render obvious at least Claims [2.9] to [2.16]. *Pet.* at 50. Therefore, for at least the same reasons as described

for Claim 1, the Petition fails to show how Claim 2 is rendered obvious over Demircin.

B. Ground 2: Claim 1 Is Not Obvious Over Kimoto and Demircin

1. The Petition Does Not Show that Kimoto in Combination with Demircin Discloses “*basic video image coding data*,” or “*supplementary video image coding data*,” as Required by Claim Element [1.3] to [1.7]

Claim 1 of the '303 Patent recites “receiving basic video image coding data; decoding the received basic video image coding data so as to reproduce a video image; receiving supplementary video image coding data including a supplementary hierarchical picture whose coding order and display order are earlier by a factor of a group of pictures including an intra coded picture and a plurality of inter prediction coded pictures than those of a basic hierarchical picture included in the basic video image coding data, a basic hierarchy and a supplementary hierarchy being set in units of the group of pictures; acquiring basic video image coding data received before supplementary video image coding data that has been received at the moment; and reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data.”

Ground 2 of the Petition (the combination of Kimoto and Demircin) is deficient for the same reasons as Ground 1.

First, the Petition fails because it does not show that the prior art discloses

“basic video image coding data” and “supplementary video image coding data” in their proper relationship to each other, namely, that basic video image coding data corresponds to a higher transmission rate than supplementary video image coding data. As with Demircin, Petitioner relies on Kimoto’s “‘lower layer data’ [] from which moving image contents can be viewed at a low quality” to disclose the claimed “basic video image coding data” and “upper layer data” to disclose the claimed “supplementary video image coding data.” Pet. at 61 (citing Ex. 1007, [0025]), 65 (citing Ex. 1007 [0019]-[0024]). Therefore, Petitioner’s understanding contradicts the recited “basic video image coding data,” which corresponds to a layer that contains the *highest* level of video quality and therefore is transmitted only at a sufficiently high bandwidth or transmission rate. *See supra* Section IV.B.

Second, the Petition fails because it does not interpret “basic video image coding data” as separate from “supplementary video image coding data.” *See* Section IV.B. As with Demircin, the Petition describes that each picture in Kimoto’s “lower layer data” has a “corresponding part” to the “upper layer subsequent data” and is therefore not separate since each upper layer picture is merely synthesized with a corresponding lower layer picture for higher quality. *See* Pet. at 65 (citing Ex. 1007, [0069]-[0070]). The recited “supplementary video image coding data” is separate from “basic video image coding data” and therefore is incompatible with having a “lower layer” and “upper layer” corresponding to the same picture, let alone an

“upper layer” being added to provide greater video quality when added to the “lower layer.” *See supra* Section IV.B.

Third, the Petition fails because it does not show that the prior art discloses “reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data,” which is properly construed to mean “rearranging basic video coding data with supplementary video image coding data.” *See supra* Section IV.A. Instead, the Petition merely claims that the claimed “reconstructing” is met by Kimoto’s synthesizing corresponding lower layer and upper layer pictures. *See* Pet. at 74 (“Kimoto teaches that the receiving unit reconstructs (e.g., synthesizes) the lower layer data [] with the upper layer data [] to generate high quality data for reproduction.”) (citing Ex. 1007, [0019], [0043], [0069]-[0071], FIG. 2 (S05-S06)). Such a synthesis is not “rearranging” separate pictures, as is required by this claim limitation, but is merely synthesizing a single picture based on constituent parts (*i.e.*, lower layer and upper layer versions of the same picture).

Therefore, the Petition is deficient because it fails to show that the claim limitations of Claim 1 are disclosed or rendered obvious by Kimoto in combination with Demircin.

**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 Litigation, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, Case No. 2:22-cv-00501-JRG (E.D. Tex.) (“District Court Litigation”) necessitates 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 Litigation are all at issue in the Petition. *See infra* Section II.B. Third, trial in the District Court Litigation is set for October 7, 2024, over nine months prior to the projected statutory deadline for a Final Written Decision of this Petition in July 22, 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 Litigation and will have invested substantially more resources before any decision on this Petition. *See infra* Section VII.D. Fifth, the Court has already 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 Litigation and the Petition
Involve the Same Parties**

As Petitioner notes, there exists a parallel District Court Litigation between

the same parties regarding the same subject patent (the '303 Patent). Pet. at 77. Petitioner is a party to the District Court Litigation captioned as *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, Case No. 2:22-cv-00501-JRG (E.D. Tex.). Accordingly, this factor weighs in favor of discretionary denial.

B. The District Court Litigation Involves Substantially the Same Claims

All of the asserted claims of the '303 Patent in the District Court Litigation 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 Litigation’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 (Fourth Amended Docket Control Order, Dkt. 93, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, Case No. 2:22-cv-00501-JRG (E.D. Tex. April 2, 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 July 22, 2025.² As the District Court’s trial will be ***over nine 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 (“Because

² The statutory deadline for institution is July 22, 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 July 22, 2025, “not later than 1 year after the date on which the Director notices the institution of a review.”

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 Litigation, the Court has already entered five Docket Control Orders (Dkts. 46, 76, 84, 89, 93), 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 and invalidity contentions pursuant to P.R. 3-3, and claim construction briefing is almost complete. Ex. 2001. A trial date is also set for October 7, 2024, which is less than six months away. *Id.* 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 Litigation

There is no stay of the parallel District Court Litigation and, in fact, a motion for a stay by Petitioner has already been denied. *See* Dkt. 102, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, Case No. 2:22-cv-00501-JRG (E.D. Tex. April 11, 2024). Even if the Petition were instituted and Petitioner filed another motion to stay

the District Court Litigation, 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 (on July 22, 2024) is not until after the related district court litigation claim construction hearing is completed (on May 16, 2024)³. 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 2 out of at least 28 combinations of obviousness that Petitioner has raised in the District Court Litigation, and do not include Petitioner’s challenges under § 101, § 102, or § 112. *See generally* Ex. 2002, at 34-40, 61-64, 175-205, 276-279, and 306-309. *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

³ The Court updated the Parties that the Claim Construction Hearing would be postponed from May 14, 2024, as noted in the Court’s Docket Control Order to May 16, 2024.

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 § 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 74-76.

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: April 22, 2024

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CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PATENT OWNER'S PRELIMINARY RESPONSE specified in 37 C.F.R. § 42.24 has 7,384 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,

April 22, 2024

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