

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.

IPR2024-00245
Patent 8,139,150 B2

Before BART A. GERSTENBLITH, NATHAN A. ENGELS, and
JASON M. REPKO, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Samsung Electronics Co., Ltd. (“Petitioner”) filed a Petition (Paper 2 (“Pet.”)), seeking *inter partes* review of claims 1–4 (the “challenged claims”) of U.S. Patent No. 8,139,150 B2 (Ex. 1001 (“the ’150 patent”)). See Pet. 1. Advanced Coding Technologies, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); see 37 C.F.R. § 42.108. Upon consideration of the evidence currently of record, we conclude that the information presented shows that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one challenged claim of the ’150 Patent.

A. *Related Matters*

The parties indicate that the ’150 patent is the subject of *Advanced Coding Technologies LLC v. Samsung Electronics Co.*, 2:22-cv-00499-JRG (E.D. Tex.). Pet. 89; Paper 4, 2.

B. *Real Parties in Interest*

Petitioner identifies itself and Samsung Electronics America, Inc. as real parties-in-interest. Pet. 88. Patent Owner identifies itself as the real party-in-interest. Paper 4, 2.

C. *The ’150 Patent (Ex. 1001)*

The ’150 patent, titled “Method and Apparatus for Encoding and Decoding Multi-View Video Signal, and Related Computer Programs,” relates to encoding and decoding video taken from multiple viewpoints.

Ex. 1001, 1:9–13, code (54). Among the background of the invention, the '150 patent states that in a “binocular stereoscopic television system, two cameras take pictures of a scene for viewer[s'] left and right eyes (left and right views) in two different directions respectively,” and “[w]hen the left-view picture and the right-view picture are handled as independent pictures respectively, the necessary total amount of coded picture information is equal to about twice that of information representing only a monoscopic picture (a single two-dimensional picture).” Ex. 1001, 2:38–54. The '150 patent also states that “[t]here has been a proposed stereoscopic television system designed so as to reduce the total amount of coded picture information” in which “one of the left-view and right-view pictures is labeled as a base picture while the other is set as a sub picture.” Ex. 1001, 2:55–59.

D. Challenged Claims

Petitioner challenges claims 1–4 of the '150 patent. Pet. 1. Each of claims 1–4 is independent. Claim 2 is illustrative of the challenged claims and is reproduced below with Petitioner's labeling added.

[2.pre.i] A method of decoding a coded multi-view video signal including coded signals resulting from encoding picture signals corresponding to different viewpoints respectively,
[2.pre.ii] wherein at least one among the viewpoints is designated as a base viewpoint, [2.pre.iii] the base viewpoint corresponding to a picture signal which is encoded without referring to at least one picture signal corresponding to one of the viewpoints except the base viewpoint, and
[2.pre.iv] wherein the coded multi-view video signal contains coded information representing a desired delay time of the start of decoding a coded signal originating from each of the picture signals corresponding to the viewpoints except the base viewpoint relative to the start of decoding a coded signal

originating from the picture signal corresponding to the base viewpoint, the method comprising the steps of

[2.1] decoding the coded information in the coded multi-view video signal to recover the desired delay times for the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint;

[2.2] decoding the coded signal originating from the picture signal corresponding to the base viewpoint;

[2.3] decoding the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint; and

[2.4] delaying the decoding of the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint relative to the decoding of the coded signal originating from the picture signal corresponding to the base viewpoint by time intervals equal to the recovered desired delay times.

E. The Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 2):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
2, 3	103 ¹	Chen-736 ²
2, 3	103	Chen-736, Chen-051 ³
2, 3	103	Chen-736, Tseng ⁴
2, 3	103	Chen-736, Tseng, Chen-051
1	103	Chen-736, H.262 Specification ⁵
1, 4	103	Chen-736, H.262 Specification, Chen-051
1	103	Chen-736, Tseng, H.262 Specification
1, 4	103	Chen-736, Tseng, H.262 Specification, Chen-051

Petitioner also cites the Declaration of Clifford Reader, Ph.D. in support of the Petition. Ex. 1003.

¹ Because the '150 patent issued from an application filed before March 16, 2013, the effective date of the amendment to 35 U.S.C. § 103 enacted by the Leahy-Smith America Invents Act ("AIA"), we apply the pre-AIA version of this section. *See* AIA, Pub. L. No. 112–29, § 3(n)(1), 125 Stat. 284, 293 (2011).

² US 5,886,736; issued Mar. 23, 1999 (Ex. 1005, "Chen-736").

³ US Patent Application Pub. No. 2003/0138051 A1, published July 24, 2003 (Ex. 1011, "Chen-051").

⁴ Belle L. Tseng & Dimitris Anastassiou, *Multiviewpoint Video Coding with MPEG-2 Compatibility*, IEEE Transactions on Circuits & Systems for Video Technology, Vol. 6, No. 4 (Aug. 1996) (Ex. 1013, "Tseng").

⁵ *Information Technology – Generic Coding of Moving Pictures and Associated Audio Information: Video. ITU-T Recommendation H.262*, Feb. 2000 (Ex. 1006, "H.262 Specification").

II. ANALYSIS

A. *Legal Standards*

Petitioner bears the burden to demonstrate unpatentability, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable for obviousness if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103; *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). 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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁶ *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art “would have had 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” and “[a]dditional graduate education could substitute for professional experience, and *vice versa*.” Pet. 3 (citing Ex. 1003 ¶¶ 89–90). Patent Owner states that it uses

⁶ The parties have not directed our attention to any objective evidence of nonobviousness.

Petitioner’s proposed level of skill for the purposes of its Preliminary Response. Prelim. Resp. 11.

At this stage, for the reasons provided by Petitioner (*see* Pet. 3 (citing Ex. 1003 ¶¶ 89–90)), we apply the parties’ agreed-upon level of ordinary skill in the art.

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2021). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of [a] disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner states that (i) “coded multi-view video signal,” recited in each of the challenged claims, “encompasses a coded video signal for two or more viewpoints, including at least one base viewpoint and at least one non-base viewpoint” (Pet. 7), and (ii) “picture signal,” also recited in each of the challenged claims, “refers to a signal that represents at least one picture from a viewpoint” (Pet. 9). Petitioner also identifies four elements of claim 1 that Petitioner contends are means-plus-function claim elements under 35 U.S.C. § 112 ¶ 6 (pre-AIA).

Patent Owner states that for the purposes of its Preliminary Response, Patent Owner “does not dispute Petitioner’s proposed constructions . . . , including terms that it contends are subject to 35 U.S.C. § 112(6).” Prelim. Resp. 10. At this stage, we apply the parties’ agreed-upon constructions for the purposes of this Decision.

D. Alleged Obviousness of Claims 2 and 3 Based on Chen-736

Petitioner provides a limitation-by-limitation comparison of claim 2 to the teachings of Chen-736 and states Chen-736 renders claim 3 obvious for substantially the same reasons. Pet. 27–49. We address Petitioner’s contentions and Patent Owner’s responsive arguments.

1. Claim 2

- a. [2.pre.i] A method of decoding a coded multi-view video signal including coded signals resulting from encoding picture signals corresponding to different viewpoints respectively,*
- b. [2.pre.ii] wherein at least one among the viewpoints is designated as a base viewpoint,*
- c. [2.pre.iii] the base viewpoint corresponding to a picture signal which is encoded without referring to at least one picture signal corresponding to one of the viewpoints except the base viewpoint, and*

Petitioner does not specifically address whether some or all of the preamble is limiting, but, among other things, Petitioner states that Chen-736 describes “a method of decoding a coded ‘stereoscopic’ (multi-view) video signal that includes both a ‘lower layer’ video signal for a first viewpoint and an ‘enhanced layer’ video signal for a second viewpoint.” Pet. 27–28 (citing Ex. 1005, 5:48–6:17, Figs. 1, 2, code (57)). Petitioner states that the base (e.g., lower) layer represents a left view (the claimed “base viewpoint”)

of a three-dimensional object and the enhancement layer represents a right view of the object. Pet. 28–29 (citing, e.g., Ex. 1005, 2:6–20, 5:49–53).

Petitioner also states that Chen-736 explains that in the Motion Picture Expert Group (“MPEG”) MPEG-2 Multi-view Profile (“MVP”) system, the base layer can include I-pictures and optionally P- and B-pictures. Pet. 31. “An I-picture completely describes a single picture without reference to any other picture,” and “[i]n the base layer, P pictures are predicted based on previous I or P pictures” while “B-pictures are predicted from the closest earlier I or P picture and the closest later I or P picture.” Pet. 31 (quoting Ex. 1005, 2:20–41). Petitioner states that none of the picture types in the base layer are encoded with reference to the enhancement layer, while pictures in the enhancement layer can be predicted from pictures in the base layer in a cross-layer prediction process known as disparity prediction. Pet. 31 (citing Ex. 1005, 2:33–35, 2:43–64).

At this stage, Patent Owner does not specifically rebut Petitioner’s showings regarding these claim elements beyond the arguments addressed below regarding claim element [2.pre.iv]. See Prelim. Resp. 13–19.

- d. *[2.pre.iv] wherein the coded multi-view video signal contains coded information representing a desired delay time of the start of decoding a coded signal originating from each of the picture signals corresponding to the viewpoints except the base viewpoint relative to the start of decoding a coded signal originating from the picture signal corresponding to the base viewpoint, the method comprising the steps of;*

Petitioner contends Chen-736 discloses that “the transport stream for the coded stereoscopic video signal (*‘the coded multi-view video signal’*) encodes two types of parameters used by the decoder to synchronize[] decoding of pictures in the lower and enhancement layers, namely a

‘presentation time stamp (PTS)’ parameter and a ‘decoding time stamp (DTS)’ parameter.” Pet. 33 (citing Ex. 1005, 7:17–39, 7:67–8:20, 16:54–19:65). According to Petitioner, the DTS for a given picture indicates the time when the picture needs to be decoded by the system target decoder (“STD”). Pet. 33 (citing Ex. 1005, 7:47–49).

Petitioner states, “In the context of Chen-736’s system, the DTS parameters encoded in the transport stream for enhancement layer pictures constitute ‘*coded information representing a desired delay time of the start of decoding a coded signal originating from each of the picture signals corresponding to the viewpoints except the base viewpoint relative to the start of decoding a coded signal originating from the picture signal corresponding to the base viewpoint,*’ as recited in claim 2.” Pet. 33 (citing Ex. 1003 ¶ 198). Further, Petitioner contends “[t]he DTS for each picture signal in the enhancement layer represents a desired delay time for the start of decoding a coded signal originating from each of the picture signals corresponding to the right viewpoint (‘*viewpoints except the base viewpoint*’) relative to the start of decoding a coded signal originating from the picture signal corresponding to the left viewpoint (‘*base viewpoint*’).” Pet. 34–35 (citing Ex. 1003 ¶ 200).

Describing an example in Chen-736, Petitioner states “the DTS value for the i th picture in the enhancement layer (DTS_{Ei}) is determined by calculating a desired decoding delay time and adding the desired decoding delay time to the corresponding DTS of the i th picture in the lower layer (DTS_{Li}).” Pet. 36 (citing Ex. 1005, 10:4–13). Petitioner states that “the desired decoding delay time is equal to ‘1.5F,’ where ‘F’ represents the ‘time interval[] . . . between the presentation of successive pictures’ (which

is dependent on the frame rate of the video sequence).” Pet. 36 (citing Ex. 1005, 8:9–13). “Accordingly, the value for DTS_{Ei} indicates that the start of decoding of the i th picture frame in the enhancement layer is to be delayed by $1.5F$ relative to the start of decoding of the i th picture in the base/lower layer” and thus “ DTS_{Ei} represents a desired delay time consistent with the language of [2.pre.iv].” Pet. 36 (citing Ex. 1003 ¶ 201).

Patent Owner argues that Chen-736’s DTS “does not ‘represent[] a desired delay time’ because a designated time is not ‘relative to the start of decoding a coded signal originating from the picture signal corresponding to the base viewpoint,’ as required by the claim.” Prelim. Resp. 14. According to Patent Owner, while the DTS of an enhancement layer (DTS_{Ei}) can be related to the DTS of a lower layer (DTS_{Li}), the cited portion of Chen-736 describes that this relation has to be “*determined* from DTS_{Li} ” and is therefore not “*coded information* representing a desired delay time.”

Prelim. Resp. 14. Patent Owner also argues that the F-based offset cannot be the claimed “desired delay time” because the offset is merely a multiple of the time interval F between the presentation of successive pictures and the time interval between presentation is different than the concept of a desired delay between decoding, as recognized by Chen-736’s distinction between a decode time stamp (DTS) and a presentation time stamp (PTS). Prelim. Resp. 15 (citing Ex. 1005, 4:5–7, 8:9–10).

Patent Owner also argues Chen-736 shows a DTS corresponding to *all* picture signals, including both base viewpoints and non-base viewpoints, which does not satisfy the claim’s recitation of “except the base viewpoint.” Prelim. Resp. 15–16 (citing Ex. 1005, 4:5–9, 10:4–11, 10:45–46, 11:45–45, 12:23–25, 12:60–61, 21:1–4). Further, Patent Owner argues “the claim

recites that *one* ‘coded multi-view video *signal* contains coded information representing a desired delay time . . . from each of the picture signals.’”

Prelim. Resp. 16 (omission in original). According to Patent Owner, “[i]n other words, one coded signal contains all of the information representing desired delay times from each of the non-base viewpoint picture signals.

The Petition is silent regarding where this aspect of the recited claim limitation is present in Chen-736.” Prelim. Resp. 16.

Consistent with Petitioner’s arguments, Chen-736 states that its PTS and DTS are provided in optional fields of packetized elementary stream packets. Ex. 1005, 7:19–25. Further, “[t]he video DTS . . . indicates the time when the picture needs to be decoded by the STD” (Ex. 1005, 7:47–49), and on the current record, we understand Petitioner to cite the DTS parameters encoded in the transport stream for enhancement layer pictures as teaching the claimed coded information representing a desired delay time. Pet. 33. Among other examples, Petitioner (Pet. 34) and Dr. Reader (Ex. 1005 ¶ 201) cite Chen-736’s example of the formula $DTS_{Ei} = DTS_{Li} + 1.5F$, where F is a time interval based on the frame rate (Ex. 1005, 8:9–20), as indicating that DTS_{Ei} represents the start of decoding of the i th picture in the enhancement layer being delayed $1.5F$ relative to the start of decoding of the i th picture frame of the base layer. Pet. 36 (citing Ex. 1003 ¶ 201); *see* Pet. 35–40 (citing additional examples of serial and parallel decoding with similar DTS calculations). At this stage, we find Petitioner’s position that the claim’s recitation that the coded information must “represent” the desired delay time to be a reasonable reading of the plain language of the claim such that a DTS value can represent the desired delay time even if it requires calculation. Pet. 35 n.8.

Even if Chen-736's use of F-based offsets as time intervals "is different than the concept of a desired delay between decoding" and Chen-736 recognizes the distinction between PTS and DTS (Prelim. Resp. 14–15), on the current record, these arguments do not rebut Petitioner's mapping of Chen-736 to the claim language. Similarly, Patent Owner's argument that Chen-736 teaches a DTS for all picture signals, including the base viewpoints and non-base viewpoints (Prelim. Resp. 16), does not rebut Petitioner's mapping of Chen-736's enhancement-layer DTS to the claim language.

At this stage, on the current record we determine Petitioner has sufficiently shown that Chen-736 teaches or reasonably suggests this claim element.

- e. *[2.1] decoding the coded information in the coded multi-view video signal to recover the desired delay times for the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint;*
- f. *[2.2] decoding the coded signal originating from the picture signal corresponding to the base viewpoint;*
- g. *[2.3] decoding the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint; and*
- h. *[2.4] delaying the decoding of the coded signals originating from the picture signals corresponding to the viewpoints except the base viewpoint relative to the decoding of the coded signal originating from the picture signal corresponding to the base viewpoint by time intervals equal to the recovered desired delay times.*

In addition to its discussion regarding claim element [2.pre.iv], Petitioner contends Chen-736 teaches the "decoding" limitations of claim elements [2.1]–[2.4]. Pet. 40–47. Among other things, Petitioner contends

Chen-736 teaches decoding a transport stream for a coded stereoscopic video signal that includes coded DTS parameters (Pet. 40–41) and extracting the enhancement layer DTS values to decode pictures in the enhancement layer at the times indicated by the DTS values “relative to corresponding base layer picture signals by time intervals equal to the desired delay times” (Pet. 46–47).

At this stage, Patent Owner does not specifically rebut Petitioner’s showings regarding these claim elements beyond the arguments addressed above regarding claim element [2.pre.iv]. *See* Prelim. Resp. 17–19 (referring to Patent Owner’s arguments directed to [2.pre.iv]).

i. Conclusion for Claim 2

On the record before us and for the reasons discussed above, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claim 2 as being unpatentable in view of Chen-736.

III. DISCRETIONARY DENIAL

Patent Owner argues that we should exercise our discretion to deny the Petition based on the parallel district court litigation. Prelim. Resp. 35 (citing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential)). Petitioner, however, presented a *Sotera* stipulation.⁷ Pet. 88 (citing Ex. 1023). Thus, we do not exercise our discretion to deny institution here. *See* Katherine K. Vidal, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with

⁷ *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 19 (PTAB Dec. 1, 2020) (precedential).

Parallel District Court Litigation (June 21, 2022) (“Consistent with [*Sotera*], the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.”).⁸

IV. CONCLUSION

Based on the current record, we determine Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim of the ’150 patent. Accordingly, we institute *inter partes* review of all claims challenged on all of the grounds in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019), 64.⁹

V. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted as to claims 1–4 of the ’150 patent based on the unpatentability challenges presented in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

⁸ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621.pdf.

⁹ Available at www.uspto.gov/sites/default/files/documents/tpgnov.pdf.

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