

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

VIDEOLABS, INC. and VL COLLECTIVE IP
LLC,

Plaintiffs,

v.

AMAZON.COM, INC. and AMAZON WEB SER-
VICES, INC.,

Defendants.

Civil Action No. 6:22-cv-00079-ADA

JURY TRIAL DEMANDED

**OPENING CLAIM CONSTRUCTION BRIEF OF
AMAZON.COM, INC. AND AMAZON WEB SERVICES, INC.**

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2	U.S. Patent 8,139,878
3	U.S. Patent 7,970,059
4	U.S. Patent 8,605,794
5	File History for U.S. Appl. No. 11/976,758 ('238 Patent) – Excerpts: Oct. 26, 2007 Claims Sept. 29, 2008 Preliminary Amendment
6	File History for U.S. Appl. No. 11/976,551 ('878 Patent) – Excerpts: Oct. 25, 2007 Claims and Preliminary Amendment May 11, 2009 Preliminary Amendment
7	Commc'ns Standards Review, vol. 13, no. 25 (July 24, 2002)
8	Licensees and Affiliates in Good Standing, MPEG-LA AVC/H.264, https://www.mpegla.com/programs/avc-h-264/licensees/ (last accessed Aug. 10, 2022)
9	Final August 1, 2022 AVC Attachment 1
10	ITU-T Recommendation G.723.1 (March 1996)
11	JVT-C031
12	JVT-C0145
13	<i>MPEG LA Announces Terms of Joint H.264/MPEG-4 AVC Patent License</i> (Nov. 17, 2003)
14	VideoLabs' Disclosure of Extrinsic Evidence (July 28, 2022)
15	<i>VideoLabs, Inc. v. Dell Techs., Inc.</i> , No. 6:21-cv-00456-ADA (W.D. Tex.), Dkt. 60-2, Declaration of Iain E. Richardson (Feb. 9, 2022)
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19	<i>Dell Techs., Inc. v. VideoLabs, Inc.</i> , IPR2022-00701, Patent Owner's Preliminary Response, Paper 7 (July 7, 2022)
20	<i>Dell Techs., Inc. v. VideoL Inc.</i> , IPR2022-00628, PO Exhibit 2001,

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21	<i>Dell Techs., Inc. v. VideoLabs, Inc.</i> , IPR2022-00628, Petr. Exhibit 1004, ITU-T Recommendation H.324 (Feb. 1998)
22	<i>Modern Nonmechanical Memory</i> , https://www.allaboutcircuits.com/text-book/digital/chpt-15/modern-nonmechanical-memory (last accessed Aug. 9, 2022)
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29	<i>Demultiplexers</i> , https://www.allaboutcircuits.com/textbook/digital/chpt-9/demultiplexers/ (VL-AMZN_00003106 – 3111)

Table of Abbreviations

'238 patent	U.S. Patent 7,769,238 (Ex. 1)
'878 patent	U.S. Patent 8,139,878 (Ex. 2)
'059 patent	U.S. Patent 7,970,059 (Ex. 3)
'794 patent	U.S. Patent 8,605,794 (Ex. 4)
JVT	Joint Video Team
'238 Patent File History	File History for U.S. Appl. No. 11/976,758 (Ex. 5)
'878 Patent File History	File History for U.S. Appl. No. 11/976,551 (Ex. 6)
'238 POPR	Patent Owner's Preliminary Response, <i>Dell Techs. v. VideoLabs, Inc.</i> , IPR2022-00628, Paper 7 (July 7, 2022) (Ex. 17)
'878 POPR	Patent Owner's Preliminary Response, <i>Dell Techs. v. VideoLabs, Inc.</i> , IPR2022-00629, Paper 7 (July 7, 2022) (Ex. 18)
'059 POPR	Patent Owner's Preliminary Response, <i>Dell Techs. v. VideoLabs, Inc.</i> , IPR2022-00701, Paper 7 (July 7, 2022) (Ex. 19)

I. INTRODUCTION

VideoLabs asserts seven patents in this case, but the parties’ claim construction disputes are currently confined to four of them—the ’238, ’878, ’059, and ’794 patents. Among those four, the first three—the ’238, ’878, and ’059 patents (collectively, the “coding patents”)—are directed to coding and decoding video. The claims of the fourth patent, the ’794 patent, are directed to the use of an assignment rule to synchronize content-related data (e.g., video and audio) segments.

According to VideoLabs, the three coding patents read on the H.264 advanced video coding industry standard. But all three patents are directed to proposals that were considered and explicitly rejected by the Joint Video Team (JVT) responsible for standardizing H.264. Because these proposals did not make it into the H.264 standard, to save its infringement claims, VideoLabs seeks to construe the claims to cover other proposals that were adopted. Those proposed constructions contradict the intrinsic record and are thus incorrect.

Similarly, VideoLabs’ constructions for the disputed terms in the fourth unrelated ’794 patent are contrary to the express definitions in the specification and the plain meaning of ordinary terms. But no legal or factual basis exists to abandon the clear meanings supplied by the patent and informed by the context of the claims.

II. THE DISPUTED CLAIM TERMS OF THE ASSERTED CODING PATENTS

A. The ’238 and ’878 Patents

The ’238 and ’878 patents relate to video compression and decompression, which are also known as coding and decoding, respectively. (’238 patent (Ex. 1) at 1:10–15.) Compression is often performed before video transmission or storage. And since video is merely a collection of pictures, video coding typically involves compressing each of those constituent pictures. (Mayer-Patel Decl. ¶¶ 28–30.) While many known techniques exist to code and decode pictures, most of

those techniques involve similar pre-processing steps. (*Id.* ¶¶ 31–36.) For example, those steps may include dividing up each picture into blocks of a certain size, performing predictions for each block based on temporal and spatial redundancies in adjacent blocks and frames, and conducting a mathematical process called orthogonal transformation for each block. ('238 patent at 1:17–26.) The orthogonal transformation process generates integer coefficients that represent spatial frequencies, and the properties of those integer coefficients can then be coded. (*Id.*) For example, the total number of those coefficients that are non-zero and the number of trailing 1's representing the number of +/- ones that commonly appear towards the end of a transformed and quantized coefficient vector may be coded. There are many known ways to code the properties of these coefficients, including variable length coding and arithmetic coding. (Mayer-Patel Decl. ¶ 36.) The three coding patents purport to relate to one of these two techniques—specifically, the '238 and '878 patents relate to variable length coding, while the '059 patent relates to arithmetic coding.

The '238 and '878 patents share a common specification and relate to coding and decoding specific parameters (also referred to as values) in compressed video using “variable length coding.” ('238 patent at Abstract.) Variable length coding was known in the prior art. (*Id.* at 1:39–42 (describing “variable length coding” of “the *existing* technique”);¹ Mayer-Patel Decl. ¶¶ 36–39.) This type of coding is named after the variable length code (VLC) tables used to code values. The tables contain variable length codewords for different values to be coded. ('238 patent at 1:28–33.) Codewords are simply representations of the values to be coded. Since the goal of variable length coding is to minimize the number of bits needed to code the values, VLC associates the shortest codewords with the most frequently occurring values, and longer codewords with values that occur less frequently. (Mayer-Patel Decl. ¶ 37.) As discussed above, the orthogonal

¹ All emphasis added unless otherwise noted.

transformation of each block of a picture generates integer coefficients, and properties of those integer coefficients may be coded. For example, since coefficients can have either zero or non-zero integer values, the coding process may code the number of non-zero coefficients in a block. (*Id.* ¶¶ 38–39.) The '238 and '878 patents are directed to VLC coding and decoding a specific value, namely the number of non-zero coefficients representing spatial frequency components obtained by orthogonal transformation² of each block of the video. (*See* '238 patent at 1:19–27; Mayer-Patel Decl. ¶¶ 40–41.) This specific coding and decoding is done by selecting a VLC table based on a prediction of the number of non-zero coefficients included in the current image block. (*See, e.g.*, '238 patent at 10:4–53.) That prediction can be based on the number of coefficients in the surrounding blocks, which assumes that the current block is similar to its surrounding blocks. (*See id.* at 9:34–41.) For example, one VLC table can be used if between 0 and 2 non-zero coefficients are expected to be coded, while a different VLC table can be used if between 3 and 5 non-zero coefficients are expected to be coded. (*Id.* at 10:34–38 (Chart 3).) In this manner, a VLC table can be selected that is most likely to have the shortest codewords for the most frequently occurring values. (Mayer-Patel Decl. ¶ 41.)

VideoLabs alleges that both patents read on the H.264 standard's implementation of Context-based Adaptive Variable Length Coding (CAVLC), a specific form of VLC. During the H.264 standard-setting process, however, the Joint Video Team (JVT) considered and *rejected* a proposal from Nokia—supported by the inventors of the '238 and '878 patents and the patents' original assignee Matsushita (currently known as Panasonic)³—that described the implementation of CAVLC claimed in the patents. Instead, the JVT adopted a proposal from RealNetworks that

² Spatial frequency generally describes the periodic distributions of light and dark in an image. Orthogonal transformation is an image transformation that is an element in image compression. (*See* Mayer-Patel Decl. ¶ 34.)

³ (*See, e.g.*, JVT-C0145 (Ex. 12) (submitted by Satoshi Kondo and Shinya Kadono at Matsushita).)

requires the *combined coding* of the number of non-zero coefficients *and* the number of trailing ones (T1s) at the same time.⁴ (See Commc’ns Standards Review, vol. 13, no. 25 (Ex. 7) at 39 (July 24, 2002) (stating JVT-C028 submitted by RealNetworks “is a little better than JVT-C088” submitted by Nokia, and that as a result, “JVT-C028 was adopted” based on the “technical and IPR situation”). Thus, while the ’238 and ’838 patent claims recite concepts that were explicitly rejected by H.264 as inferior, VideoLabs seeks to expand the scope of those claims to cover H.264 techniques that the patentee neither invented nor disclosed in its patents.

B. The Claim Construction Disputes for the ’238 and ’878 Patents

The ’238 and ’878 patents are descendants of two other patents with an identical specification.⁵ Those two ancestor patents are part of the H.264/AVC patent pool maintained by MPEG-LA. (Final August 1, 2022 AVC Attachment 1 (Ex. 9), at 20 (center column listing both “US 7,308,143” and “US 7,095,896”).) Amazon is a licensee to the patents in that pool.⁶ In an attempt to remove the ’238 and ’878 patents from the pool and assert them against the licensees such as Amazon, the patentee changed the claims focused solely on video coding in the pooled patents, to those of the ’238 and ’878 patents, which recite “audio processing unit” for coding/decoding *audio* in addition to video coding. Accordingly, the claims of the ’238 and ’878 patents recite functional audio processing limitations without corresponding structures in the specification, because those limitations were added after the fact to avoid the licensed H.264 patent pool.⁷

⁴ The trailing 1’s is another parameter that represents the number of +/- ones that commonly appear towards the end of a transformed and quantized coefficient vector. (See Mayer-Patel Decl. ¶ 39.)

⁵ Both the ’238 and ’878 patents are continuations of U.S. Patent 7,308,143, which issued from a divisional patent application of U.S. Patent 7,095,896.

⁶ Multiple Amazon entities, including Amazon Web Services, Inc., are licensed to MPEG-LA’s AVC/H.264 patent pool. (See, e.g., Licensees and Affiliates in Good Standing, MPEG-LA AVC/H.264 (Ex. 8), <https://www.mpegla.com/programs/avc-h-264/licensees/>, Nos. 65–66 (last accessed Aug. 10, 2022).)

⁷ (Compare Ex. 13, *MPEG LA Announces Terms of Joint H.264/MPEG-4 AVC Patent License*

1. “an audio processing unit configured to decode the separated coded audio data” / “an audio processing unit configured to code audio data to obtain coded audio data” (’238 and ’878 patents)

Term	Amazon’s Construction	VideoLabs’ Construction
“an audio processing unit configured to decode the separated coded audio data” (’238 patent, claim 1)	These terms are subject to 35 U.S.C. § 112, ¶ 6. <u>Function</u> : decode the separated coded audio data / code audio data to obtain coded audio data	No construction necessary <i>Alternatively</i> , if found to be subject to 35 U.S.C. § 112(f):
“an audio processing unit configured to code audio data to obtain coded audio data” (’878 patent, claims 1–4)	<u>Structure</u> : Indefinite	Function: “decode the separated coded audio data” / “code audio data” Structures: voice processing unit (ex305), and the specification’s discussions thereof, and equivalents thereof

The “audio processing unit” terms are governed by § 112, ¶ 6 because they are nothing more than black boxes that fail to connote any structure for performing the claimed functions. Because the specification fails to describe corresponding structure for these terms, the claims of the ’238 and ’878 patents are indefinite.

In § 112, ¶ 6, Congress limited “functional claiming,” the practice of claiming a result without disclosing how to accomplish it. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349–51 (Fed. Cir. 2015) (en banc) (imposing new standard of indefiniteness to address “proliferation of functional claiming untethered to § 112, para. 6 and free of the strictures set forth in the statute”); *Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013). Under the

(Nov. 17, 2003) at 1–2 (announcing patent holders, including Matsushita (Panasonic), “have reached agreement on the terms of a joint patent license for implementation and use of ITU-T H.264 and MPEG-4 Part 10 AVC”), https://www.mpegla.com/wp-content/uploads/n_03-11-17_avc.pdf, *with* Ex. 5, ’238 Patent File History, Oct. 26, 2007 Claims (initial claims 1–33 are directed to a “picture coding method” and do not recite “audio processing unit”), Sept. 29, 2008 Preliminary Amendment at 2–3 (cancelling all pending claims and adding new claim 34 reciting “audio processing unit”); Ex. 6, ’878 Patent File History, Oct. 25, 2007 Claims and Preliminary Amendment (initial claims 1–34 are directed to a “picture coding method” and do not recite “audio processing unit”), May 11, 2009 Preliminary Amendment at 2–4 (cancelling all pending claims and adding new claims 35–38 reciting “audio processing unit”).)

statute and the limited safe harbor it provides, a patentee can claim an invention by reciting the function it performs, but the scope of the patentee’s right of exclusion is expressly limited to the specific solutions disclosed in the specification. This reflects a straightforward application of the fundamental principle that a patentee cannot claim more than what he or she invented. *See MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1256 (Fed. Cir. 2012).

In *Williamson*, the Federal Circuit reinforced and strengthened the longstanding prohibition against functional claiming: if the claim does not identify the specific structure or acts sufficient to achieve a claimed result, then the specification must fill the void to limit the claim to the inventor’s specific solution. *Williamson*, 792 F.3d at 1350. Regardless of whether the word “means” is recited, § 112, ¶ 6 applies if a skilled artisan would not have understood the words of the claim “to have a sufficiently definite meaning as the name for structure.” *Id.* at 1349; *Digit. Retail Apps, Inc. v. H-E-B*, No. 6-19-cv-00167-ADA, 2020 WL 376664, at *2 (W.D. Tex. Jan. 23, 2020) (the standard is “whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function”). If the claim merely recites functions performed by unspecified black boxes, the claim is subject to the requirements of § 112, ¶ 6. *Williamson*, 792 F.3d at 1350–51.

“Unit” recited in the claims of the ’238 and ’878 patents is a nonce word, devoid of any structure. (*Id.* at 1350 (“Generic terms such as ‘mechanism,’ ‘element,’ ‘device,’ and other nonce words that reflect nothing more than verbal constructs” may invoke § 112, ¶ 6 because they “typically do not connote sufficiently definite structure”).) Indeed, the Patent Office identifies “unit” as one of the “non-structural generic placeholders” that typically invoke § 112, ¶ 6. Manual of Pat. Exam. Proc. § 2181 at ¶ I.A. And “[t]he Federal Circuit has rejected the argument that replacing the word ‘means’ with ‘unit’ or ‘device’ takes the limitations outside of the bounds of Section

112(f).” *Via Vadis, LLC v. Buffalo Ams., Inc.*, No. A-14-CV-808-LY, 2016 WL 5239626, at *5 (W.D. Tex. Sept. 20, 2016 (affirmed in part, reversed in part on other grounds, 815 F. App’x 539 (2020))); *see also Diebold Nixdorf, Inc. v. Int’l Trade Comm’n*, 899 F.3d 1291, 1296–98 (Fed. Cir. 2018) (construing functional black box term “cheque standby unit” under § 112, ¶ 6).

Pairing the nonce word “unit” with the purely functional modifier “audio processing,” as the disputed claim terms do, does not confer any structure on the claim limitations. *Intelligent Automation Design, LLC v. Zimmer Biomet CMF & Thoracic, LLC*, 799 F. App’x 847, 851 (Fed. Cir. 2020) (nonprecedential) (adjective qualifier did not provide sufficient structure to render limitation structural rather than functional) (citing *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1364–65 (Fed. Cir. 2013)). This is unsurprising, as “audio processing” only describes the function the “unit” performs and not its structure. *Optis Wireless Tech., LLC v. Huawei Device Co.*, No. 2:17-CV-123-JRG-RSP, 2018 WL 476054, at *32 (E.D. Tex. Jan. 18, 2018) (“processing” modifier provided no structural bounds for the nonce word “unit”). This is quintessential functional claiming that must be constrained by § 112, ¶ 6. *Id.*; *Huawei Techs. Co. Ltd. v. T-Mobile US, Inc.*, No. 2:16-cv-00057-JRG-RSP, 2017 WL 2691227, at *36–37 (E.D. Tex. June 22, 2017) (adjectives “selection” and “key derivation” did not add sufficient structure to claimed black box “module”); *Saint Lawrence Commc’ns LLC v. ZTE Corp.*, No. 2:15-CV-349, 2016 WL 6275390, at *19 (E.D. Tex. Oct. 25, 2016) (“spectral shaping” did not impart sufficient structure to nonce word “unit”). Indeed, the claims recite more than 10 different “units”; “audio processing” distinguishes the disputed terms from other “units” only by reference to the function the terms perform. (See ’238 patent, claim 1 (reciting a “data reading unit,” “demultiplexing unit” and “arithmetic decoding unit,” among other “units”)); *Digit. Retail Apps, Inc.*, 2020 WL 376664, at *4–5 (“first communications module” governed by § 112, ¶ 6 because patent used nonce word “module” to refer to various functions performed by software).

Nothing in the claims limits the “audio processing units” to any particular structure. Nor does the specification. Instead, the specification teaches that “the present invention” can be implemented broadly in any hardware, software, or steps. (’238 patent at 4:53–61 (“present invention [can be] realized” as a “method,” a “device,” or “a program [that] causes a computer to execute [such characteristic] steps”).) And because the audio processing limitations were added after the fact, the term “audio processing unit” is nowhere in the specification. (*See supra*, note 7.) The “audio processing units” are mere black boxes no different than “means.” *Williamson*, 792 F.3d at 1350.

Amazon’s expert, Dr. Ketan Mayer-Patel, had more than ordinary skill in the art at the time of the patents and is familiar with the knowledge and perceptions of one of ordinary skill in the art (POSITA). (Mayer-Patel Decl. ¶¶ 4–8, 11–14.) He confirms that “audio processing unit” was not a term of art and was not a known structure to a POSITA, let alone a structure for performing the claimed audio coding and decoding functions. (*Id.* ¶¶ 60–66); *Canon, Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546-JRG, 2020 WL 2098197, at *25–26, 28–29 (E.D. Tex. May 1, 2020) (“communication unit,” “connection unit,” and “detection unit” governed by § 112, ¶ 6 because claim language surrounding nonce word “unit” only described function, and the claim terms were not used by POSITAs to designate structure).

And while VideoLabs has identified dictionary definitions of “audio processor,” “encoder,” “decoder,” “video decoder,” and “codec,” those definitions cannot give the disputed terms sufficiently definite structures. (*See* Ex. 14, VideoLabs’ Extrinsic Evidence Disclosure at 6–10.) The patent claims do not use any of these words. The claims recite “audio processing unit”—not “audio processor” or “codec” or the other dictionary terms. “Inventors are masters of their claims, and the words they use to describe and claim their invention are decisive and binding.” *Bio-Rad Labs., Inc. v. Int’l Trade Comm’n*, 998 F.3d 1320, 1331 (Fed. Cir. 2021). Any structure that may

be conveyed by a different term such as “audio processor” cannot save the disputed claim terms from § 112, ¶ 6. (Mayer-Patel Decl. ¶ 61); *Optis Wireless Tech., LLC*, 2018 WL 476054, at *31 (“The term ‘processor’ may connote structure such as a central processor or a microprocessor. However, here the [claim] term is ‘processing unit,’ a term which may mean more. In fact, the specification makes clear that . . . embodiments of the invention are intended to encompass more than merely processors.”). Not only are VideoLab’s dictionary definitions irrelevant, but they are also contrary to the specification. For example, VideoLabs’ definitions of “audio processor” equate it to “an integrated circuit” and “an electronic device,” and its definitions of “encoder” and “decoder” equate these terms to a “device.” (Ex. 14, VideoLabs’ Extrinsic Evidence Disclosure at 6, 9–10; Mayer-Patel Decl. ¶¶ 64–65.) But the specification teaches the “units” of the “present invention” are broader and can be implemented not only as hardware, but also as software. (’238 patent at 4:53–61); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996) (extrinsic evidence cannot be used to contradict the specification). And the other definitions are also functional themselves and thus fail to provide any required structures. They merely repeat the tautology that encoders, decoders, and codecs are “any hardware or software” that encodes or decodes data, without any structural limitations. (VideoLabs’ Extrinsic Evidence at 6, 9–10; Mayer-Patel Decl. ¶¶ 62–63.) Just as the claimed “audio processing units,” the dictionary definitions are black boxes themselves—only indicating that the structure “could be in software or it could be in hardware”—and they similarly cannot connote sufficiently definite structure to escape § 112, ¶ 6 as a matter of law. *Williamson*, 792 F.3d at 1351 (“[T]he fact that one of skill in the art could program a computer to perform the recited functions cannot create structure where none otherwise is disclosed.”); *see also Digit. Retail Apps, Inc.*, 2020 WL 376664, at *5 (claim term that connotes “software” as the structure “is nowhere near the ‘sufficiently definite structure’ required” to avoid § 112, ¶ 6).

Because § 112, ¶ 6 applies to the “audio processing unit” terms, the specification must provide an algorithm clearly linked to the claimed functions, or the terms are indefinite. *Twin Peaks Software Inc. v. IBM Corp.*, 690 F. App’x 656, 664 (Fed. Cir. 2017) (nonprecedential) (to meet requirements of § 112, ¶ 6, specification must “clearly link or associate corresponding structure to the claimed function”); *Williamson*, 792 F.3d at 1352 (“We require that the specification disclose an algorithm for performing the claimed function.”); *Broadcom Corp. v. Amazon.com Inc.*, No. 16-1774 JVS (JCGx), 2017 WL 5151356, at *3 (C.D. Cal. Sept. 1, 2017) (“A corresponding structure is one that the specification or prosecution history ‘clearly links . . . to the function recited in the claim.’”) (quoting *Williamson*, 792 F.3d at 1351). The specification fails to disclose any algorithm that is clearly linked to the claimed functions of “decode the separated coded audio data” and “code audio data to obtain coded audio data.” (Mayer-Patel Decl. ¶¶ 67–70, 87.) As Dr. Mayer-Patel confirms, the specification does not disclose any algorithm for coding or decoding of audio. (*Id.*) Indeed, the specification barely mentions audio because the specification is about *video* coding, and the audio coding aspects were added to the claims after-the-fact to avoid inclusion into the licensed H.264 patent pool. (*See* ’238 patent at 1:10–53; *supra* note 7.)

And the alternative structure VideoLabs identifies is another black-box “unit”—“voice processing unit (ex305).” As Dr. Mayer-Patel explains, the voice processing unit ex305 of the patents only performs analog-to-digital and digital-to-analog conversion of voice data. (’238 patent at 35:19–21, 35:46–61, 36:18–22; Mayer-Patel Decl. ¶¶ 71–77.) Analog-to-digital and digital-to-analog conversion are not encompassed by the claimed functions. (Mayer-Patel Decl. ¶¶ 78–87.) Audio coding is compressing audio data so that it takes up less space, and audio decoding is decompressing the compressed audio data. (*Id.* ¶ 78–81; Ex. 24, Computer Graphics Dictionary (2002) at 137 (“decoder: Device or software that converts data in a coded (and usually compressed) form back to the original data state.”).) Indeed, VideoLabs admits in its complaint

that “encoding” and “decoding” refer to “the processes of compressing and decompressing content.” (First Am. Compl., Dkt. 33 ¶ 35.)

VideoLabs’ arguments in related proceedings confirm that the claimed audio coding and decoding functions do not encompass analog-to-digital or digital-to-analog conversion. Earlier this year, Dell filed petitions for *inter partes* review to cancel the claims of the ’238, ’878, and ’059 patents. In responding to Dell’s argument that two earlier Japanese applications to which the patents claim priority do not have written description for the “audio” claim terms, VideoLabs argued that a POSITA would have known about the G.723.1 audio codec.⁸ The G.723.1 audio codec is an industry standard for coding and decoding voice audio defined by the International Telecommunication Union (ITU). (Ex. 10, ITU-T Recommendation G.723.1 (March 1996) at Title (“Dual Rate Speech Coder for Multimedia Communications Transmitting at 5.3 and 6.3 kbit/s”), iii (“This Recommendation specifies a coded representation that can be used for compressing the speech or other audio signal component of multimedia services Both rates are a mandatory part of the encoder and decoder.”); Mayer-Patel Decl. ¶ 83.) The G.723.1 standard explicitly teaches that the audio coder and decoder do not perform any analog-to-digital or digital-to-analog conversion. (Ex. 10, ITU-T Recommendation G.723.1 at 2 (“The coder is designed to operate with a digital signal obtained by first performing telephone bandwidth filtering . . . of the analogue input The output of the decoder should be converted back to analogue by similar means.”); Mayer-Patel Decl. ¶¶ 84–85.) And any expert testimony offered by VideoLabs “cannot supplant the total absence of structure from the specification” for performing the claimed functions. *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1302 (Fed. Cir. 2005); *Blackboard, Inc. v.*

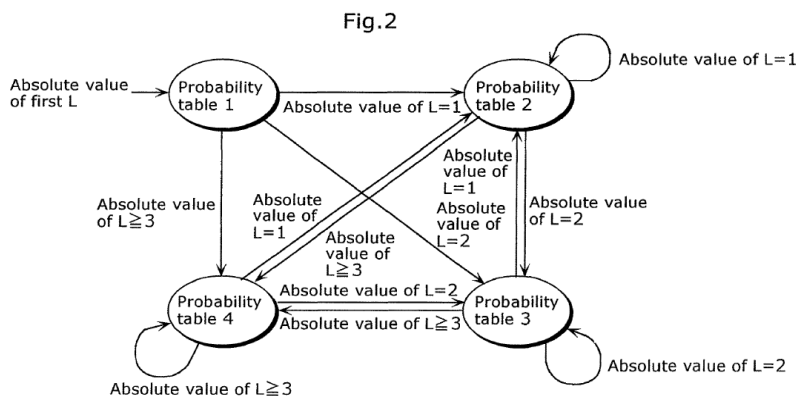
⁸ (Ex. 17, ’238 POPR at 6–7; Ex. 18, ’878 POPR at 6–7; Ex. 19, ’059 POPR at 38–39; *see* Ex. 17, ’238 POPR at 40–55 (arguing that the Japanese applications disclose coding and decoding of audio data); Ex. 18, ’878 POPR at 41–55 (same); Ex. 19, ’059 POPR at 41–53 (same); Mayer-Patel Decl. ¶¶ 82–83.)

Desire2Learn, Inc., 574 F.3d 1371, 1385 (Fed. Cir. 2009) (“A patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function.”).

Because the specification fails to disclose any algorithm clearly linked to the claimed audio coding and decoding functions, the “audio processing unit” terms are indefinite.

C. The '059 Patent

Like the '238 and '878 patents, the '059 patent is directed to coding and decoding certain values in compressed video. ('059 patent (Ex. 3) at 1:11–14.) The '059 patent describes a specific implementation of a well-known coding technique called arithmetic coding. (*See id.* at 1:25–29 (in a section entitled “Background Art,” describing the existing H.263 video coding standard as employing “a mode using arithmetic coding”); Mayer-Patel Decl. ¶¶ 42–52.) As explained above, there are many ways to code the values generated by the orthogonal transformation of each block and arithmetic coding is simply an alternative to variable length coding. Arithmetic coding can achieve greater compression by minimizing the number of bits used to code values. ('059 patent at 1:30–44.) As part of the prior art “existing technique” described in the patent and depicted in Figure 2, (*id.* at 1:57–59), arithmetic coding involves switching between “probability tables” depending on the value of each previously coded coefficient. (*See id.* at 1:37–2:5.) As Figure 2 reproduced below illustrates, the prior art technique permits switching in two directions—i.e.,



either going from a table with a lower number to a table with a higher number or vice-versa. (*Id.* at Fig. 2 (showing arrows in *both* ascending and descending table number directions between probability tables 2 and 3, 3 and 4, and 2 and 4); Mayer-Patel Decl. ¶¶ 43–47.)

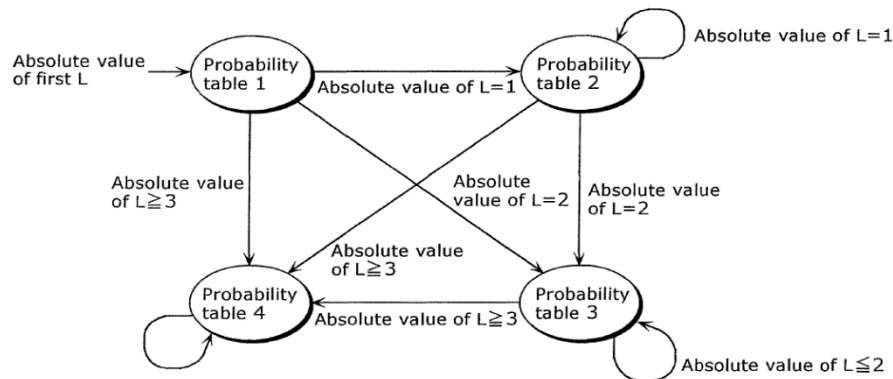
The purported improvement of the patent is to switch tables in only a single direction from a table with a lower table number to a table with a higher table number:

Thus, as described above, in the variable length coding method *according to the present invention, a probability table to be used is switched to another one in one direction* when there exists, in the arithmetic-coded coefficient values, an absolute value that exceeds a predetermined coefficient value. *From then on, even if the absolute value of a coefficient value becomes smaller than such predetermined threshold value, such coefficient value will be arithmetic-coded without switching a probability table to be used in the opposite direction.*

(’059 patent at 2:56–66.)

This one-directional switching from a table with a lower number to a table with a higher number is shown in Figure 7 of the ’059 patent and the patent refers to it as switching in “one direction.” (*See id.* at 6:50–57; *id.* at 12:62–64; Mayer-Patel Decl. ¶¶ 48–52.)

Fig.7



D. The Claim Construction Disputes for the ’059 Patent

The parties dispute what switching probability tables in “one direction” means. In addition, the parties dispute whether two other groups of terms in that patent are governed by Section 112,

¶ 6 and are indefinite for lacking sufficient corresponding structure in the specification. Those terms are (1) “an audio coding unit configured to code an audio signal” / “an audio decoding unit configured to decode audio data;” and (2) “a data reading unit configured to read the multiplexed data from said recording medium.”

1. “to switch between the plurality of probability tables in a predetermined one direction” / “the switching between the plurality of probability tables (i) is performed in a predetermined one direction” (’059 patent)

Term	Amazon’s Construction	VideoLabs’ Construction
“to switch between the plurality of probability tables in a predetermined one direction” / “the switching between the plurality of probability tables (i) is performed in a predetermined one direction” (’059 patent, claims 1–4)	to switch from a probability table with a smaller table number to a probability table with a larger table number (i.e., in ascending order of probability table numbers)	No construction necessary

This claim term requires switching between probability tables in a predetermined “one direction” as Figure 7 of the patent illustrates and the corresponding disclosure in the specification describes. To transition from one probability table to another, the patent describes assigning numbers to the probability tables. For example, the specification proposes using four probability tables, numbered 1–4. (’059 patent at 6:20–30, Fig. 7.) The patent explains that “the arithmetic coding unit 205 switches to another probability table for use, depending on the table number of a probability table used for coding the absolute value of the previous coefficient value L as well as on such absolute value.” (*Id.* at 6:20–24.) The patent defines “switch[ing] in one direction” as switching “from a probability table with a smaller table number to a probability table with a larger table number” and emphasizes that this concept is what “distinguishes the present invention from the

existing technique”:

As described above, the probability tables are *switched in one direction, that is, from a probability table with a smaller table number to a probability table with a larger table number*. . . . This is the point that distinguishes the *present invention* from the *existing technique*.

(*Id.* 6:50–57.) Later in the specification, the patentee again employs the same definition word-for-word to define switching in “one direction,” by stating:

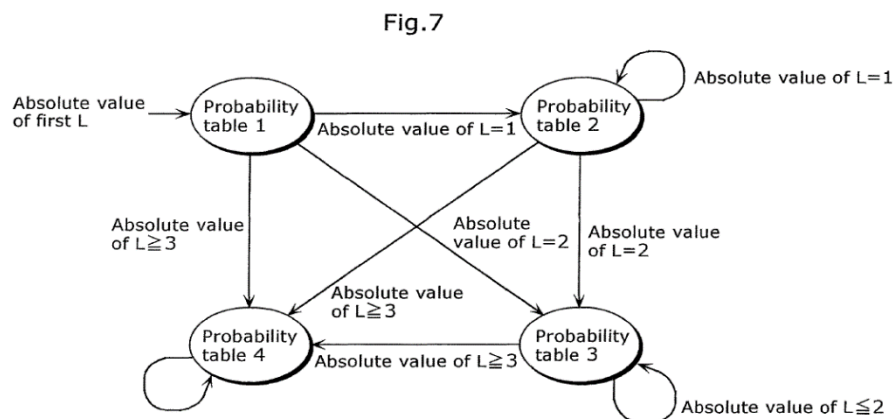
As shown above, the probability tables 1–4 are *switched in one direction, that is, from a probability table with a smaller table number to a probability table with a larger table number*.

(*Id.* 12:62–64.) The ’059 patent specification’s use of “that is” signals an intent to define what it means for “probability tables [to be] switched in one direction.” *See, e.g., TF3 Ltd. v. Tre Milano, LLC*, 894 F.3d 1366, 1372 (Fed. Cir. 2018) (holding that “that is” “signals an intent to define the word to which it refers” and that “it is not reasonable to read the claims more broadly than the description in the specification”); *Trading Techs. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1353 (Fed. Cir. 2010) (holding that “[t]he inventors acted as their own lexicographers and defined the word ‘static’” by stating in the specification that “[t]he values in the price column are static; that is, they do not normally change positions unless a re-centering command is received”); *Guardant Health, Inc. v. Found. Med., Inc.*, No. 17-1616-LPS-CJB, 2019 WL 4233598, at *7 (D. Del. Sept. 6, 2019) (holding “[t]he patentee’s use of ‘that is’ here clearly signals an intent to define what it means to be ‘non-uniquely tagged’”).

The ’059 patent illustrates the distinction between “the present invention” and the “existing technique” in its description of Figures 2 and 7. (*Compare* ’059 patent at Fig. 7 (using arrows to illustrate switching only in *one* ascending direction—from a probability table with a smaller table number to a probability table with a larger table number), *with id.* at Fig. 2 (depicting the prior art “existing technique” where arrows illustrate switching between probability tables in *both* an

ascending and descending order of table numbers).) The prior art “existing technique” is described with reference to Figure 2. (*Id.* at 3:55–57 (“FIG. 2 is a transition diagram showing a method of switching between probability tables according to an *existing technique*.”); *id.* at 1:57–2:29.) Figure 2 permits (i) switching from a probability table with a larger table number to a probability table with a smaller table number (or vice versa); and (ii) switching between the probability tables in the opposite direction. (*Compare, e.g., id.* at Fig. 2 (reproduced above, showing arrows in *both* ascending and descending table number directions between probability tables 2 and 3, 3 and 4, and 2 and 4), *with id.* at Fig. 7 (reproduced below, showing arrows in only *one* ascending direction, i.e., from a probability table with a smaller table number to a probability table with a larger table number).) The patent explains that “there is a problem with the use of the aforementioned existing technique” because by switching to a lower number probability table, the “existing technique” is inefficient for coding subsequent coefficients, because coefficient absolute values tend to increase as coding progresses from high frequencies to low frequencies in a block. (*Id.* at 2:14–25; Mayer-Patel Decl. ¶¶ 48, 142.) To solve that problem with the “existing technique,” the patent proposes switching probability tables in *only* one ascending direction of probability table numbers. (*See, e.g.,* ’059 patent at 6:50–57, 12:62–64; Mayer-Patel Decl. ¶¶ 49–52, 140–144.)

Specifically, the “invention” is described with reference to Figure 7 (reproduced below).



It illustrates four probability tables, each numbered 1–4. ('059 patent at 6:25–30, 11:66–12:5, Fig. 7.) The patent explains that the arithmetic coding unit starts with probability table 1 for the first coefficient value. (*Id.* at 6:17–20, 12:16–18.) Thereafter, “for a subsequent coefficient value *L*, the arithmetic coding unit 205 switches to another probability table for use, depending on the table number of a probability table used for coding the absolute value of the previous coefficient value *L* as well as on such absolute value.” (*Id.* at 6:20–24; *see also id.* at 12:25–33.) For example, if the coding process starts with probability table 1 for the first coefficient value and *L*=2, then the next coefficient is coded using probability table 3. But after that transition to probability table 3, if *L*=1, the coding process does *not* switch in a descending direction of probability table numbers to probability table 2, but instead remains at probability table 3. Next, if *L*=3, the coding process switches in an ascending direction from probability table 3 to probability table 4. Thus, according to the patent, switching occurs only in one ascending direction of probability table numbers.

“More specifically,” the specification describes that the probability tables are switched from a probability table with a smaller table number to a probability table with a larger table number, i.e., they are switched in “one direction” only. ('059 patent at 6:31–52, Fig. 7; *see also id.* at 12:33–62–64.) Indeed, the only difference between Figure 7 depicting the “invention” and the prior art “existing technique” of Figure 2 is that in Figure 7, the probability tables are strictly “switched in one direction, *that is*, from a probability table with a smaller table number to a probability table with a larger table number.” (*Id.*; Mayer-Patel Decl. ¶ 52.)

The patent describes no other “one direction” in which the “probability tables” can be switched. “Probability tables” are merely abstract data structures that collect and present information. (Mayer-Patel Decl. ¶¶ 145–46.) Those “probability tables” have no inherent direction with respect to each other that would make it possible to “switch” between them “in . . . one direction” as claimed. (*Id.* ¶ 146.) Thus, for switching between probability tables “in a predetermined

one direction” to have a reasonably certain meaning, those abstract “probability tables” must be assigned labels or identifiers so that “predetermined one direction” can be defined in terms of those assigned labels / identifiers. (*Id.* ¶¶ 146–47.) The ’059 patent does just that—the specification labels the probability tables numerically with table numbers and expressly defines switching in “one direction” as switching “from a probability table with a smaller table number to a probability table with a larger table number.” (*See, e.g.*, ’059 patent, 6:50–57; 12:62–64.) Numerically labeling the probability tables and switching between them by moving only from a smaller probability table number to a larger probability table number is the only disclosure in the patent of switching in “one direction.” (*See id.*; Mayer-Patel Decl. ¶ 147.) Other theoretical notions of direction—such as up/down, clockwise/counterclockwise, left/right, A to Z—are irrelevant to the issue at hand because they have no written description support in the patent. *See, e.g., TF3 Ltd.*, 894 F.3d at 1372 (holding that “it is not reasonable to read the claims more broadly than the description in the specification”). And without an adequate description in the patent, such theoretical directions are abstract and meaningless in the context of how the claimed switching would be performed on a computer. (Mayer-Patel Decl. ¶ 147 (explaining how such directions are abstract and meaningless when implemented on a computer).)

The “one direction” also cannot merely refer to switching between the tables according to the remainder of the claim language. (*Id.* ¶¶ 148–149.) Indeed, the claimed switching in “one direction” must specify how you move from one probability table to the next, and not just that you switch between tables and do not re-use a previously used probability table, because not re-using a probability table is separately recited in the claims. (’059 patent at 22:8–17 (claiming “switch[ing] between the plurality of probability tables in a predetermined one direction within each block *such that each of the probability tables . . . is not used within each block after switching to the new probability table*”); *id.* at 24:43–50 (claiming “the switching between the plurality of

probability tables (i) is performed in a predetermined one direction within each block *such that each of the probability tables . . . is not used within each block after switching to the new probability table*”).) And “meaning should be given to all of a claim’s terms.” *Dell Inc. v. Acceletron, LLC*, 818 F.3d 1293, 1300 (Fed. Cir. 2016) (internal citations omitted).

The intrinsic evidence compels the conclusion that the claimed switching in “one direction” should be construed as defined twice by the ’059 patent as “switch[ing] . . . from a probability table with a smaller table number to a probability table with a larger table number” (i.e., in ascending order of probability table numbers). (*See* Mayer-Patel Decl. ¶¶ 140–49.) Amazon’s construction tracks the definition of the term and is thus correct.

VideoLabs, however, attempts to distance the claims from the specification’s definition by proposing its “plain and ordinary” non-construction. It does so—yet again—to attempt to save its infringement claims. VideoLabs alleges that the ’059 patent covers H.264’s implementation of Context Adaptive Binary Arithmetic Coding (CABAC). The ’059 patent tracks a proposal to the H.264 standard-setting body by the named inventors made on behalf of the original assignee, Matsushita Electric Industrial (which later became Panasonic). (*See* JVT-C031 (Ex. 11) (submitted by Satoshi Kondo and Shinya Kadono).) Figure 2 of the proposal matches Figure 7 of the ’059 patent. (*See id.* § 2.2 (explaining “Figure 2 shows the status transition between the contexts in the proposed method. As shown in Figure 2, there are no transitions from one context to another [sic] context that has smaller number”).) That proposal was rejected. (*See* Commc’ns. Standards Review, vol. 13, no. 25 (Ex. 7), at 40 (July 24, 2002) (stating JVT-C031 submitted by Matsushita Electric Industrial “was not accepted”).) VideoLabs now seeks to eliminate the defining “one direction” requirement in the claims to read on the H.264 standard.

2. “an audio coding unit configured to code an audio signal” / “an audio decoding unit configured to decode audio data” (’059 patent)

Term	Amazon’s Construction	VideoLabs’ Construction
“an audio coding unit configured to code an audio signal” (’059 patent, claims 1-4) “an audio decoding unit configured to decode audio data” (’059 patent, claims 1-2)	These terms are subject to 35 U.S.C. § 112, ¶6. <u>Function</u> : code an audio signal / decode audio data <u>Structure</u> : Indefinite.	No construction necessary <i>Alternatively</i> , if found to be subject to 35 U.S.C. § 112(f): Function: “code an audio signal” / “decode audio data” Structures: voice processing unit (ex305), and the specification’s discussions thereof, and equivalents thereof.

Like the ’238 and ’878 patents, the ’059 patent is a divisional of a patent in the H.264/AVC patent pool to which Amazon is a licensee.⁹ And just like the ’238 and ’878 patents, the claims of the ’059 patent were drafted to skirt the patent pool by adding to the claims black-box functional “audio coding/decoding units” for coding or decoding audio. These terms recite audio coding and decoding functions similar to the claimed functions of the “audio processing unit” terms in Section II.B. For the same reasons, these terms do not convey any definite structure because they rely on the nonce word “unit” coupled with functional descriptors that do not provide any structure. *Diebold Nixdorf, Inc.*, 899 F.3d at 1296–98; *Digit. Retail Apps, Inc.*, 2020 WL 376664, at *4–5. The “audio coding unit” and “audio decoding unit” are distinguished from eight other “unit” terms in the claims, purely by reference to the functions they perform. (*See, e.g.*, ’059 patent, claim 1); *Digit. Retail Apps, Inc.*, 2020 WL 376664, at *4–5. The specification does not mention any “audio coding/decoding unit” and instead broadly proclaims that the invention can be implemented as any

⁹ (Final August 1, 2022 AVC Attachment 1 (Ex. 9), at 20 (third column listing “US 7,742,528”); Licensees and Affiliates in Good Standing, MPEG-LA AVC/H.264 (Ex. 8), <https://www.mpeg-la.com/programs/avc-h-264/licensees/>, Nos. 65–66 (last accessed Aug. 10, 2022).)

hardware, software, or method. ('059 patent, 3:37–50.) Because these “units” are black boxes devoid of any structure, the claim terms are governed by § 112, ¶ 6. Dr. Mayer-Patel confirms that the “audio coding unit” and “audio decoding unit” terms were not used in the art, and would not have conveyed any structure to a POSITA. (Mayer-Patel Decl. ¶¶ 90–95); *see Canon, Inc.*, 2020 WL 2098197, at *25–26, 28–29.

None of the “encoder,” “decoder,” “video decoder,” or “codec” definitions identified by VideoLabs apply to the claim terms here, because the claims recite different terms: “audio coding unit” and “audio decoding unit.” (*See* Ex. 14, VideoLabs’ Extrinsic Evidence Disclosure at 8–10; Mayer-Patel Decl. ¶¶ 92–93.) Just as the word “processor” is not the same as “processing unit,” VideoLab’s dictionary-defined words do not have the same meaning as “audio coding unit” and “audio decoding unit.” (Mayer-Patel Decl. ¶ 93); *see Optis Wireless Tech., LLC*, 2018 WL 476054, at *31 (while “processor” may connote structure, claim term “processing unit” does not have the same meaning as “processor”). Nor do VideoLabs’ definitions provide any structure because they are written in purely functional terms, stating that encoders and decoders include “any hardware and software” that performs certain functions. (Ex. 14, VideoLabs’ Extrinsic Evidence Disclosure at 9–10; Mayer-Patel Decl. ¶ 94.) “[A]ny hardware or software” that performs the claimed function is not sufficiently definite structure to skirt the application of § 112, ¶ 6. *Williamson*, 792 F.3d at 1351; *Digit. Retail Apps, Inc.*, 2020 WL 376664, at *5.

Because the claims provide insufficient structure for performing the claimed functions, the specification must describe an algorithm for coding an audio signal and decoding audio data to satisfy the definiteness requirement. *Williamson*, 792 F.3d at 1352; *Twin Peaks*, 690 F. App’x at 664. There is no such algorithm in the specification. (Mayer-Patel Decl. ¶¶ 96–110.) At most, the specification discloses the *existence* of a “coded bit stream of voice data,” which is the *result* of an algorithm nowhere described in the specification. ('059 patent at 20:8–14.) This disclosure

is not enough to satisfy the definiteness requirement. *Aristocrat Techs., Austl. PTY Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1335 (Fed. Cir. 2008) (describing “the results of the operation of an unspecified algorithm” is insufficient to satisfy § 112, ¶ 6); *Arendi S.A.R.L. v. LG Elecs., Inc.*, No. CV 12-1595-LPS, 2019 WL 3891150, at *11 (D. Del. Aug. 19, 2019) (§ 112, ¶ 6 terms indefinite where “specification fails to disclose any actual *algorithm*—whether in prose, as a mathematical formula, as a flow chart, or in any other suitable format” (emphasis in original)). And as explained above, VideoLabs’ only proposed structure, voice processing unit (ex305), does not code or decode audio data. (Mayer-Patel Decl. ¶¶ 99–109); *see* Section II.B.1.

Because the specification discloses no algorithm clearly linked to the functions of coding an audio signal and decoding audio data, the “audio coding unit” and “audio decoding unit” terms are indefinite.

3. “a data reading unit configured to read the multiplexed data from said recording medium” (’059 patent)

Term	Amazon’s Construction	VideoLabs’ Construction
“a data reading unit configured to read the multiplexed data from said recording medium” (’059 patent, claim 1)	This term is subject to 35 U.S.C. § 112, ¶ 6. <u>Function</u>: read the multiplexed data from said recording medium <u>Structure</u>: Indefinite.	No construction necessary <i>Alternatively</i>, if found to be subject to 35 U.S.C. § 112(f): Function: read the multiplexed data from said recording medium Structures: computer system (Cs or ex111), PDA (ex112), camera (ex116 or ex113), cellular phone (ex114 or 115), STB (ex407), recording/reproducing unit (ex307), LSI (ex117), and/or reproduction apparatus (ex403), and the specification’s discussions thereof, and equivalents thereof

The ’059 patent claims also attempt to avoid the H.264/AVC patent pool by reciting

another black box—a “reading unit” that reads multiplexed data, which is described nowhere in the specification. The term must be construed under § 112, ¶ 6 because the claim describes the “data reading unit” only by reference to the function it performs, without providing any definite structure for performing that function. As with the “audio” units, the nonce word “unit” does not indicate any structure, and the purely functional “data reading” modifier fails to give the term any structural bounds. *Diebold Nixdorf, Inc.*, 899 F.3d at 1296–98; *Digit. Retail Apps, Inc.*, 2020 WL 376664, at *4–5; (Mayer-Patel Decl. ¶¶ 113–15). “Multiplexed data” refers to multiple streams of data that are combined into one signal. (Mayer-Patel Decl. ¶¶ 56, 112.) Specifically, the claimed “multiplexed data” is “obtained by multiplexing (i) coded picture data that is obtained by coding a moving picture and (ii) audio data that is obtained by coding an audio signal.” (’059 patent, claim 1.) The nature of this data does not convey any structure for the “data reading unit.” (Mayer-Patel Decl. ¶ 113.) The claim term was not used in the art, and it did not have any structural meaning in the art either at the time of the patent. (*Id.*)

Accordingly, because § 112, ¶ 6 governs, the specification must provide an algorithm clearly linked to the claimed function of “read[ing] the multiplexed data from said recording medium,” or the term is indefinite. *Williamson*, 792 F.3d at 1352; *Twin Peaks*, 690 F. App’x at 664. But the specification discloses no such algorithm, and none of VideoLabs’ proposed structures are clearly linked to the claimed function. (Mayer-Patel Decl. ¶¶ 116–37.)

As Dr. Mayer-Patel explains, the specification does not describe any of VideoLabs’ proposed structures as performing the function of “read[ing] the multiplexed data from said recording medium.” (*Id.* ¶¶ 120–36.) The specification describes cellular phone ex114 and ex115 as decoding and transmitting picture data, but it does not describe the cellular phone or any of its components as reading multiplexed audio and video data. (’059 patent at 17:49–50, 18:18–21, 18:28–30; Mayer-Patel Decl. ¶¶ 126–32.) The specification discloses that cellular phone ex115 includes

a “multiplexing/demultiplexing unit ex308,” which “separates the multiplexed data into a coded bit stream of picture data and a coded bit stream of voice data.” (’059 patent at 18:63–19:7, 20:1–11.) This demultiplexing unit is not and cannot be the corresponding structure for the claimed function. The claim requires that *reading* multiplexed data and *demultiplexing* this data are performed by two distinct “units” acting sequentially: “a data reading unit configured to *read the multiplexed data* from said recording medium,” and “a demultiplexing unit configured to *demultiplex the multiplexed data read by said data reading unit* into the coded picture data and the audio data.” (*Id.*, claim 1; Mayer-Patel Decl. ¶¶ 127–32.) Under well-settled Federal Circuit law, different claim terms are presumed to have different meanings. *Chicago Bd. Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1369 (Fed. Cir. 2012); *CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000). Nothing in the patent suggests otherwise here. (Mayer-Patel Decl. ¶ 132.) The patentee explicitly distinguished between the “data reading unit” and the “demultiplexing unit” by giving these units different names, different functions, and describing how they interact with each other in the same claimed system. (See ’059 patent, claim 1.) Thus, the demultiplexing unit in the cellular phone ex115 of the patent is not clearly linked to the function of “read[ing] the multiplexed data from said recording medium” and cannot be the required structure. (*Id.*; Mayer-Patel Decl. ¶¶ 127–32.)¹⁰

And the demultiplexing unit is not a corresponding structure for a second, independent

¹⁰ Indeed, as Dr. Mayer-Patel explains, *reading* multiplexed data and *demultiplexing* this data are different processes that have different inputs, different outputs, and different objectives. (Mayer-Patel Decl. ¶¶ 128–31.) Reading involves retrieving data from a specific memory location and outputting the data for processing. (*Id.*; Ex. 22, *Modern Nonmechanical Memory*, <https://www.allaboutcircuits.com/textbook/digital/chpt-15/modern-nonmechanical-memory>; Ex. 23, *Digital Memory Terms and Concepts*, <https://www.allaboutcircuits.com/textbook/digital/chpt-15/digital-memory-terms-concepts>.) Demultiplexing is passively receiving multiplexed data over an input channel and selectively distributing the data onto two or more output channels. (Mayer-Patel Decl. ¶¶ 130–31; Ex. 29, *Demultiplexers*, VL-AMZN_00003106 – 3111 at 3106.)

reason: it does not obtain multiplexed data “from [a] recording medium” as required by the claimed function. (Mayer-Patel Decl. ¶ 127.) Instead, the demultiplexing unit receives multiplexed data from “modem circuit unit ex306” which “performs inverse spread spectrum processing” on a signal that is received by an antenna. (’059 patent at 20:1–7.) The specification does not describe that this multiplexed data is stored in or read from any “recording medium” before it reaches the demultiplexing unit. (*See id.*)¹¹

None of VideoLabs’ other proposed structures are clearly linked to the claimed function. The computer ex111 codes and decodes moving picture data, but does not read “the multiplexed data” of the claim, which is “obtained by multiplexing (i) coded *picture data* that is obtained by coding a *moving picture* and (ii) *audio data* that is obtained by coding an audio signal.” (’059 patent at 18:10–12, 18:28–30, claim 1; Mayer-Patel Decl. ¶ 122.) The specification describes using a general-purpose computer system “Cs” to write a variable length coding computer program to a flexible disk (floppy disk) via a flexible disk drive, and it also describes transferring the same computer program from the flexible disk to the computer system Cs via the flexible disk drive. (’059 patent, claim 1, 16:59–17:27.) But this computer program is a single stream of computer code—not the multiplexed audio and video data recited in the claim. (*Id.*; Mayer-Patel Decl. ¶ 123.) The personal digital assistant (PDA) ex112 decodes a single stream of picture data, but does not read multiplexed data. (’059 patent at 18:28–30, *see id.* at 18:1–21; Mayer-Patel Decl. ¶ 124.) The camera ex113 and ex116 codes and decodes moving picture data, but it does not read multiplexed data. (’059 patent at 18:5–12, 18:28–30; Mayer-Patel Decl. ¶ 125.) The set top box (STB) ex407 decodes a single “coded bit stream of video information,” but it does not read

¹¹ And again, any expert testimony offered by VideoLabs cannot make up for the lack of disclosure of an algorithm in the specification that is clearly linked to the claimed function. *Default Proof Credit Card Sys., Inc.*, 412 F.3d at 1302.

multiplexed data. ('059 patent at 20:35–54; Mayer-Patel Decl. ¶ 133.) The recording/reproducing unit ex407 is never described in the specification as reading multiplexed data. (*See* '059 patent at 18:63–19:7, Fig. 16.) Indeed, the specification does not provide any guidance about this “unit,” except that it is a part of cellular phone ex115 and it is connected to two other components: recording medium ex207 and synchronous bus ex313. (*Id.*; Mayer-Patel Decl. ¶ 134.) The LSI ex117 is a semiconductor chip that codes moving picture data, but it does not read multiplexed data. ('059 patent at 18:9-14, 18:18-21; Mayer-Patel Decl. ¶ 135.) The reproduction apparatus ex403 reads and decodes a single bit stream of *video* data, but it does not read the multiplexed audio and video data recited in the claim. ('059 patent at 20:44–49; Mayer-Patel Decl. ¶ 136.)

Because the specification fails to provide an algorithm clearly linked to the function of reading the multiplexed data from said recording medium, this term is indefinite.

III. THE DISPUTED CLAIM TERMS OF THE '794 PATENT

A. The '794 Patent

The '794 patent is directed to synchronizing content-related first and second data segments contained in distinct data files. ('794 patent (Ex. 4), Abstract.) For example, a video data stream in one file and an audio data stream in another file can be synchronized with each other. (*See id.* at 3:67–4:8.) The patent explains that “the synchronization is controlled by way of the predefined assignment rule,” which ties each one of the data segments in one file to one of the data segments in the other file. (*Id.* at 2:39–40.) Thus, for example, each video segment can be directly tied to its corresponding audio segment such that during playback both are played at the same time. “In this way, content-related data segments can be output together according to their chronological sequence. This is of advantage, since the assignment is carried out without the use of timestamps.” (*Id.* at 2:40–43.)

B. The Claim Construction Disputes for the '794 Patent

The parties dispute two claim terms: “content related . . . data segments” and “output together.” For the first disputed term, “content-related . . . data segments,” VideoLabs ignores the patentee’s explicit definition of “content-related,” which informs the meaning of this term. Amazon’s construction, however, captures the patentee’s definition in the specification.

For the second disputed term, “output together,” VideoLabs merely appends “together” to its construction of “output,” which renders the term vague and ambiguous. Amazon’s construction, on the other hand, recognizes that the data segments must be output *at the same time* to achieve the claimed objective of *synchronizing* two sets of data segments.

1. “content-related . . . data segments” ('794 patent)

Term	Amazon’s Construction	VideoLabs’ Construction
“content-related . . . data segments” '794 patent, claims 1, 3, 7–9	data segments that have a syntactical meaning within their respective data file	“data segments ordered in a file such that they will present the file’s contents in their intended presentation order when rendered sequentially”

Both parties’ constructions for “content-related . . . data segments” repeat the term “data segments.” Thus, the sole dispute between the parties is what “content-related” means. That term is expressly defined in the '794 patent and Amazon’s construction tracks that definition. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (“[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.”) Indeed, the '794 patent specification expressly provides:

The term “content-related” is understood to mean that first and second data segments have a syntactical meaning within the respective data file, such as e.g. a plurality of succeeding second data segments represent the speech signal of a specific speaker within a dialog sequence.

(’794 patent, 4:14–19.) When a term in the specification “is set off by quotation marks,” as is the case here, it is “often a strong indication that what follows is a definition.” *Sinorgchem Co., Shandong v. Int’l Trade Comm’n*, 511 F.3d 1132, 1136 (Fed. Cir. 2007); *SEVEN Networks, LLC v. Apple Inc.*, No. 2:19-CV-115-JRG, 2020 WL 1536152, at *41 (E.D. Tex. Mar. 31, 2020) (holding that when the patent “define[d] what an activity session ‘is,’ . . . the quotation marks around ‘activity session’ reinforce[d] the clarity of the lexicography”). “Moreover, the word ‘is,’ again a term used here in the specification, may ‘signify that a patentee is serving as its own lexicographer.” *Sinorgchem*, 511 F.3d at 1136 (internal citations omitted). And, the Federal Circuit has held that the specification expressly defines a term when it states what the term “shall be understood to mean.” *Chevron U.S.A. Inc. v. Univ. of Wy. Research Corp.*, 978 F.3d 1361, 1366 (“Here, the ‘express language’ of the specification ‘requires’ that the term ‘gradually’ ‘*shall be understood to mean* that the alkane mobile phase solvent is incrementally removed from the column over a period of time by continuously adding a final mobile phase solvent”) (emphasis in original, citations omitted); *see also Vapor Point LLC v. Moorhead*, No. 4:11-CV-4639, 2013 WL 11275459, *13 (S.D. Tex. Dec. 18, 2013) (concluding that “the claim term is governed by an express definition” where that claim term is “set off by quotation marks in the specification” and followed by the word “mean”). Here, there are at least three markers of lexicography: (1) “content-related” is set off by quotation marks; (2) the patentee used the word “is” to define the term “content-related”; and (3) the patentee explicitly states what “content-related” is “understood to mean.” Accordingly, the patentee’s lexicography must control the definition of this term.

VideoLabs’ construction, however, has no basis in the intrinsic record and is little more than a word salad of vaguely related terms. VideoLabs’ construction requires taking data segments and “*order[ing]* [them] in a file” such that the contents will be presented in an “intended presentation *order* when rendered sequentially.” But data segments being related in content (i.e.,

“content-related”) has nothing to do with an order of any kind. Instead, it has everything to do with their “content,” and thus a syntactical meaning within the respective data file, as the patentee’s definition for “content-related” confirms. (*See* ’794 patent, 4:14–19.) Because the ’794 patent specification defines “content-related” and that definition must control, the term “content-related . . . data segments” should be construed as “data segments that have a syntactical meaning within their respective data file,” as Amazon proposes.

2. “output together” (’794 patent)

Term	Amazon’s Construction	VideoLabs’ Construction
“output together” ’794 patent, claims 1, 3, 5, 7–9, 12–13, 15–17, and 20–21.	the first and second data segments are transmitted, stored together or passed on to a processing unit at the same time	No construction necessary or “transmitted, stored together, or passed on to a processing unit together”

The parties agree that another claim term “output” must have the meaning that the patentee gave it in the specification:

In this context the term “output” is understood to mean that first and second data segments are, for example, transmitted, stored together or passed on to a processing unit.”

(’794 patent, 2:43–46.)

The disputed term “output together” is related and “together” must have its plain and ordinary meaning: the data segments are output “at the same time.” Indeed, dictionaries confirm that in this context “together” means “at the same time.” (*See, e.g., Together, The American Heritage Dictionary of the English Language* (4th ed. 2000) (Ex. 25) (“Together” means “6. Simultaneously: *The bells rang out together.*”); *Together*, (2003) (Ex. 26) (“Together” means “at the same time”); *Together, The New Oxford American Dictionary* (2001) Ex. 27) (“Together” means “2. at the same time: *they both spoke together.*”).) The surrounding claim language also confirms that “together” must mean “at the same time.” For example, the preambles of both claims 1 and 9

require “synchronizing content-related first data segments . . . and content-related second data segments.” (’794 patent, 7:45–47 (cl. 1); 8:26–28 (cl. 9).)¹² “Synchronization” means “[t]he causing to occur, operate, transmit, or move *at the same time* as something else.” (*Synchronization*, Wiley Electrical & Electronics Engineering Dictionary (2004) (Ex. 28).) The bodies of claims 1 and 9 recite that the preamble’s “synchronization” is achieved “in such a way that each of the content-related second data segments is *output together* with an associated one of the content-related first data segments” based on an “assignment rule.” (’794 patent, 7:51–54 (cl. 1); 8:32–35 (cl. 9) (“each of the content-related second data segments being *output together* with an associated one of the content-related first data segments” based on “assignment rule”).) Accordingly, the segments are “synchronized” because they are “output together” i.e., at the same time. And “output together” must mean “the first and second data segments are transmitted, stored together or passed on to a processing unit at the same time.”

Because the parties dispute the plain and ordinary meaning of “together,” the Court should clarify the term’s plain and ordinary meaning now to avoid a future battle of the experts at summary judgment or in front of the jury.

IV. CONCLUSION

For the foregoing reasons, the Court should adopt Amazon’s proposed constructions and indefiniteness positions.

¹² The parties agree that the preambles of claims 1 and 9 of the ’794 patent are limiting.

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CERTIFICATE OF SERVICE

I hereby certify that on the 11th day of August, 2022, I electronically filed the foregoing **OPENING CLAIM CONSTRUCTION BRIEF OF AMAZON.COM, INC. AND AMAZON WEB SERVICES, INC.** with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to all counsel and parties of record, and that a true and correct copy of the foregoing document and accompanying exhibits were served via electronic mail to counsel of record for all parties.

By: /s/ J. David Hadden
J. David Hadden