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

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| VIDEOLABS, INC.,<br><br>Plaintiff,<br><br>v.<br><br>ASUSTEK COMPUTER, INC.<br><br>Defendant. | CA No. 6:22-cv-00720-ADA<br><br>**Jury Trial Demanded** |

**PLAINTIFF VIDEOLABS, INC.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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| 1 | Declaration of Dr. Iain E. Richardson regarding Claim Construction |

# I. INTRODUCTION

Pursuant to Dkt. No. 44, the Court's Order on Joint Motion for Entry of Scheduling Order, and the Court's Standing Order Governing Proceedings (OGP 4.4), Plaintiff VideoLabs, Inc. ("VideoLabs") provides its Responsive Claim Construction Brief for the claim terms of U.S. Patent Nos. 7,219,027 (the "'027 Patent"), 7,970,059 (the "'059 Patent"), 8,208,542 (the "'542 Patent), and 8,291,236 (the "'236 Patent") (collectively, the "Asserted Patents").

# II. AGREED CLAIM CONSTRUCTIONS

The parties agree to the construction for the "probability table" term of the '059 Patent. (*See* Dkt. 47 at 3.)

# III. VIDEOLABS'S PROPOSED CLAIM CONSTRUCTIONS

## A. The '027 Patent

The '027 Patent relates to a monitoring device for a hardware component that aims to enhance the component's performance while providing more effective control over its protection mechanisms.

### 1. '027 Patent Preamble, Claim 1: "An operation monitor device . . ."

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Limiting | No construction necessary. Plain and ordinary meaning. |

"Generally, the preamble does not limit the claims." *Georgetown Rail Equip. Co. v. Holland L.P.,* 867 F.3d 1229, 1236 (Fed. Cir. 2017). This preamble is no exception, and Defendant ASUSTeK Computer, Inc. ("Asus") fails to overcome the presumption.

Asus first contends that the preamble provides antecedent basis for three terms and is therefore limiting. (Dkt. 47 at 4.) However, the mere fact that the preamble provides antecedent basis does not conclude the analysis. Rather, the issue turns on whether the preamble terms provide necessary "context essential to understanding the meaning" of terms in the body of the

claim. *See Am. Med. Sys. v. Biolitec, Inc.*, 618 F.3d 1354, 1359 (Fed. Cir. 2010). Asus glosses over this essential analysis for the three terms they allege are deprived of necessary context: "hardware component," "output voltage," and "system." Each term is readily understandable as used in the body of the claim, and the preamble does not add additional context essential to understand their meanings. *See TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1323 (Fed. Cir. 2015) (even when the preamble "provides a necessary structure ... [that] does not necessarily convert the entire preamble into a limitation, particularly one that only states the intended use of the invention."); *see, e.g., RFCyber Corp. v. Google LLC,* No. 2:20-cv-274-JRG, 2021 WL 5357465, at *21-22 (E.D. Tex. Nov. 17, 2021) (the preamble's language of "*funding* an e-purse" was not limiting because it provided no separate meaning of "e-purse," and "for funding" was a statement of purpose or intended use). The mere use of terms from the preamble in the claim body does not make the preamble limiting. *See, e.g., Panasonic Corp. v. Magna Int'l Inc.,* No. 6-21-cv-00319, 2022 WL 625089, at *18 (W.D. Tex. Mar. 3, 2022).

Asus next contends that the preamble provides necessary structure (an arrangement) for the claim limitations. (Dkt. 47 at 5.) A preamble is not limiting "when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention." *Am. Med. Sys.,* 618 F.3d at 1358-59. Here, the claim body describes a structurally complete invention of "a pulse width modulation module," "a monitoring unit" for, *inter alia*, exchanging information with "the system"; and "a controller." (*See* '027 Patent, cl. 1.) Removing the preamble's "an operation monitor device for a hardware component," does not leave the reader at a loss for the structure of the invention, as Asus contends. (Dkt. 47 at 5.) The preamble merely gives a name to the structurally complete invention, and such a preamble is not limiting unless there is a "clear reliance on those benefits

or features as patentably significant" or an emphasis in the patent on their importance. *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002); *see Georgetown Rail Equip. Co.* at 1236. Asus does not show that the claim relies on the preamble's language of "an operation monitor device for a hardware component" to distinguish prior art. Accordingly, the preamble is not limiting, as it does not provide additional structure or steps underscored as important by the patent, and Asus's construction must be rejected because all terms are readily understandable as used in the claim body and do not provide essential structural arrangement.

**B. The '542 Patent**

The '542 Patent introduces an enhanced video coding technique that enables inter-picture prediction without requiring a separate reference picture to be coded for each inter-predicted block. (*See* '542 Patent, 6:29-7:13.) Instead of coding reference picture information for every block, the patent allows for selecting and specifying a common reference picture for multiple blocks in a shared information area. This approach avoids redundantly coding the same reference picture data for each block, resulting in more efficient video data compression. (*Id.*)

The improved coding efficiency provided by the '542 Patent is illustrated, for example, between Fig. 3 (which illustrates the prior art coding technique) and Fig. 7 (which illustrates an embodiment of the coding technique described in the '542 Patent).

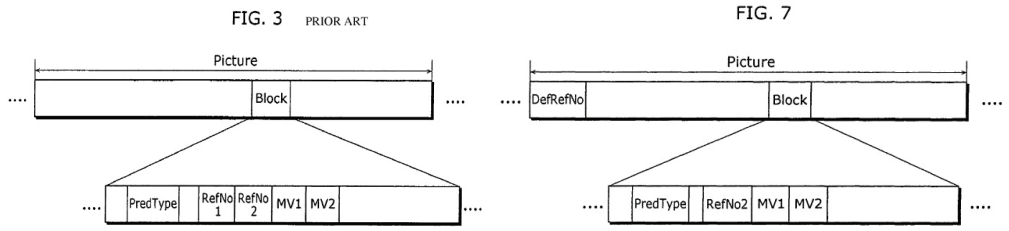



Fig. 3 shows an inter-predicted block that was predicted using two reference pictures, RefNo1 and RefNo2, according to the prior art technique. (*See id.* at 3:32-43.) As shown in Fig. 3, the two reference pictures are signaled using reference picture numbers (RefNo1 and RefNo2)

coded at the block level. (*Id.* at 6:51-53.) The prior art technique requires each block to be separately coded with its own corresponding reference picture numbers, even if neighboring blocks are predicted using the same reference pictures. (*Id.* at 6:51-53; *see also id.* at 5:63-6:6.) Because "it is highly possible that most of the blocks in the [picture] select the same picture as an optimal reference picture" (*i.e.*, select the same reference picture), the prior art technique may result in coding inefficiencies because there could be many blocks coded with the same information. ('542 Patent, 6:51-53.)

The '542 Patent improves coding efficiency for inter-predicted blocks by using a common reference picture for a plurality of blocks in a picture. (*Id.* at 6:35-56.) Like Fig. 3, Fig. 7 shows an inter-predicted block that was predicted using two reference pictures. But unlike Fig. 3, only one reference picture number, RefNo2, is coded with the block. Instead of coding the same signal to a second reference picture with each block, a default (common) reference picture is signaled for all the blocks by coding a default reference picture number (DefRefNo) at the picture level.

In the embodiment shown in Fig. 7, the indicator for the default (common) reference picture is coded at the picture level, requiring every block in the picture to be inter-predicted using a default (common) reference picture. But, the '542 Patent describes that the indicator may be coded at lower levels, such as the macroblock level, and that the prediction type may be switched on a block-by-block basis. (*Id.* at 9:12-27, 11:43-51.) Fig. 7 also shows using one common reference picture for plural reference inter-prediction, but two common reference pictures may be used for plural reference inter-prediction, and a common reference picture may be used for single reference inter prediction. (*Id.* at 11:28-24.)

The improved coding scheme in Fig. 7 may be implemented with the apparatus shown in Fig. 6. In particular, Fig. 6 includes motion estimation unit 101 which determines the prediction type (PredType) for each block in the picture. (*See id.* at 9:12-10:1; FIG. 6.) The motion estimation unit 101 can determine, on a block-by-block basis, whether a block should be predicted using an inter-picture prediction technique (*e.g.*, single reference inter-prediction, plural reference inter-prediction, skip mode, or direct mode) or an intra-picture prediction technique. ('542 Patent, 2:50-61, 4:23-52; 5:20-62, 9:12-27, 9:59-10:1.) Inter-picture prediction techniques rely upon reference frames to generate the predictive image data, while intra-picture prediction techniques do not (as they rely upon neighboring pixels to perform their prediction).

The motion estimation unit 101 receives a default reference picture number (DefRefNo) that signals the reference picture to be shared by blocks in the picture (*i.e.*, a default or common reference picture). (*See, e.g., id.* at 9:35-50, 12:9-15.) DefRefNo signals a previously coded picture selected from among reference pictures in multi-picture buffer 108, such as the picture with a display order closest to the current picture. (*Id.* at 10:43-52.) Although not expressly shown in Fig. 6, the specification notes that the motion estimation unit 101 can send the default (common) reference picture number to the variable length coding unit 107 to code the default (common) reference picture number into the bit stream. (*See id.* at 10:6-8.) This would allow the variable length coding unit 107 to output a bit stream, for example, in the format illustrated in Fig. 7. If the motion estimation unit 101 in Fig. 6 determines that a block should be coded using inter-picture prediction with a single reference, then the motion estimation unit 101 will output a single reference picture number (RefNo1), which corresponds to the default (common) reference picture (DefRefNo), along with the motion vector (MV1). (*See id.* at 9:43-46, 11:33-42; *see also id.* at 3:11-18.) In such a case, "there is no need to describe the reference picture information for

each block, and therefore, the reference picture information is described only in a common information area." (*See id.* at 11:36-42.)

If the motion estimation unit 101 in Fig. 6 determines that a block should be coded using plural reference inter-prediction, then the motion estimation unit 101 will output refence picture numbers (RefNo1, RefNo2) and motion vectors (MV1, MV2) to be used for the inter-picture prediction. ('542 Patent, 9:52-10:8.) In particular, reference picture number RefNo1 corresponds to the default (common) reference picture (DefRefNo). (*See id.* at 9:43-46.) In an alternative embodiment, the specification contemplates that multiple reference pictures can be coded as default reference pictures. (*See id.* at 11:28-32.)

**1. '542 Patent Claim 1 - "a judging device to judge . . ."**

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C. § 112, ¶ 6.<br><br><u>Function</u>: to judge if a common reference picture is to be selected or not when coding a plural-block image unit made up of a plurality of blocks<br><br><u>Structure</u>: none (claim is indefinite) | No construction necessary. Plain and ordinary meaning, *i.e.*, logic that determines prediction mode by judging if a common reference picture is to be selected or not when coding a plural-block image unit made up of a plurality of blocks.<br><br>Not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, to the extent this term is subject to § 112, ¶ 6:<br><br><u>Function</u>: judge if a common reference picture is to be selected or not when coding a plural-block image unit made up of a plurality of blocks.<br><br><u>Structure</u>: motion estimation unit 101, the specification's description thereof (*see*, *e.g.*, cols. 6:35-56, 7:1-13, 9:17-27, 9:35-10:8, 11:33-51, 13:7-30, 20:40-41, 20:47-48, FIGS. 6, 7, 9-13, 20, 22), and equivalents thereof. |

The "judging device" element does not require construction as the meaning is readily apparent from the plain language of the claims. A POSITA would understand that the "judging device" is "logic that determines the prediction mode by judging if a common reference picture is to be selected or not when coding a plural-block image unit made up of a plurality of blocks."

(Ex. 1 at ¶¶ 59-60.) Devices, such as motion estimation units, consisting of hardware and/or software logic for determining a prediction mode were well understood in the art. (*See* '542 Patent, 2:62-63; Ex. 1 at ¶ 60.) The chosen prediction mode is coded with the block to signal to a receiving video decoder how that block should be decoded. (Ex. 1 at ¶¶ 37, 56.)

It was common practice to perform video coding by dividing the pictures (video frames) into multiple blocks and coding the blocks on a block basis using predictive coding.[1] ('542 Patent, 2:18-51, 3:50-61; Ex. 1 at ¶¶ 25-27, 38-41.) Various prediction modes were known and understood, including the following prediction modes identified in the Background section of the '542 Patent: intra-prediction, single reference inter-prediction, plural reference inter-prediction, skip mode and direct mode. ('542 Patent, 2:50-61, 4:23-52; 5:20-62; Ex. 1 at ¶ 60.) Video encoders included hardware and/or software logic devices to determine which prediction mode to use for each block, allowing the prediction mode to be switched on a block-by-block basis. ('542 Patent, 2:50-61; Ex. 1 at ¶ 60.)

A POSITA would understand that the "judging device" term introduces a ***new*** prediction mode (*i.e.*, selecting a common reference picture) that may be used when coding blocks of a picture and could be implemented in the known structures for determining a prediction mode. (Ex. 1 at ¶¶ 62-65.) The aim of predictive coding is to improve compression. (*Id.* at ¶ 32.) And the aim of selecting a common reference picture is to improve compression by reducing the amount of information that must be coded. (*See* '542 Patent, cl. 1, 6:51-56, 10:63-11:18, 11:33-51.) If the "judging device" judges to select a common reference picture, identifying information

[1] A POSITA would understand predictive coding to refer to coding a block using a predictive coding method. (Ex. 1 at ¶ 26.) A POSITA would also understand the terms "predictive coding method," "prediction mode," and "prediction type" to have the same meaning and to be interchangeable. (*See id.* at ¶ 33, n.1.)

for the common reference picture may be omitted when coding blocks in the plural-block image unit. (*Id.* at cl. 1; Ex. 1 at ¶ 65.) Consistent with the known devices, the "judging device" determines a prediction mode; the "judging device" judges whether a common reference picture is to be selected (use the new prediction mode) <u>or not</u> (use a different prediction mode) when coding a plural-block image unit made up of a plurality of blocks. ('542 Patent, cl. 1; Ex. 1 at ¶¶ 62-66.)

A POSITA would also understand how to implement the "judging device" in known devices, such as a motion estimation unit, as techniques for determining a prediction mode were well understood. (*See* Ex. 1 at ¶¶ 34-38, 64, 70-71.) For example, at the time of the invention, techniques such as rate-distortion optimized mode selection ("RDO"), measuring the sum of absolute differences (SAD or SA(T)D), and minimizing Lagrangian functionals were implemented in video encoders to make prediction mode decisions. (*See id.*) These techniques evaluate the possible prediction modes to code a block (*e.g.*, intra-prediction, single reference inter-prediction, plural reference inter-prediction, skip mode, and direct mode) and choose the mode that leads to the most favorable result. (*See id.*) RDO, for example, may be implemented by a device in a video encoder to choose a prediction mode based on a weighted combination of the number of bits required ("rate") and the decode block quality ("distortion"). (Ex. 1 at ¶ 34.) A POSITA would understand that whether to select a common reference could be evaluated alongside the other possible prediction modes using these same techniques. (*Id.* at ¶¶ 64, 70-71.)

**a. "judging device" is not subject to § 112, ¶ 6**

The evaluation of whether the "judging device" term invokes § 112, ¶ 6 must begin with the presumption that § 112, ¶ 6 does not apply because the term "means" is not recited. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). And Asus cannot

overcome this presumption because a POSITA would understand "judging device" to recite a sufficiently definite structure. *Id.*

Asus incorrectly contends that "judging device" is subject to § 112, ¶ 6 and relies on prior constructions of this term by ALJs at the ITC for support. (*See, e.g.*, Dkt. 47 at 10 (citing Dkt. 47-5 at 47-48; Dkt. 47-6 at 33-41).) Asus's contention is based on the misconception that a POSITA could not understand the structure of the "judging device" because "the common reference picture is the alleged advance of the patent over the prior art." (*See* Dkt. 47 at 10.) The prior constructions are also based on this misconception, and VideoLabs respectfully disagrees with the findings in the ITC. (Dkt. 47-5 at 47-48 (considered this term to be a point of novelty that could not have been understood as a structure by a POSITA); Dkt. 47-6 at 33-41 (same).) The simple fact that the judging device term determines whether to use a new prediction mode does not inherently render it indecipherable to a POSITA.

As discussed above, it was commonly understood that a block may be coded using a prediction mode, chosen from a set of available prediction modes (*e.g.*, intra-prediction, single reference inter-prediction, plural reference inter-prediction, skip mode and direct mode). (Ex. 1 at ¶ 60.) A POSITA would understand that the available prediction modes evolve and expand as coding methods improve. (Ex. 1 at ¶ 60) (comparing prediction modes available in the H.262, H.263, and H.264 (working draft) standards).) And a POSITA would readily understand that a new prediction mode (*i.e.*, selecting a common reference picture) could be included in the set of available prediction modes and its use determined using known techniques (*e.g.*, RDO, measuring SAD or SA(T)D, and minimizing Lagrangian functionals) in known devices (*e.g.*, motion estimation units). (*Id.* at ¶¶ 64, 70-71.)

"When evaluating whether a claim limitation invokes § 112, ¶ 6, the essential inquiry

remains 'whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.'" *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018) (citing *Williamson*, 792 F.3d at 1348). Here, this inquiry leads to the conclusion that the "judging device" term does not invoke § 112, ¶ 6 because a POSITA would understand from claim 1 that the "judging device" refers to known structures in video encoders for determining a prediction mode. *See Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1301 (Fed. Cir. 2014)("Structure may also be provided by describing the claim limitation's operation, such as its input, output, or connections."), *overruled on other grounds by Williamson v. Citrix Online, LLC,* 792 F.3d 1339 (Fed. Cir. 2015); *see also Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1368 (Fed. Cir. March 24, 2022) (noting that it is proper to look beyond the term "to the functional language to see if a person of ordinary skill would have understood the claim limitation as a whole to connote sufficiently definite structure").

The language of claim 1 clearly establishes that the "judging device" is a device in a video encoder. In particular, claim 1 specifies that the "judging device" is within the claimed "image coding unit." ('542 Patent, cl. 1.) As recited in claim 1, the "image coding unit" is used to divide a picture into blocks and predictively code each block. The "image coding unit" also "select[s] a reference picture from among reference pictures on a block basis" and provides "describing information which identifies the selected reference picture." (*Id.*) From this language, a POSITA would understand that the "image coding unit" refers to a block-based video encoder. (*See* Ex. 1 at ¶ 69.) Accordingly, a POSITA would understand "judging device" to be within a block-based video encoder. (*Id.*)

The language of claim 1 also establishes that the "judging device" determines whether to use a new type of prediction mode or another known prediction mode. The "judging device"

"judge[s] if a *common reference picture* is to be selected or not when coding a plural-block image unit made up of a plurality of blocks." ('542 Patent, cl. 1 (emphasis added).) A POSITA would understand that the selection of a "*reference picture*" for each block, as made by the "image coding unit," is made when a type of inter-prediction is used to perform predictive coding. (*See id.* at cl. 1; Ex. 1 at ¶¶ 62-63.) By reciting a "*common reference picture*" for the "judging device" term, the claim indicates that the type of inter-prediction has been modified to be something different – a new type of inter-prediction. (Ex. 1 at ¶¶ 62-63.) The judging device determines whether to use this new prediction mode or not (*i.e.*, use a different prediction mode, such as intra-prediction, single reference inter-prediction, skip mode, or direct mode).

The language of claim 1 further informs a POSITA of how to implement the judging device. (*Id.* at ¶¶ 64-65.) In particular, the "judging device" judges whether to select a "common reference picture" "when coding a plural-block image unit made up of a *plurality of blocks*." ('542 Patent, cl. 1 (emphasis added).) This language reinforces that the word "common" is intended to have its ordinary meaning and informs a POSITA that the "common reference picture" is a reference picture that is commonly shared by at least some of the blocks in a plural block image unit. (Ex. 1 at ¶ 63.)

Additionally, as recited in claim 1, the "image coding unit" selects a reference picture for each block from a picture and the claimed "plural-block image unit" is "made up of a plurality of blocks." ('542 Patent, cl. 1.) As such, a POSITA would understand that the "judging device" considers the reference pictures selected for each block in the plural-block image, and that a common reference picture can be selected if a plurality of blocks in a given area of the picture refer to the same reference picture. (Ex. 1 at ¶¶ 65-66; *see also* '542 Patent, 6:45-56 (noting that common reference picture can be used where most blocks in image data select the same

reference picture).) A decision to use a common reference picture by the "judging device" is then employed by the claimed "selecting device" to select the common reference picture and by the "common information describing device," which allows "reference picture information" "[to] be omitted for at least one of the plurality of blocks of the plural-block image unit. ('542 Patent, cl. 1.) This is like skip mode, for example, which was a well-known type of inter-prediction that is only selected after a picture has been selected for the block. (Ex. 1 at ¶ 64; '542 Patent, 5:31-34.) If the reference picture results in a residual error of 0, skip mode is selected and residual information is omitted. (Ex. 1 at ¶ 64; '542 Patent, 5:31-34.)

Accordingly, a POSITA would understand "judging device" to connote sufficient structure from the plain language of the claims. From claim 1, a POSITA would understand the inputs, outputs, and operation of the "judging device." *See Apple*, 757 F.3d at 1301. A POSITA would understand the selection of a common reference picture to be like known prediction modes and that the "judging device" could be implemented in known devices, such as a motion estimation unit. Because the claim language itself provides a detailed description of the structure of the "judging device," including a detailed description of its inputs, outputs, and connections – there is no reason to deviate from the presumption that it is not subject to § 112, ¶ 6.

**b. If found subject to § 112, ¶ 6, the specification provides corresponding structure for the claimed function**

While the term "judging device" connotes sufficient structure, rendering a § 112, ¶ 6 construction inappropriate, if found to be subject to § 112, ¶ 6, the parties agree on the function, but disagree as to the corresponding structure. VideoLabs's corresponding structure should be adopted as the specification describes the motion estimation unit 101 as performing the claimed function of determining whether the common reference picture is selected or not.

Asus cannot establish that, under a § 112, ¶ 6 construction, "judging device" is indefinite, because Asus fails to properly consider the disclosed embodiments and cannot show by clear and convincing evidence that the specification does not disclose sufficient corresponding structure. *See* Dkt. 47 at 12-14; *TecSec, Inc. v. International Business Machines Corp.*, 731 F.3d 1336, 1349 (Fed. Cir. 2013). Asus contends that every embodiment disclosed in the specification starts with the premise that a common reference picture is used to code every block. *See id.* at 13. This is incorrect and ignores clear disclosures in the specification that a common reference picture is not always used. For example, the specification clearly states:

> It is possible for the moving picture coding apparatus and the moving picture decoding apparatus <u>according to each embodiment described below</u> *to switch, on a block-by-block basis, between [] prediction methods . . ..*

('542 Patent, 9:17-27 (emphasis added).) A common reference picture is not used for intra-prediction or the inter-prediction modes known in the art. (*See id.*)

A POSITA would understand that the specification's disclosure of motion estimation unit 101 corresponds to the function recited by the judging device term. (Ex. 1 at ¶¶ 73-78.) In particular, the specification discloses that motion estimation unit 101 is a structure within a video encoder. ('542 Patent, 9:28-34, Fig. 6; Ex. 1 at ¶ 73.) Consistently, claim 1 identifies that the "judging device" is within the claimed "image coding unit," which would be understood to be a block-based video encoder. ('542 Patent, cl. 1; Ex. 1 at ¶ 69.) The specification further discloses that video encoder divides a picture into blocks and the motion estimation unit 101 is responsible for determining which prediction mode to use when coding those blocks. ('542 Patent, 9:28-34; 9:61-62; e at ¶ 73.) And the available prediction modes include modes that do not use a common reference picture. Again, this is consistent with the claimed "judging device" and its recited

function of judging if a common reference picture is to be selected or not when coding a plural-block image unit made up of a plurality of blocks. ('542 Patent, cl. 1. Ex. 1 at ¶¶ 73-78.)

Asus disagrees that motion estimation unit 101 corresponds to the function of the "judging device" based on reasoning provided by the ALJs in the ITC when considering this term. (Dkt. 47 at 14.) Asus contends that the motion estimation unit does not meet the recited function because "[t]he motion estimation unit 101 [] determines the prediction type and the motion vectors, on a block-by-block basis, as part of the motion estimation process." (*Id.*) More simply put, Asus and the ALJs consider the specification's disclosure of motion estimation unit 101 to provide inadequate written description because it does not disclose the ability to select a common reference picture (or not) solely in the context of inter-picture prediction.

There is no requirement in the plain language of the "judging device" that the judging of whether to use a common reference picture (or not) be made solely in the context of inter-picture prediction. (Ex. 1 at ¶¶ 82-83.) The specification discloses numerous prediction modes, including intra-prediction, and that motion estimation unit 101 can select which prediction mode to use on a block basis. ('542 Patent, 9:12-27, 9:59-10:1; Ex. 1 at ¶ 83.) Intra-prediction does not use a common reference picture, or any other reference picture, and the fact that motion estimation unit 101 can select to intra-prediction provides more than sufficient disclosure of the structure of the claimed "judging device." (Ex. 1 at ¶ 83.)

But even if the claimed "judging device" were limited to the context of inter-picture prediction, the specification's disclosure of motion estimation unit 101 provides an adequate disclosure of the structure for performing the claimed function. (Ex. 1 at ¶ 84.) In particular, a POSITA would not understand the motion estimation unit 101 to necessarily set the prediction mode to use a common reference picture when performing inter-picture prediction. (Ex. 1 at

¶ 78.) The specification contemplates that the prediction type can be switched on a block-by-block basis, which a POSITA would understand to allow for using the common reference picture or not when operating in inter-prediction mode. (*Id.*) In particular, a POSITA would recognize that there are some instances in inter-prediction where a plurality of blocks in a region do not reference the same reference picture for inter-prediction, a circumstance where using a common reference picture would not improve coding efficiency. (Ex. 1 at ¶¶ 66, 84.)

Because a POSITA would understand the specification to allow for switching between the use of a common reference picture or not in inter-prediction, the specification still provides an adequate disclosure of corresponding structure even under an overly narrow interpretation of the claimed "judging device."

**2. '542 Patent Claim 1 - "a selecting device to select, . . ."**

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C § 112 ¶ 6<br><br>Function: select, if it is judged by said judging device that a common reference picture is to be selected, one common reference picture to be commonly referred to, from among plural reference pictures, the common reference picture being only one reference picture that is selected from among the plural reference pictures and is assigned commonly to each of the plurality of blocks of the plural- block image unit<br><br>Structure: none (indefinite) | No construction necessary. Plain and ordinary meaning.<br><br>Not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, to the extent this term is subject to § 112, ¶ 6:<br><br>Function: select, if it is judged by said judging device that a common reference picture is to be selected, one common reference picture to be commonly referred to, from among plural reference pictures, the common reference picture being only one reference picture that is selected from among the plural reference pictures and is assigned commonly to each of the plurality of blocks of the plural-block image unit<br><br>Structure: motion estimation unit 101, default reference picture number generation unit 201/203/205, multi-picture buffer 108, the specification's description thereof (*see*, *e.g.*, cols. 9:35-10:20; 10:43-11:51; 13:7-15:7, 20:40-41, 20:47-48, FIGS. 6, 7, 9-13, 20, 22), and equivalents thereof. |

The "selecting device" element does not require construction as the meaning is readily apparent from the plain language of the claims. As its name implies, the "selecting device"

selects "one common reference picture to be commonly referred to" (i.e., one reference picture) "from among the plural reference pictures" (i.e., a set of reference pictures). ('542 Patent, cl. 1, Ex. 1 at ¶ 87.) The selection of a reference picture from a set of reference pictures was well understood in the art and is part of the process of performing predictive coding using an inter-prediction mode. ('542 Patent, Fig. 2, 2:25-46; Ex. 1 at ¶¶ 87-88.) A POSITA would have understood that well-known structures and methods could be used to select a common reference picture, such as identifying the common reference picture from a buffer or list of available reference pictures. (Ex. #1 at ¶ 89.)

Asus argues that the "selecting device" term is subject to § 112, ¶ 6 and suggests that it was found as such in the ITC on its own merits. (*See* Dkt. 47 at 17.) But this is not true. In the 1323 Investigation, the ALJ deferred construction and in the 1341 Investigation, the ALJ found this term subject to § 112, ¶ 6 based on its interconnection with "judging device," which was incorrectly found indefinite. (*See* Dkt. 47-5 at 52-53; Dkt. 47-6 at 50-51.) When the term "judging device" is considered under a proper construction, the "selecting device" is also not subject to § 112, ¶ 6. (Ex. 1 at ¶¶ 86, 90)

**a. "selecting device" is not subject to § 112, ¶ 6**

Asus incorrectly contends that "selecting device" is subject to § 112, ¶ 6. The claimed "selecting device" does not recite the term "means" and, as such, is afforded the presumption that § 112, ¶ 6 does not apply. *Williamson*, 792 F.3d at 1349 (Fed. Cir. 2015). Asus cannot overcome this presumption, as the claimed "selecting device," as properly understood considering the specification, recites sufficiently definite structure.

As discussed above, a POSITA would readily understand the term "selecting device" to refer to well-known structures commonly used for inter-prediction. (Ex. 1 at ¶¶ 87-89.) The claim language following "selecting device" supports this understanding and informs a POSITA

of its structure. In particular, a POSITA would understand the language "select . . . one common reference picture to be commonly referred to, from among plural reference pictures . . ." to refer to structure to determine a particular reference picture to be used as a common reference picture that is used when coding blocks of the picture. (Ex. 1 at ¶¶ 90-92); *see also Dyfan*, 28 F.4th at 1368. The selection of a common reference picture would also inform a POSITA this term is referring to the operation of an inter-prediction mode. (*Id.* at ¶ 93.) Accordingly, a POSITA would understand this language to connote sufficient structure as there were well-known inter-picture prediction techniques for selecting a reference picture from a reference picture list to be used for performing inter-prediction. (*See* Ex. 1 at 93; '542 Patent, 1:54-60.)

A POSITA would also understand "selecting device" to connote sufficiently definite structure, particularly as the claim language defines its connections to other elements in the claims. (Ex. 1 at ¶¶ 90-97.) First, the claim defines the "selecting device" as a structure within the "image coding unit." ('542 Patent, cl. 1.) A POSITA would understand from the plain language of the claims that the "image coding unit" refers to a block-based video encoder capable of inter-picture prediction and that the "selecting device" refers to a structure within the video encoder. (Ex. 1 at ¶ 91.) Second, the "selecting device" relies on the output of the "judging device" to determine whether to select a reference picture, as the judging device indicates whether "a common reference picture is to be selected." ('542 Patent, cl. 1.) If the judging device indicates that a common reference picture is to be selected, the selecting device can then select a reference picture to serve as a common reference picture. (*Id.*) Once the "selecting device" selects "one common reference picture to be commonly referred to," then that common reference picture can then be output to the "common information describing device," which then uses the selected common reference picture and "describe[s] common information

which identifies the selected common reference picture, in a common information area." (*Id.*) The connections between the "selecting device" and the other claim elements confirm the structural nature of the "selecting device." *See Apple*, 757 F.3d at 1299 ("Structure may also be provided by describing the claim limitation's operation, such as its inputs, outputs, or connections."). Accordingly, there is no reason to deviate from the presumption that "selecting device" is not subject to § 112, ¶ 6.

**b. If found subject to § 112, ¶ 6, the specification provides corresponding structure for the claimed function**

While the term "selecting device" connotes sufficient structure, rendering a § 112, ¶ 6 construction inappropriate, if "selecting device" is nevertheless found to be subject to § 112, ¶ 6, the parties agree as to the function, but disagree as to the corresponding structure. VideoLabs's corresponding structure should be adopted, as the specification describes that the motion estimation unit 101, default reference picture number generation unit 201/203/205, and multi-picture buffer 108, are used to perform the claimed function. (Ex. 1 at ¶¶ 97-101; *see also* '542 Patent, 9:35-46, 9:59-10:1, 10:43-62, 14:8-28, 14:61-65, FIGS. 6, 9, 11, 13.) The motion estimation unit 101 selects a common reference picture based on prediction type and the default reference picture number (DefRefNo). (*See* '542 Patent, 9:35-46, 9:59-10:1, FIG. 6 (motion estimation unit 101 receiving default reference picture number).) The default reference picture number (DefRefNo) refers to a picture in the multi-picture buffer 108. (*Id.* at 10:43-45.) The common reference picture can be selected by a default reference picture generation unit 201/203/205 and the specification details several ways for selecting the common reference picture, including by selecting a coded picture closest to that of the current picture. (*See, e.g.*, '542 Patent, at 10:43-62, 14:8-28, 14:61-65, FIGS. 9, 11, 13; *see also* Ex. 1 at ¶¶ 97-99.)

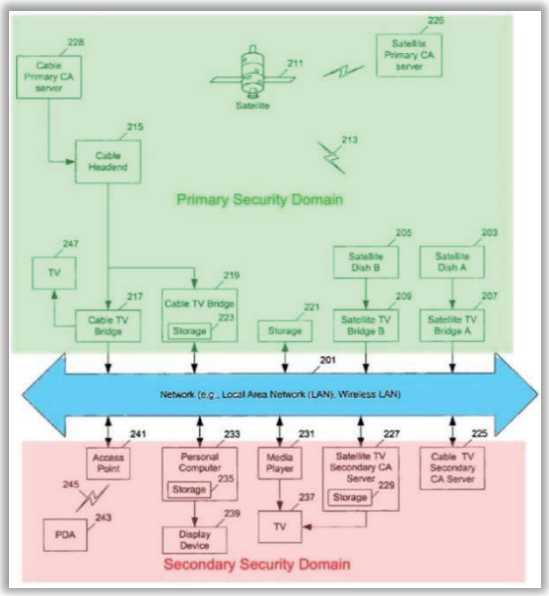
Asus contends that the specification fails to provide an adequate description of the structure for the "selecting device" and the term is therefore indefinite. But, as discussed above, a POSITA would understand that the specification discloses the structure, namely in the motion estimation unit 101, default reference picture number generation unit 201/203/205, and the multi-picture buffer 108. *See* Ex. 1 at ¶¶ 97-101. This description of structure precludes a finding that the claimed "selecting device" is indefinite under a § 112, ¶ 6 construction.

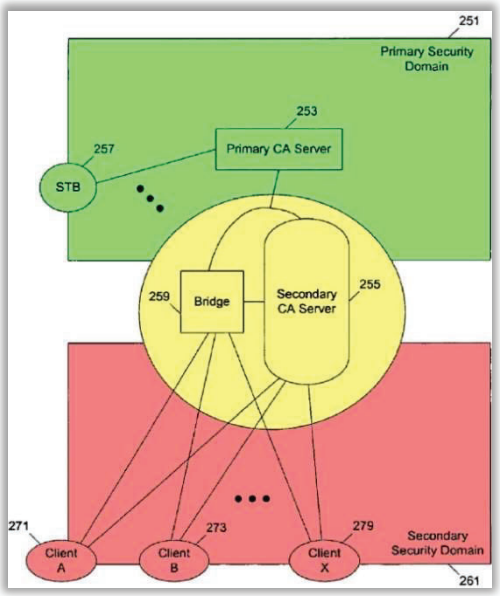
**C. The '236 Patent**

The '236 Patent introduces enhanced methods and apparatuses for restricting media content access to authorized users through a conditional access ("CA") system. (*See* '236 Patent, 1:13-15.) The patent discloses CA servers capable of bridging two security systems—for example, a primary and a secondary system—allowing the primary security system to control content distribution to devices secured by the secondary system. (*See id.* at 2:55-59.)

The patent presents various embodiments for achieving this integration, including configurations where CA servers function as both a primary CA client and a secondary CA server. (*See id.* at 3:20-25.) In some embodiments, the CA server supports two independent roots of trust: a first root of trust for authenticating itself as a legitimate client in the primary security domain, and a second root of trust for authenticating secondary clients in the secondary security domain. (*See id.* at 8:25-38.) Certain embodiments stipulate that the authorization to use media content in the secondary security domain aligns with the authorization granted in the primary security domain. (*Id.*)

All of Asus's flawed constructions stem from a fundamental misunderstanding of the patent, as evidenced by its plainly erroneous annotation of Fig. 3. Asus incorrectly assigns devices to either the primary or secondary security domain based on their vertical placement in the figure relative to Network 201. (Dkt. 47 at 21.)




The patent consistently contradicts Asus's mischaracterization of Fig. 3. For example, Fig. 2A (above right, annotated) describes Secondary CA Server 255 as being in both primary and secondary security domains. (*See* '236 Patent, FIG. 2A, 7:19-21.) In contrast, Asus wrongly places secondary CA servers solely within the secondary security domain and uses that error to exclude them as corresponding structure in their proposed constructions. Asus also oversimplifies—and over indexes on—the vertical placement of devices above or below Network 201, which the patent describes as "a complex networked system with multiple primary security systems reaching multiple secondary security systems clients…according to one embodiment of the present invention." (*Id.* at 6:11-14.) For example, the specification identifies Storage 221 as a secondary CA client, contradicting Asus's placement in the primary security domain. (*Id.* at 8:62-66.) Asus ignores key teachings of the patent and, consequently, misidentifies certain components as either belonging or not belonging to a particular security domain. Asus's flawed perspective leads to the exclusion of many structures from its proposed § 112, ¶ 6 constructions.

### 1. '236 Patent, Claim 100: "means for receiving, . . ."

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C § 112 ¶ 6<br><br>Function: "receiving at a conditional access server, security messages of a primary security system in a first security domain"<br><br>Structure: satellite TV bridges (207, 209), cable TV bridges (217, 219) and equivalents thereof. | This term is subject to 35 U.S.C. § 112, ¶ 6.<br><br>Function: "receiving at a conditional access server, security messages of a primary security system in a first security domain"<br><br>Structure: receiving devices (*e.g.*, set-top boxes with a smart card), and their description in the specification, *e.g.*, at 2:6-7, 14-19; set-top box (STB), including the tuner portion, and their description in the specification, *e.g.*, at 2:20-24; I/O Device(s) (110) (*e.g.*, modem, or network interface) in FIG. 1, and their description in the specification; secondary CA server (255), set top box (257), or bridge (259) in FIG. 2A, and their description in the specification; secondary CA server (281), bridge (283), or physical interface (285) in FIG. 2B, and their description in the specification; satellite dishes (203, 205), satellite TV bridges (207, 209), cable TV bridges (217, 219), cable TV secondary CA server (225), satellite TV secondary CA server (227), media player (231), personal computer (233), access point (241), or PDA (243) in FIG. 3, and their description in the specification; receiving at a secondary CA server, as described in FIG. 4, *e.g.*, at 10:25-11:25; secondary CA servers in FIG. 5 (431), FIG. 6 (461), FIG. 7 (501), FIG. 8 (531), or FIG. 9 (561), and their descriptions in the specification; the device of the user of FIG. 10A, and its description in the specification, *e.g.*, at 14:47-50, 14:66-15:1; secondary CA server (772) in FIG. 10C, and its description in the specification; bridges (603) or secondary CA servers (609) in FIGS. 11, 12, 13, and 14, and their description in the specification; secondary CA server of FIG. 15 (701), and its description in the specification, *e.g.*, at 21:28-36; and equivalents thereof. |

As recited in claim 100, the CA server ***receives*** security messages that are ***from*** a primary security system in a first security domain. ('236 Patent, cl. 100.) Nothing in the plain language of this claim requires the CA server to be "in a first security domain," as Asus contends. (*See* Dkt. 47 at 23.) Asus attempts to rewrite the claim so that "in a first security domain" directly follows and modifies "conditional access server" instead of "primary security system":

> receiving at a conditional access server in a first security domain, security messages of a primary security system ~~in a first security domain~~

This material rewriting of the claim is unsupported by the claim language, specification, or prosecution history. Doubling down on its mistake, Asus turns to its inaccurately annotated Fig. 3 to identify only the satellite and cable TV bridges in what it considers to be the primary security domain—*i.e.*, devices above Network 201. Asus's chain of mistakes restricts its corresponding structure to primary CA servers, thereby excluding numerous structures in the secondary security domain that are clearly associated with the recited function.

Contrary to Asus's position, the '236 Patent unambiguously links ***secondary*** CA servers to the function of receiving security messages of a primary security system. ('236 Patent, 7:29-31 ("secondary CA server (255) [acts] in accordance with security messages provided by the primary security domain (251) to the secondary CA server (255)"); 16:3-6 ("secondary CA server (772) may forward, translate, and/or manage its authorization received from the primary CA server (773)"); 21:30-36; 14:18-21; *see also* 8:4-6, 10:27-10:31, 11:28-33, 12:31-37, and 12:56-58; 13:40-42; *see also* 17:66-67, 19:32-34, and 20:14-15; and 20:45-46.)

In fact, the '236 Patent identifies several structures clearly linked to performing the recited function of "receiving…security messages of a primary security system in a first security domain." For example, these structures include "receiving devices" at a CA server (*id.* at 2:2-7) for receiving direct messages from a primary security system; satellite dishes (*id.* at 9:56-59) for receiving security messages from a broadcast; secondary servers for satellite and cable TV (*id.* at 9:23-25, 9:52-53, 9:64-10:3) for receiving protected media content, including security messages, for example for storage; user devices (*id.* at 14:47-49); a set-top box with a tuner portion (*id.* at 2:20-23) for receiving security messages from a primary security system; and input/output devices like a modem, network interface, video camera, etc. (*id.* at FIG. 1, as described in the specification) for receiving security messages from a primary security system. Additionally, a

media player, personal computer, access point, and PDA receive security messages of a primary security system in a first security domain, *e.g.*, by receiving security messages from a secondary CA server. (*See id*. at 8:67-9:9, 9:23-38.)

Another structure clearly linked to performing the recited function is a bridge, which may be incorporated in a secondary CA server. For example, the bridge may receive CA protected content, which may contain security messages (*id.* at 19:23-26), encrypted content (8:44-46), or a broadcast feed including security messages (*e.g.*, FIG. 11 & 17:55-61; FIG. 12 & 19:30-32; FIG. 13 & 20:11-14; FIG. 14 & 20:42-44). A bridge may include a physical interface component that receives security messages from a primary security system, for example with a tuner to convert the CA protected content signals to a digital format. (*Id*. at 8:42-44.)

While both parties propose satellite and cable TV bridges as structures for this claim element, Asus falls short of identifying the remaining corresponding structures for receiving security messages of a primary security system. VideoLabs's construction should be adopted because it comprehensively and accurately identifies all corresponding structures clearly linked to the recited function of the claim.

**2. '236 Patent, Claim 100: "means for processing . . ."**

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C § 112 ¶ 6<br><br><u>Function</u>: processing the security messages on the conditional access server<br><br><u>Structure</u>: satellite TV bridges (207, 209), cable TV bridges (217, 219); processing of | This term is subject to 35 U.S.C. § 112, ¶ 6.<br><br><u>Function</u>: "processing the security messages on the conditional access server"<br><br><u>Structure</u>: hardware and software of digital data processing system, *e.g.*, computer system (101), of FIG. 1, and their description in the specification, *e.g.*, at 23:21-24:48; the secondary CA server, and its description of processing security messages in the specification, *e.g.*, at 3:20-32; 3:55-58, 4:4-16, 4:20-24, 4:28-43, 4:47-54, 5:1-11, 5:19-33, 5:48-59; secondary CA server (255) in FIG. 2A, and its description in the specification; secondary CA server (281) in FIG. |

| | |
|---|---|
| security messages on the conditional access server in a first security domain, as described in FIG. 4 (10:25-41, 10:53-11:25) and FIG. 10A (14:39-15:2). | 2B, and its description in the specification, *e.g.*, at 8:6-38; satellite TV bridges (207, 209), cable TV bridges (217, 219), cable TV secondary CA server (225), satellite TV secondary CA server (227), media player (231), personal computer (233), access point (241), or PDA (243) in FIG. 3, and their description in the specification; processing of security messages on the conditional access server, as described in FIG. 4 (10:25-41, 10:53-11:25), FIG. 5 (431), FIG. 6 (461), FIG. 7 (501), FIG. 8 (531), FIG. 9 (561), FIG. 10A (14:45-50, 14:58-15:39), FIG. 10C (772), FIG. 11 (609), FIG. 12 (609), FIG. 13 (609), FIG. 14 (609), FIG. 15 (703), or FIG. 16 (21:55-23:20), and their description in the specification; and equivalents thereof. |

Asus's impermissible rewriting of the claim and its flawed interpretation of Fig. 3 also affect its proposed construction for this term. As with the prior term, Asus restricts the corresponding structures to devices it mistakenly believes to be in the primary security domain. (Dkt. 47 at 25.) This restriction, unsupported by the plain language of the claim and the intrinsic record, is further flawed by Asus's misunderstanding of Fig. 3—specifically, the devices that reside in the primary security domain. Given these flaws, and Asus's exclusion of equivalents to the disclosed structures, Asus's proposed construction should be rejected. In contrast, VideoLabs's proposed construction correctly identifies corresponding structures that are consistent with the plain language of the claim and supported by the intrinsic record.

For example, the specification teaches that digital processing systems, such as a computer system, can implement a secondary CA server. ('236 Patent, 23:21-48, FIG. 1.) The hardware and software of digital data processing systems, *e.g.*, the computer system (101) of Fig. 1, are thus structures to process security messages on the CA server. (*See, e.g., id.* at 23:35-37 ("a personal computer (PC) running a Windows operating system, or an Apple Macintosh computer.")) Techniques and operations for processing, as described in the patent, "may be carried out in a computer system or other data processing system in response to its processor, such as a microprocessor, executing sequences of instructions." (*Id*. at 24:11-14.) Such

techniques and operations are described in several exemplary embodiments, including processing entitlement management messages ('236 Patent, 4:4-16); processing entitlement control messages (*id.* at 4:20-24); processing substitutive ECM (*id.* at 4:28-43); processing generated second ECM (*id.* at 4:44-54); processing to descramble and rescramble content using a control word or a second control word (*id.* at 4:59-5:59); processing to protect recovered control words using a DRM system (*id.* at 11:30-34); and processing entitlement management messages to determine rights for a DRM system (*id.* at 17:44-46).

Besides the secondary CA server and computer, the patent identifies several more devices for processing. The cable TV secondary CA server processes security messages by descrambling and decrypting broadcasts containing security messages. (*Id*. at 9:35-40.) The satellite TV secondary CA server also processes security messages by having data representing the subscriber and providing authorization services for the satellite TV bridges. (*Id.* at 9:66-10:1.) A PDA, the media player, or "any device convenient to the user" may also process security messages on a CA server to authenticate and authorize the playback of content "in accordance with the rights of the subscriber." (*Id*. at 9:41-43.) The access point may process security messages to authorize other devices, including the PDA, a palm computer, a notebook computer, or a cellular phone. (*See id.* at 9:2-10.) Asus agrees in their construction that satellite and cable TV bridges are a means for processing security messages. (*Id.* at 9:50-66.)

While Asus agrees with VideoLabs that Fig. 10A and 14:39-15:2 provide corresponding structure, Asus only gets it half right. Asus excludes, without any reasoning, the full discussion of structure corresponding to Fig. 10A, including: an example of processing using a secondary CA server to process and manage the EMM for secondary CA clients when the secondary CA server is aware of the secondary CA client as a subscriber ('236 Patent, 15:3-17); a secondary

CA server authorizing a client to use the subscription of the secondary CA server for playback (*id.* at 15:18-27); and an example where the secondary CA server translates access policies in other sophisticated ways (*id.* at 15:28-39).

**3. '236 Patent, Claim 100: "means for transmitting, . . ."**

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C § 112 ¶ 6<br><br>Function: transmitting, from the conditional access server to a secondary conditional access client through a network connection in a second security domain, access controlled data that is in an access controlled format and that is at least partially derived from the security messages<br><br>Structure: satellite TV bridges (207, 209), cable TV bridges (217, 219) and their descriptions in the specification; network 201, i.e., a Local Area Network (LAN) or Wireless LAN, as described in Fig. 3 (8:62-9:59), modem or network interface 110 in FIG. 1; FIG. 4 (10:25-46). | This term is subject to 35 U.S.C. § 112, ¶ 6.<br><br>Function: "transmitting, from the conditional access server to a secondary conditional access client through a network connection in a second security domain, access controlled data that is in an access controlled format and that is at least partially derived from the security messages"<br><br>Structure: display controller (108) or I/O device(s) (110) (*e.g.*, modem, or network interface) in FIG. 1, and their description in the specification; secondary CA server (255) or bridge (259) in FIG. 2A, and their description in the specification; secondary CA server (281), bridge (283), or physical interface (289) in FIG. 2B, and their description in the specification, *e.g.*, at 8:46-49; network (201), satellite TV bridges (207, 209), cable TV bridges (217, 219), cable TV secondary CA server (225), satellite TV secondary CA server (227), media player (231), personal computer (233), access point (241), PDA (243), or wireless connection (245) in FIG. 3, and their description in the specification; transmitted access controlled data, and their descriptions in the specification, *e.g.*, 3:55-58, 8:6-16, 15:13-17; secondary CA servers or networks in FIG. 5 (431, 439), FIG. 6 (461, 465), FIG. 7 (501, 505), FIG. 8 (531, 537), or FIG. 9 (561, 565), and their description in the specification; secondary CA server in FIG. 10C (772), and its description in the specification; bridges (603) or secondary CA servers (609) in FIGS. 11, 12, 13, 14, and their description in the specification; secondary CA server of FIG. 15 (705), and its description in the specification, *e.g.*, at 21:40-44; and equivalents thereof. |

Again, both parties recite the same function but disagree on its interpretation. As with the above "means for processing" term, Asus's identification of corresponding structures is plagued by a misunderstanding of the claim. This time, Asus fails to recognize that the

structures it dismisses as "secondary conditional access clients in the second security domain" incapable of transmission may also function as secondary CA servers transmitting to their own clients. (Dkt. 47 at 26-27; *see* '236 Patent, 3:17-25, 7:59-60 ("For example, the client (279) can be replaced with a bridge and a further secondary CA server.").) Consequently, Asus again incorrectly restricts the corresponding structure to those in the primary security domain, a limitation not found in the claim. In contrast, the proper corresponding structures for this term transmit information from secondary CA servers to secondary CA clients in a second security domain via a network. The information transmitted is access controlled data in an access controlled format that is at least partially derived from security messages of a primary security system in a first domain. VideoLabs's construction properly includes the below structures, which Asus omits.

VideoLabs's construction correctly identifies secondary CA servers, as they transmit information to a secondary CA client. Secondary CA servers and networks transmit access controlled data in an access controlled format at least partially derived from the security messages. (*See, e.g.,* '236 Patent, 12:37-41 ("The secondary CA server descrambles the content and provides the DRM protected content (467) through the network (465) so that only the secondary CA client with appropriate rights (469) can use the content").)[2]

VideoLabs's construction correctly identifies a bridge, which may be integrated into a secondary CA server, transmits access controlled data in an access controlled format at least

[2] The specification provides additional examples and support, including at FIG. 2A (255); FIG. 2B (281) & 8:46-49, 8:50-8:56; 3:55-58; 8:6-16; 15:13-17; FIG. 5 (431, 439) and in the specification 11:28-33; FIG. 6 (461, 465) & 12:33-40; FIG. 7 (501, 505) & 12:59-64; FIG. 8 (531, 537) & 13:53-55; FIG. 9 (561, 565) & 14:25-29; FIG. 10C (722) & 16:3-7; FIG. 11 & 18:48-54; FIG. 12 & 19:36-38; FIG. 13 & 20:17-20; FIG. 14 & 20:47-51; FIG. 15 (705) & 21:40-44.)

partially derived from the security messages. (*Id*. at 7:44-45 ("For example, in FIG. 2A, the bridge 259 may hand over the scrambled (encrypted) content to the secondary CA clients."); FIG. 11 & 17:62-18:1; FIG. 12 & 19:34-41; FIG. 13 & 20:19-25; FIG. 14 & 20:45-46 and 21:10-14.) A bridge may include a physical interface, which transmits connection information through a data network to a client in the secondary security domain. (*Id*. at 8:46-49.) VideoLabs and Asus agree satellite and cable TV bridges are corresponding structures. (*See id.* at FIG. 3 (207, 209) and (217, 219).)

VideoLabs's construction properly identifies the display controller (108). The display controller is connected to the bus and core system logic and may receive access controlled data in an access controlled format that is at least partially derived from the security messages processed by, for example, the microprocessor. (*See id.* at FIG. 1.) The display controller then transmits the information to, for example, a display device. (*Id*. at 23:46-49; *see* FIG. 1.)

VideoLabs's construction correctly includes satellite and cable TV secondary CA servers, as they transmit access controlled data in an access controlled format that is partially derived from security messages to various devices convenient to the user. (*Id*. at 9:23-25 ("Under the control and with the help of the cable TV secondary CA server (225), the [demultiplexed] media content can be secured on a storage (*e.g.*, 221, 223 or 235) for access by various devices"); 9:40-43.)

VideoLabs correctly identifies media players, personal computers, access points, and PDAs, as they transmit over a network connection access controlled data in an access controlled format that is at least partially derived from security messages. Media players may transmit to a device, for example a television set. (*Id*. at 9:24-34 ("the media content can be secured on a storage (*e.g.*, 221, 223 or 235) for access by various devices which can play back the media

content, such as…the media player (231)… [which] may also be integrated with a television set to form a network-ready digital television set.”).) Personal computers may transmit to a device, for example a CRT monitor or LCD panel. (*Id*. at 9:24-31.) Access points may transmit to a device, for example a PDA. (*Id*. at 9:8-11.) PDAs may transmit to other components, including by a wireless connection. (*Id*. at 9:24-28.)

VideoLabs and Asus agree networks are a means for transmitting. However, the network is not limited to LAN or wireless LAN, as proposed by Asus. The patent identifies a broad range of networks, including, for example, by integration in a device (*id*. at 19:22-26), cable connections (*see id.* at 8:58-61; 17:62-65), and telephone calls (*id.* at 14:60-67).

VideoLabs and Asus agree in their proposed constructions that I/O devices, at least the modem and the network interface, are a means for transmitting. However, Asus again presents a construction contradictory to its position. Asus argues I/O devices 110 of computer system 101 “are not linked to transmitting from a conditional access server at all,” and yet ASUS identifies I/O devices, modem or network interface 110 of computer system 101, as a corresponding structure. (Dkt. 47 at 30-31.) I/O device(s) are linked to transmitting access controlled data in an access controlled format at least partially derived from the security messages, for example to the I/O controllers. (*See* ’236 Patent, FIG. 1 (110 and 109).) Asus agrees to the exemplary modem or network interface I/O devices in their construction, but the patent identifies more corresponding structures alongside these examples. VideoLabs is entitled to all corresponding structures identified in the patent specification, including the other exemplary I/O devices, for example video cameras. (*Id*. at 23:49-53.)

Asus includes Fig. 4 as a means for transmitting (Dkt. 47 at 26), but it does not provide any reasoning nor identification of where in the figure or specification transmission occurs. Fig.

4 and its description in the specification are directed to aspects of the invention related to *means for receiving* and *means for processing*, not means for transmitting. (*See* '236 Patent, 10:25-62.) Therefore, Fig. 4 is not a corresponding structure.

Further, Asus improperly excludes "and equivalents thereof" from the construction, although VideoLabs is statutorily entitled to equivalent structures. Therefore, VideoLabs's proposed construction should be adopted because it accurately and completely identifies all structures clearly linked to the recited "transmitting…" function of the claim.

**4. '236 Patent, Claim 116: "means for receiving, at a secondary conditional access client . . ."**

| Asus's Proposed Construction | VideoLabs's Proposed Construction |
|---|---|
| Subject to 35 U.S.C § 112 ¶ 6<br><br>Function: "receiving, at a secondary conditional access client from a conditional access server through a network connection, access controlled data that is in an access controlled format and that is at least partially derived from a security message of the primary security system in a first security domain, the secondary conditional access client being in a second security domain"<br><br>Structure: network 201, *i.e.,* a Local Area Network (LAN) or Wireless LAN as described in Fig. 3 and 9:2-14, modem or network interface devices 110 in FIG. 1; secondary CA clients (271, 273, or 279) in FIG. 2A, and their description in the specification; media player (231), personal computer (233), TV (237, 247), access point (241), or PDA (243) in FIG. 3, and their description in the specification; secondary CA clients of FIGS. 5, 6, 7, 8, or 9 and their description in the specification; FIG. 10C and its description in the specification; secondary CA client (707) of FIG. 15, and its description in the specification; or | This term is subject to 35 U.S.C. § 112, ¶ 6.<br><br>Function: "receiving, at a secondary conditional access client form a conditional access server through a network connection, access controlled data that is in an access controlled format and that is at least partially derived from a security message of the primary security system in a first security domain, the secondary conditional access client being in a second security domain"<br><br>Structure: I/O Device(s) (110) (*e.g.*, modem, or network interface) in FIG. 1, and their description in the specification; secondary CA clients (271, 273, or 279) in FIG. 2A, and their description in the specification; network (201), storage (221, 223, 229, 235), media player (231), personal computer (233), TV (237, 247), display device (239), access point (241), or PDA (243) in FIG. 3, and their description in the specification; secondary CA clients of FIGS. 5, 6, 7, 8, 9, or 10A, and their description in the specification; media player (775) in FIG. 10C, and its description in the specification; renderers (607) in FIGS. 11, 12, 13, or 14, and their description in the specification; secondary CA client (707) of FIG. 15, and its description |

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| equivalents thereof. | in the specification; and equivalents thereof. |

VideoLabs and Asus agree on the function of this term and many of the corresponding structures. The parties' dispute centers on structures proposed by VideoLabs that Asus excludes. (Dkt. 47 at 28.) Asus's exclusion of these structures is improper as each structure proposed by VideoLabs corresponds to the recited function.

Asus's proposed construction omits storage (221, 223, 229, 235) and renderer (607). (*Id.*) Yet these structures are clearly linked to the claimed function, as the patent describes them as secondary CA clients in the second security domain that receive access controlled data consistent with the claimed function. (*See* '236 Patent, FIGS. 3, 11-14, 11:3-7, 9:20-28, 18:44-50, 19:20-26.) For example, the specification explicitly states that a renderer and storage are examples of secondary CA clients. (*Id*. at 11:3-7 ("the secondary CA clients (e.g., a bridge, a renderer or a storage)"); *see also id.* at 9:20-28; 18:44-50; 19:20-26.)

Asus's proposed construction also omits the secondary CA client described in an embodiment of the process of Fig. 10A. This secondary CA client should be included as corresponding structure, given its role in the authorization process for recorded media depicted in Fig. 10A. (*Id.* at 14:39-41.) The figure identifies a step labelled "descramble the program for playback" (747). (*Id.* at FIG. 10A.) This is a function of a secondary CA client authorized to obtain access controlled data in an access controlled format, and the local device that performs the descramble step (747) in Fig. 10A is the secondary CA client. (*Id.* at 7:46-47; 14:58-15:39.) I/O Device(s) (110) in Fig. 1 and display device (239) in Fig. 3 should likewise be included as corresponding structure because both are secondary CA clients and/or servers to secondary CA clients. In general, a secondary CA client relies on the secondary CA server to obtain content. (*Id.* at 7:23-33.) The secondary CA server conditionally allows the secondary CA clients to

access content in accordance with the access terms and conditions from the primary CA server. (*Id.* at 7:40-43; FIG. 2A.)

In some embodiments, a personal computer itself acts as a secondary CA client. (*Id.* at FIG. 3; 8:63-66; 6:6-7; FIG. 1; 23:34-38.) As a secondary CA client, a personal computer can receive access controlled data in an access controlled format from I/O device(s) such as a modem or network interface. (*Id.* at 21:44-46.)

In other embodiments, a personal computer acts as a secondary CA server and transmits access controlled data to its secondary CA clients through a network connection. (*Id.* at 23:20-25.) When the personal computer of Fig. 1 transmits access controlled data through an I/O controller to I/O device(s), the personal computer is a secondary CA server to its secondary CA clients—i.e., the I/O device(s). (*Id.* at FIG. 1.) When the personal computer (233) of Fig. 3 displays content on display device (239) and conditionally allows display device (239) to access content in accordance with the access terms and conditions from the primary CA server, personal computer is a secondary CA server to its secondary CA client—i.e., display device (239). (*See id.* at 9:28-34.) Thus, I/O device(s) and display device (239) in Fig. 3 act as secondary CA clients, receiving from secondary CA server personal computer (233) and performing the function of the claimed term.

Asus omits "I/O Device(s) (110)" and "display device (239)" from its proposed structure, asserting that they "are nowhere associated with the secondary CA clients in the specification." (Dkt. 47 at 28.) But, as explained above, the patent discloses I/O device(s) and display devices as secondary CA clients that correspond to the claimed function. Asus further attempts to restrict the I/O devices in its proposed construction to only modems or network interfaces. (*Id.*) But the specification and Fig. 1 provides other types of I/O device(s). ('236 Patent, 23:46-53.) For

example, the patent more broadly describes I/O devices as being coupled to the system via "input/output controllers 109." (*Id.* at 23:53-54.) The patent further explains "I/O controller 109 includes a USB (Universal Serial Bus) adapter for controlling USB peripherals, and/or an IEEE-1394 bus adapter for controlling IEEE-1394 peripherals." (*Id.* at 24:5-8.) Given that the patent expressly discloses USB and IEEE-1394 peripherals—e.g., storage or display devices—as I/O devices, Asus's effort to restrict corresponding I/O device(s) to only modems or network interfaces is unjustified.

Asus further contends that VideoLabs improperly "proposes to include cable TV bridges 217 and 219 and satellite TV bridges 207 and 209 that are not linked in the specification with the second security domain or associated with secondary conditional access servers." (Dkt. 47 at 28.) This is not true. VideoLabs has not identified these cable or satellite TV bridges in its proposed corresponding structure.

Accordingly, these five structures in VideoLabs's proposed construction that Asus omits—i.e., storage (221, 223, 229, 235), renderer (607), secondary CA client of Fig. 10A's process, I/O device(s) in Fig.1, and display device (239)—are sufficiently linked to secondary CA clients in the specification and to the claimed function. As such, this Court should adopt VideoLabs's proposed structure for the claimed function and include these five omitted structures.

## IV. CONCLUSION

For the reasons above, VideoLabs respectfully requests the Court to adopt VideoLabs's proposed constructions.

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Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on June 5, 2024, a true and correct copy of the foregoing document was delivered to all counsel of record via CM/ECF.

*/s/ Max Ciccarelli*
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