

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

**Before The Honorable Monica Bhattacharyya
Administrative Law Judge**

In the Matter of

**CERTAIN VIDEO-CAPABLE
ELECTRONIC DEVICES, INCLUDING
SMART TELEVISIONS, MONITORS,
AND COMPONENTS THEREOF**

Investigation No. 337-TA-1495

RESPONDENTS' AND INTERVENOR'S OPENING CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I.	LEGAL STANDARDS	1
II.	PERSON OF ORDINARY SKILL IN THE ART	2
III.	U.S. PATENT NO. 8,085,846	2
A.	“intra prediction” (Claims 1, 9, 14, and 15).....	3
B.	“first prediction type ... [and] second prediction type” (Claim 19)	7
C.	“intra-inter [en]coded block” (Claims 1, 9, 11, 13, 15)	12
IV.	U.S. PATENT NO. 9,294,784	17
A.	“select / selecting / selected for the region” (Claims 9, 13, 15).....	17
V.	U.S. PATENT NO. 10,250,877	23
A.	“being applied jointly” (Claims 1, 4, 7, 8).....	23
VI.	U.S. PATENT NO. 11,695,962	28
VII.	U.S. PATENT NO. 11,399,168	35
1.	The Specification Confirms the Color Transform Parameters Are Encoded Descriptions of the Transforms Themselves.....	36
2.	The Specification Uses “Representative of” and “Describe” Interchangeably	38
3.	“Represent” Does Not Merely Mean “Related to”	39
VIII.	U.S. PATENT NO. 9,654,751	40
A.	“a plurality of picture data” (Claim 14)	40
1.	“Plurality” Means “More Than One”	42
2.	“Picture Data” Means a Complete Image or Video, Not the Pixels That Comprise a Single Image or the Frames That Make Up a Video	43
3.	“Picture Data” Is Not Metadata	45

TABLE OF AUTHORITIES

Cases

<i>Azurity Pharms., Inc. v. Alkem Lab’ys Ltd.</i> , 133 F.4th 1359 (Fed. Cir. 2025)	2
<i>Bicon, Inc. v. Straumann Co.</i> , 441 F.3d 945 (Fed. Cir. 2006)	19, 25, 39
<i>Bilstad v. Wakalopulos</i> , 386 F.3d 1116 (Fed. Cir. 2004)	43
<i>CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG</i> , 224 F.3d 1308 (Fed. Cir. 2000)	42
<i>cf. Computer Docking Station Corp. v. Dell, Inc.</i> , 519 F.3d 1366 (Fed. Cir. 2008)	6
<i>Cybersettle, Inc. v. Nat’l Arbitration Forum, Inc.</i> , 243 F.App’x 603 (Fed. Cir. 2007)	43
<i>Data Engine Techs. LLC v. Google LLC</i> , 10 F.4th 1375 (Fed. Cir. 2021)	2
<i>Fenner Investments, Ltd. v. Microsoft Corporation</i> 632 F. Supp.2d 627 (E.D. Tex. 2009).....	40
<i>Howmedica Osteonics Corp. v. Zimmer, Inc.</i> , 822 F.3d 1312 (Fed. Cir. 2016)	12
<i>Indacon, Inc. v. Facebook, Inc.</i> , 824 F.3d 1352 (Fed. Cir. 2016)	11
<i>Int’l Ltd. v. Beyond Innovation Tech. Co.</i> , 521 F.3d 1351 (Fed. Cir. 2008)	16
<i>Intern., Inc. v. Sterilite Corp.</i> , 164 F.3d 1372 (Fed. Cir. 1998)	43
<i>Medrad, Inc. v. MRI Devices Corp.</i> , 401 F.3d 1313 (Fed. Cir. 2005)	1
<i>O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.</i> , 521 F.3d 1351 (Fed. Cir. 2008)	passim
<i>Omega Eng’g, Inc. v. Raytek Corp.</i> , 334 F.3d 1314 (Fed. Cir. 2003)	1, 5

<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)	1, 3, 16, 24
<i>Seachange Int’l, Inc. v. C-COR Inc.</i> , 413 F.3d 1361 (Fed. Cir. 2005)	2
<i>Stylwan IP Holding, LLC v. Stress Engr. Services, Inc.</i> , No. 2023-1269, 2025 WL 1501716 (Fed. Cir. May 27, 2025).....	43
<i>Tech. Props. Ltd. v. Huawei Techs. Co.</i> , 849 F.3d 1349 (Fed. Cir. 2017)	2
<i>Tehrani v. Hamilton Medical, Inc</i> 331 F.3d 1355 (Fed. Cir. 2003)	40
 Statutes	
35 U.S.C. § 102.....	4
35 U.S.C. § 103.....	4

Pursuant to Procedural Schedule (Order No. 9) and G.R. 6.1, Respondents TCL Industries Holdings Co., Ltd., TCL Technology Group Corp., TCL Electronics Holdings Limited, Shenzhen TCL New Technology Co., Ltd., TCL King Electrical Appliances (Huizhou) Company Limited, TCL Overseas Marketing Limited, TCL Smart Device (Vietnam) Company Limited, TCL Smart Screen Technology HK, TCL Moka International Ltd., and TTE Technology, Inc. (collectively, “TCL”) and Hisense USA Corporation (“Hisense USA”), Hisense Co., Ltd., and Hisense Electronics Manufacturing Company of America Corporation (“HEMCA”) (collectively, “Hisense”) (together, “Respondents”) and Intervenor Dolby Laboratories Inc. (“Intervenor”) respectfully submit the following Opening Claim Construction Brief regarding the terms of U.S. Patent Nos. 8,085,846 (the ‘846 Patent”), 9,294,784 (the ‘784 Patent”), 9,654,751 (the ‘751 Patent”), 10,250,877 (the ‘877 Patent”), 11,399,168 (the ‘168 Patent”), and 11,695,962 (the ‘962 Patent”).

I. LEGAL STANDARDS

Courts construe claims according to how a person of ordinary skill in the art would have understood them at the time of the invention in light of the entire patent, including the claims in which the terms appear and the written description. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13, 1315-16 (Fed. Cir. 2005). “We cannot look at the ordinary meaning of [a] term ... in a vacuum” but must consider “the context of the written description and the prosecution history.” *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (citation omitted).

Prosecution disclaimer precludes patentees from recapturing claim meanings disclaimed during prosecution. *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003) (citations omitted). Where the patentee distinguishes prior art to obtain a patent, disclaimer narrows claim scope congruent with that surrender. *Id.* at 1324-1327; *Seachange Int’l, Inc. v. C-*

COR Inc., 413 F.3d 1361, 1372-73 (Fed. Cir. 2005). Disclaimer can occur through claim amendments or arguments made to the Patent Office. *Tech. Props. Ltd. v. Huawei Techs. Co.*, 849 F.3d 1349, 1357 (Fed. Cir. 2017); *see also Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1382-1383 (Fed. Cir. 2021) (“A patentee may, through a clear and unmistakable disavowal in the prosecution history, surrender certain claim scope to which he would otherwise have an exclusive right by virtue of the claim language.”). Any explanation, elaboration, or qualification presented during examination is relevant for this purpose. *Azurity Pharms., Inc. v. Alkem Lab ’ys Ltd.*, 133 F.4th 1359, 1366 (Fed. Cir. 2025). Holding patentees to their statements protects the public and promotes the notice function of intrinsic evidence. *Data Engine Techs.*, 10 F.4th at 1383. Disclaimer controls despite broad claim language or other arguments sufficient to overcome an art rejection. *Id.*

II. PERSON OF ORDINARY SKILL IN THE ART

For each of the Asserted Patents, a person of ordinary skill in the art (“POSITA”) at the relevant time would have had at least a bachelor’s degree in electrical engineering, computer science, or a similar field, and 2–3 years of experience in video data, coding, communications, and standards.

III. U.S. PATENT NO. 8,085,846

U.S. Patent No. 8,085,846 (“’846 patent”) is titled “Method and Apparatus for Decoding Hybrid Intra-Inter Coded Blocks.” Ex. 1 (’846 Patent) at Cover. The ’846 patent is directed to a video coding mode in which two predictions for the same block are combined rather than one being selected. The Abstract describes “[a] hybrid intra-inter bi-predictive (or multi-predictive) coding mode” that “allows both intraframe (intra) and interframe (inter) predictions to be combined together for hybrid-encoding a current macroblock or a subblock.” *Id.* at Abstract. The

specification names the disclosed mode “the intra-inter hybrid coding mode,” distinguishing it from the intra-only and inter-only modes of the related art. *Id.* at 7:62-65. It also describes a further use of bi-prediction: “Bi-prediction may be used also in I-pictures, with combined intra-intra predictions.” *Id.* at 8:6-8.

The parties have identified three terms from the ’846 patent for briefing at this stage.

A. “intra prediction” (Claims 1, 9, 14, and 15)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“intra prediction”	Plain and ordinary meaning	Plain and ordinary meaning which is “a prediction for a block in the picture obtained by locating a matching (similar) block in that same picture.”

Respondents propose that “intra prediction” be construed according to its plain and ordinary meaning, which is “a prediction for a block in the picture obtained by locating a matching (similar) block in that same picture,” while Complainants seek an unspecified plain and ordinary meaning detached from the intrinsic record. Joint Claim Construction Chart, Table 2 (No. 1). The claims recite “intra prediction” as one of two predictions of the same current block, paired against “inter prediction,” without stating what makes a prediction one rather than the other. Ex. 1 (’846 Patent) at cls. 1, 9, 14, 15. For example, claims 1 and 14 recite “the first prediction of the current block is intra prediction and the second prediction of the current block is inter prediction.” *Id.* at cls. 1, 14. During prosecution, the applicant explicitly described the meaning of “intra prediction” to the Examiner to secure allowance. Respondents’ construction rests on and is squarely consistent with those statements, which are the primary intrinsic evidence of “how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317

(Fed. Cir. 2005) (en banc). Respondents’ construction thus properly captures the term’s plain and ordinary meaning in its proper intrinsic context and should be adopted.

1. During Prosecution, the Applicant Twice Described “Intra Prediction” as being Performed by Block-Matching

Respondents’ construction gives meaning to the term “intra prediction” consistent with the applicant’s own explicit, repeated statements during prosecution. Specifically, the applicant twice advanced a definition of “intra prediction” that requires locating a matching block within the same picture, to overcome separate prior art rejections. First, the Examiner rejected claims 1-12 and 14-22 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,898,243 to Alvarez. Ex. 2 (Sept. 10, 2010 Office Action) at 3. The applicant traversed by defining the claim terms:

However, a “prediction” is a term of art, as are “intra prediction” and “inter prediction”. As is known, intra prediction involves the partitioning of a current picture (to be encoded or decoded) into a plurality of blocks where a prediction for a block in the picture is obtained by locating a matching (similar) block in that same picture.

Ex. 3 (Oct. 27, 2010 Response) at 8-9 (punctuation in original). The applicant further stated that “the predictions recited in Claims 1, 9, 14-15, and 19 are block-based, as they pertain to a current block.” *Id.* at 8.

Second, the Examiner later issued a further Office Action rejecting claims 1-22 under 35 U.S.C. § 103(a) over U.S. Patent No. 5,574,663 to Ozelik in view of U.S. Publication No. 2005/0008240 to Banerji. Ex. 4 (Dec. 21, 2010 Office Action) at 2. The applicant again advanced the same description of “intra prediction” against the new references, stating:

each of the above reproduced claims recites language directed to block-based (i.e., block matching) video decompression, where **a current block to be decoded is matched with a reference block in the same picture (intra prediction)** or in another picture from the same video sequence (inter prediction).

Ex. 5 (Feb. 10, 2011 Response) at 7 (emphasis added). The “above reproduced claims” include issued claims 1, 9, 14, and 15. The applicant further stated Ozcelik “does not and actually cannot generate a prediction for a block.” *Id.* at 8.

2. The Claims Issued on That Description, Without Amendment

The Examiner allowed claims 1-22, stating that the action was “in response to amendment filed on 2/10/11” and that “[t]he applicant’s amendments have been fully considered therefore this case is in condition for allowance.” Ex. 6 (Apr. 20, 2011 Notice of Allowability) at 2. That “amendments” recital was keyed to the caption of the responsive paper, as the February 10, 2011 Response designated claims 1, 14, and 19 “(previously presented),” designated the remaining claims “(original),” and did not designate any as “(currently amended).” Ex. 5 (Feb. 10, 2011 Response) at 2-4. The Statement of Reasons for Allowance stated:

The prior art of record fail[s] to anticipate or render obvious the following recited features: combining a first prediction of a current block with a second prediction of a current block; wherein the first prediction of the current block is intra prediction and the second prediction of the current block is inter prediction as recited in all the independent claims.

Ex. 6 (Apr. 20, 2011 Notice of Allowability) at 2. The claims thus issued in the identical form as when the February 10, 2011 Response was filed.

This record supports Respondents’ construction on two independently sufficient bases. First, the applicant’s statements regarding “intra prediction” are definitional. The applicant explicitly told the Examiner that the term was a term of art, and supplied its meaning. *See e.g.*, Ex. 3 (Oct. 27, 2010 Response) at 8. That is intrinsic evidence of “how the inventor understood the invention.” *Phillips*, 415 F.3d at 1317. Second, the applicant’s statements independently support Respondents’ construction under the doctrine of prosecution disclaimer because they were made to secure allowance and are “both clear and unmistakable.” *Omega Eng’g, Inc. v. Raytek Corp.*,

334 F.3d 1314, 1325-26 (Fed. Cir. 2003). Moreover, the applicant affirmatively stated what the claims require rather than describing features of a reference. *Id.*; *cf. Computer Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374-75 (Fed. Cir. 2008). The applicant's statements supplied the grounds on which each reference was distinguished, and the definitions were repeated across two responses addressed to different art and different statutory grounds. Under either framework, Respondents' construction gives proper meaning to the claims.

3. The Specification Does Not Otherwise Define "Intra Prediction"

The '846 patent never otherwise defines "intra prediction." Where the patentee meant to supply a definition, it did so expressly: "Hereinafter, the term 'block' generally refers to a rectangular group of adjacent pixels of any dimensions." Ex. 1 ('846 Patent) at 3:63-64. No comparable statement appears in the specification for "intra prediction."

The specification's references to known technology are entirely consistent with the meaning of "intra prediction" proposed by Respondents based on the applicant's statements during prosecution. The specification describes an example of the H.264 4×4 intra mode and labels it as such, *id.* at 2:64-66 ("the intraframe (intra) prediction sampling method for the 4×4 intra mode in the H.264 standard of the related art"). It then introduces "a new bi-prediction mode type, herein called the intra-inter hybrid coding mode, distinguished from the intra-only (FIGS. 1 and 2) and inter-only (FIGS. 3 and 4) prediction modes of the related art." *Id.* at 7:62-65. The specification describes the *combination* and distinguishes against the modes of the related art without defining what an intra prediction is in the context of the combination. Nothing in these descriptive references, nor anywhere else in the specification, contains lexicography or disclosure inconsistent with or otherwise overriding the applicant's explicit, repeated definitions supplied to the Examiner during prosecution. Respondents' construction appropriately gives "intra prediction" the meaning the applicant twice told the Examiner it has.

4. Complainants’ “Plain and Ordinary Meaning” Position Does Not Resolve the Parties’ Dispute

In addition to being detached from the intrinsic record as discussed above, Complainants’ bare “plain and ordinary meaning” proposal also fails because it does not identify a meaning, and it does not answer what makes a prediction an intra prediction. That dispute is for the ALJ to resolve, and restating the term does not resolve it. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-62 (Fed. Cir. 2008); *id.* at 1362 (“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.”).

For at least the foregoing reasons, Respondents respectfully request that “intra prediction” in claims 1, 9, 14, and 15 of the ’846 Patent be construed in accordance with its plain and ordinary meaning in view of the intrinsic record, which is “a prediction for a block in the picture obtained by locating a matching (similar) block in that same picture.” This is the meaning the applicant expressly gave the Examiner in response to two rejections of claims having the disputed term, and following which the claims were allowed without amendment.

B. “first prediction type ... [and] second prediction type” (Claim 19)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“first prediction type ... [and] second prediction type”	Plain and ordinary meaning	Plain and ordinary meaning which is “intra prediction type ... and inter prediction type”

Claim 19 recites, among other things, “combining a first prediction type for a current block with a second prediction type for a current block; wherein the combination of the first prediction type and the second prediction type forms a hybrid prediction type.” The parties dispute whether the two prediction types in the claim are (i) the intra and inter prediction types the ’846 patent identifies as the components of a “hybrid,” or (ii) any prediction types. Respondents’ proposed construction rests on: claim 19’s requirement that the combination “form[] a hybrid prediction

type,” Ex. 1 (’846 Patent) at claim 19; the description in the ’846 specification of “hybrid”; and a prosecution record in which the applicant and the Examiner both equated the term with intra prediction and inter prediction. During prosecution, the applicant twice used claim 19’s own phrase “hybrid ... prediction type” and expressly supplied its meaning as “(inter and intra)” to distinguish claim 19 over the prior art.

1. During Prosecution, the Applicant Described the First and Second Prediction Types as Intra and Inter Prediction

In the Response filed July 1, 2010, the applicant indicated equivalence of “first prediction type ... [and] second prediction type” with “intra prediction and an inter prediction” and/or “(inter and intra) prediction.” Distinguishing Martemyanov, the applicant argued that the cited unit was “not disclosed as having the capability to combine an intra prediction and an inter prediction and/or form a hybrid (inter and intra) prediction type as essentially recited in Claims 1, 9, 14, 15, and 19.” Ex. 7 (July 1, 2010 Response) at 7. Two pages later, distinguishing Machida, the applicant repeated that the reference “fails to teach or even remotely suggest ... forming a hybrid (inter and intra) prediction type as essentially recited in independent Claims 1, 9, 14, 15, and 19.” *Id.* at 9. Claim 19 is identified both times, and the clarification the applicant explicitly supplied for “hybrid ... prediction type” is “(inter and intra).”¹

The applicant grouped claim 19 with the intra-plus-inter claims in the same response. The applicant stated that “no combining of **intra prediction** and **inter prediction** are even remotely suggested, in contrast to the subject matters of Claims 1, 9, 14, 15, and **19**.” *Id.* at 8 (emphasis added).

¹ Respondents rely here on the applicant’s usage of the claim language, not on the accuracy of the applicant’s assertions about the prior art.

The Statement of Reasons for Allowance for the claims, including claim 19, identifies the same combination: “The prior art of record fail[s] to anticipate or render obvious the following recited features: combining a first prediction of a current block with a second prediction of a current block; wherein the first prediction of the current block is **intra prediction** and the second prediction of the current block is **inter prediction** as recited in all the independent claims.” Ex. 6 (Apr. 20, 2011 Notice of Allowability) at 2 (emphasis added).

2. The '846 Patent Describes “Hybrid” as the Combination of Intra and Inter Predictions in Both the Specification and Plain Language of Claim 19

The meaning of the claim term “first prediction type ... [and] second prediction type” is defined in claim 19 by what the “combination of [them] forms”: “a hybrid prediction type.” Ex. 1 ('846 Patent), claim 19. Throughout the specification, “hybrid” refers to a combination of intra and inter predictions. The patent itself is titled “Method and Apparatus for Decoding Hybrid Intra-Inter Coded Blocks.” *Id.*, Title. Its Field of the Invention states that “[t]he invention relates generally to digital video CODECs, and more particularly to the hybrid use of both intra and inter coding for macroblocks.” *Id.* at 1:20-22. The Detailed Description consistently reinforces this when introducing the “hybrid” mode: “FIG. 5 illustrates a new bi-prediction mode type, herein called the intra-inter hybrid coding mode, distinguished from the intra-only (FIGS. 1 and 2) and inter-only (FIGS. 3 and 4) prediction modes of the related art ...” *Id.* at 7:62-65. It then further describes what that mode does: “The disclosed hybrid bi-predictive coding mode allows both Intraframe (intra) and interframe (inter) predictions to be combined together (e.g., averaged, or weighted) ...” *Id.* at 8:9-12.

In contrast, when the specification describes combining two intra predictions in an I-picture, it does not use the word “hybrid.” Instead, it calls that operation “bi-prediction”: *Id.* at 8:6-8 (“Bi-prediction may be used also in I-pictures, with combined intra-intra predictions”).

The specification elsewhere describes pairings other than intra-plus-inter, and this discussion further shows that the patentee reserved “hybrid” only for the combination of intra and inter predictions. *See id.* at 8:32-35 (“It is possible...the combination of two different intra predictions or the combined usage of inter and intra predictions would give a better prediction for a given macroblock ...”); *id.* at 9:16-19 (“This approach allows various combinations, such as both/all predictions being intra but having different directions, or being different-list predictions, or using different block partitions.”). The latter quote describes what combinations the tree-structured signaling architecture it is discussing can express (which may include non-hybrid combinations), but when discussing the example of “a hybrid-coded macroblock” in this context, *id.* at 9:10, the patent describes combining an “intra 4x4” prediction and an inter “16x8 list 1 block prediction.” *Id.* at 9:11-15; *see also id.*, Table 3 (listing the referenced “16x8 list 1 block” as an “Inter Macroblock” type). What neither passage does is apply “the intra-inter hybrid coding mode” (*id.* at 7:62-65), to an intra-plus-intra pairing, which the specification instead calls “bi-prediction” (*id.* at 8:6-8). That usage, together with the applicant’s express statements regarding “hybrid (inter and intra) prediction type” during prosecution, supports Respondents’ construction of “first prediction type ... [and] second prediction type” in claim 19.

3. The Doctrine of Claim Differentiation Does Not Preclude Construing Claim 19 to Require Distinct Intra and Inter Prediction Types

To the extent Complainants argue that construing claim 19’s prediction types as intra and inter makes claim 19 duplicative of claim 1 or claim 14, that argument is without merit for at least three reasons.

First, claim differentiation is inapplicable because the limitation arises from claim 19’s own language. Claims 1 and 14 each recite a wherein clause stating what each prediction *is*: “wherein the first prediction of the current block is intra prediction and the second prediction of

the current block is inter prediction.” Ex. 1 (’846 Patent) at claims 1, 14. In contrast, claim 19 states what the combination *forms*: “wherein the combination of the first prediction type and the second prediction type forms a hybrid prediction type.” *Id.* at claim 19. The independent claims recite and maintain distinct conceptual frameworks, and Respondents’ construction, drawn from the language of claim 19 itself, does not implicate claim differentiation.

Second, particularly for independent claims, the Federal Circuit has declined to apply the doctrine of claim differentiation where, as here, the claims are not otherwise rendered identical in scope. *See, e.g., Indacon, Inc. v. Facebook, Inc.*, 824 F.3d 1352, 1358 (Fed. Cir. 2016). As discussed above, the independent claims at issue have distinct conceptual frameworks and thus retain distinct scope. In addition, the parties agree that claim 1’s preamble, “[i]n a video decoder, a method for decoding a hybrid intra-inter encoded block comprising,” is limiting. Joint Claim Construction Chart, Table 1. Claim 19’s preamble recites only “[i]n a video decoder, a method for video decoding a block comprising.” Ex. 1 (’846 Patent) at claim 19. Substituting Respondents’ construction into claim 19 yields:

“combining [intra prediction type] for a current block with [inter prediction type] for a current block; wherein the combination of the [intra prediction type] and the [inter prediction type] forms a hybrid prediction type.”

The claim remains directed to what the combination forms rather than to what each prediction is. The dependent claims likewise carry different antecedents in each family: claims 4 and 5 recite combining “the first prediction and the second prediction” by averaging and by weighting, while claims 21 and 22 recite performing these operations on “the two prediction types,” and claim 20 has no counterpart in the claim 1 family. Ex. 1 (’846 Patent) at claims 4, 5, 20, 21, 22.

Third, claim differentiation is a presumption that yields to the intrinsic record. It is a rebuttable presumption and cannot expand a claim beyond what the written description and the

prosecution history show was claimed. *Howmedica Osteonics Corp. v. Zimmer, Inc.*, 822 F.3d 1312, 1323 (Fed. Cir. 2016) (explaining that claim differentiation is a “rebuttable presumption that may be overcome by a contrary construction dictated by the written description or prosecution history,” and serves as a “guide, not a rigid rule”). Here, the intrinsic record is specific: the patent’s naming of the intra-inter hybrid coding mode, Ex. 1 (’846 Patent) at 7:62-65; the applicant’s repeated use of claim 19’s own “hybrid ... prediction type” phrase with the parenthetical “(inter and intra),” Ex. 7 (July 1, 2010 Response) at 7, 9; and the Examiner’s identification of the intra-plus-inter combination “as recited in all the independent claims,” Ex. 6 (Apr. 20, 2011 Notice of Allowability) at 2.

Respondents’ proposed construction identifies the two prediction types that claim 19 combines, whereas Complainants’ proposal does not. Leaving the term unconstrued would carry that disagreement into the evidentiary hearing rather than resolving it now. For the foregoing reasons, Respondents respectfully request that the term “first prediction type ... [and] second prediction type” in claim 19 of the ’846 patent be construed according to its plain and ordinary meaning, which is “intra prediction type ... and inter prediction type.” The “intra prediction” component of that construction carries the construction set forth in Term 1. *See* Ex. 3 (Oct. 27, 2010 Response) at 8-9.

C. “intra-inter [en]coded block” (Claims 1, 9, 11, 13, 15)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“intra-inter [en]coded block”	Plain and ordinary meaning	Plain and ordinary meaning which is “a compressed representation of a current block obtained using a prediction that is a combination of an inter prediction and an intra prediction.”

This phrase appears in asserted claims 1, 9, 11, 13, and 15 of the '846 Patent as “hybrid intra-inter encoded block” (claim 1), “hybrid intra-inter coded block” (claims 9, 11, 15), and “bi-predictive intra-inter encoded blocks” (claim 13). The bracketed “[en]” accounts for each of these variants. Respondents’ construction includes two concepts, both of which are consistent with the plain and ordinary meaning in light of the intrinsic record: “intra-inter” identifies a prediction formed by combining an intra prediction and an inter prediction; “[en]coded block” identifies the encoded block carried in the bitstream. Ex. 1 ('846 Patent), Abstract.

1. The Language of the Claims Requires a Block Whose Prediction Combines an Intra Prediction and an Inter Prediction

Claim 1 recites: “In a video decoder, a method for decoding a hybrid intra-inter encoded block comprising: combining a first prediction of a current block with a second prediction of a current block; wherein the first prediction ... is intra prediction and the second prediction ... is inter prediction.” Ex. 1 ('846 Patent) at claim 1. Claim 9 recites similar architecture in apparatus form: a decoder “adapted to decode a hybrid intra-inter coded block,” comprising prediction blocks outputting “a first intra prediction” and “a first inter prediction,” each connected to a combining unit. Ex. 1 ('846 Patent) at claim 9. Claims 11 and 15 use the phrase in a similar fashion. *Id.* at claims 11, 15; *see* n.2 *infra*. Claim 13 reads in its entirety: “A video decoder adapted to decode a bitstream including bi-predictive intra-inter encoded blocks.” *Id.* at claim 13. It recites no combining step and no separate recitation of an intra or an inter prediction. Thus, the meaning of intra-inter [en]coded block is critically important to the questions of infringement and invalidity with respect to claim 13.

The parties have agreed that the preambles of claims 1, 9, 13, and 15 are limiting. Joint Claim Construction Chart, Table 1. The disputed term “intra-inter [en]coded block” is separately identified for briefing in Table 2, No. 3.

2. The Specification Applies “Intra-Inter” to a Combination of an Intra and an Inter Prediction, and Labels Same-Type Combinations Differently

The patent is titled “Method and Apparatus for Decoding Hybrid Intra-Inter Coded Blocks.” Ex. 1 (’846 Patent), Title. The abstract states: “A hybrid intra-inter bi-predictive (or multi-predictive) coding mode allows both intraframe (intra) and interframe (inter) predictions to be combined together for hybrid-encoding a current macroblock or a subblock.” *Id.*, Abstract. The Summary of the Invention uses the claims’ terms: “An embodiment of the invention provides for decoding a hybrid intra-inter encoded block by combining a first prediction ... with a second prediction ...,” the first being “intra prediction” and the second “inter prediction.” *Id.* at 7:11-16. The Detailed Description names the mode “a new bi-prediction mode type, herein called the intra-inter hybrid coding mode, distinguished from the intra-only ... and inter-only ... prediction modes of the related art,” *id.* at 7:62-65, and states that the disclosed mode “allows both Intraframe (intra) and interframe (inter) predictions to be combined together ... for encoding a current macroblock” *Id.* at 8:9-12.

Where the specification describes combining two predictions of the same type, it uses a different label. It describes the general bi-prediction case as one in which “two (or more) predictions, which may include one or more intra predictions, are to be used (combined) for making the final prediction of a given block or macroblock,” *id.* at 8:3-5; describes bi-prediction in I-pictures “with combined intra-intra predictions,” *id.* at 8:6-8; and describes the combining unit as adapted to combine a first intra prediction with “a second (e.g., subsequent) intra prediction” from the same intra-frame prediction block, *id.* at 12:1-3.

3. An “[En]coded Block” Is the Coded Representation Carried in the Bitstream, Not the Prediction Used To Obtain It

The portion of Respondents’ construction that sets forth “a compressed representation of a current block” derives from and is consistent with the patent’s treatment of a coded block as the encoded output carried in the bitstream. The abstract states that “A video decoder receives and decodes a data stream that may contain a block/macroblock encoded in accordance with the hybrid intra-inter bi-predictive encoding mode.” Ex. 1 (’846 Patent), Abstract. In the FIG. 6 description, after “compressing and encoding the data,” the encoder passes it to a transmission system that “transmits the bitstream containing the hybrid-encoded macroblocks.” *Id.* at 10:50-55.

The predictions and their combination sit on the other side of that line: the combining unit’s output is described as a prediction. *Id.* at 12:40-46 (“The decoder combining unit 827 is similar in function to the combining unit 727 ... in that it combines a first (intra) prediction ... with a second (inter) prediction ... to output a resulting combined (hybrid intra-inter) prediction”) (reproduced as printed); *accord id.* at 11:54-59 (encoder combining unit 727). The patent thus names three things separately: (1) the predictions the combining unit receives, (2) the combined “(hybrid intra-inter) prediction” it outputs, and (3) the coded block data the decoder receives and decodes. The term “intra-inter [en]coded block” is directed to the third. The modifier “intra-inter” identifies the prediction by which the encoded block was obtained.²

² Claim 11 recites that “the hybrid intra-inter coded block is the average of the first intra prediction and the first inter prediction,” and claim 15 recites a combining unit “adapted to combine the first intra prediction and the first inter prediction and to output a hybrid intra-inter coded block.” Ex. 1 (’846 Patent) at claims 11, 15. The specification describes the combining unit’s output as “a resulting combined (hybrid intra-inter) prediction.” *Id.* at 11:54-59, 12:40-46. Respondents note the resulting tension between the language of claims 11 and 15 and the patent’s usage of “[en]coded block,” and reserve all positions under 35 U.S.C. § 112. Consistent with Ground Rule 6.1, Respondents do not ask the ALJ to resolve the § 112 issue noted in this footnote at the Markman stage, and Respondents’ separately served positions under § 112 are reserved.

4. The Prosecution History Supports Respondents' Construction, Including for Claim 13

Responding to the May 11, 2010 Office Action, the applicant wrote that “independent Claim 13 is similar to previously argued independent Claims 1, 9, 14, 15, and 19 in that all such claims involve encoding by combining an intra prediction and an inter prediction.” Ex. 7 (July 1, 2010 Response) at 9. The Examiner’s stated reason for allowance identified “combining a first prediction ... with a second prediction ...; wherein the first prediction ... is intra prediction and the second prediction ... is inter prediction **as recited in all the independent claims.**” Ex. 6 (Apr. 20, 2011 Notice of Allowability) at 2 (emphasis added). This prosecution history shows how the inventor understood and defined the term during examination. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005).

5. Complainants' “Plain and Ordinary Meaning” Proposal Fails to Resolve the Parties' Fundamental Dispute

Complainants’ proposed construction supplies no meaning, and leaves unresolved what the parties dispute: whether an “intra-inter [en]coded block” requires that the prediction by which the block was obtained combine an inter prediction and an intra prediction. That dispute about claim scope is to be resolved as a matter of claim construction rather than left to the fact-finder. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-62 (Fed. Cir. 2008).

For the foregoing reasons, Respondents respectfully request that “intra-inter [en]coded block” be construed to mean the plain and ordinary meaning which is “a compressed representation of a current block obtained using a prediction that is a combination of an inter prediction and an intra prediction.” That is the usage the ’846 Patent’s claims, title, abstract, summary, and detailed description uniformly reflect, and the usage the applicant employed before the Examiner, including for claim 13. The “intra prediction” component of this construction carries the construction set forth in Term 1. *See* Ex. 3 (Oct. 27, 2010 Response) at 8-9.

IV. U.S. PATENT NO. 9,294,784

U.S. Patent No. 9,294,784 (“’784 patent”) is titled “Method and Apparatus for Region-Based Filter Parameter Selection for De-Artifact Filtering.” Ex. 8 (’784 Patent) at Cover. The ’784 patent is directed to region-based selection and adaptation of filter parameters for de-artifact filtering in video coding. The Abstract describes methods and apparatus for “region-based filter parameter selection for de-artifact filtering,” including performing de-artifact filtering on regions that may include block boundaries, non-block-boundary portions of a picture, or both. *Id.* at Abstract. The specification explains that video content varies spatially and temporally, such that the level of noise or artifacts may differ even under the same quantization parameter or coding mode, creating a need for different filtering parameters. *Id.* at 2:55-65. The specification accordingly describes adapting filter parameters based not only on quantization parameters and coding information, but also on the content of particular regions. *Id.* at 8:25-40. In one embodiment, the filter parameter is adapted based on statistics of the current region, such as local variance, before de-artifact filtering. *Id.* at 9:1-15.

The asserted claims of the ’784 patent include independent apparatus claim 9, dependent apparatus claim 13, and independent method claim 15.

A. “select / selecting / selected for the region” (Claims 9, 13, 15)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“select / selecting / selected for the region”	Plain and ordinary meaning	Plain and ordinary meaning, i.e., using a filter parameter that has been selected for the region before de-artifact filtering of that region begins.

1. The Intrinsic Record Confirms That the Region-Based Filter Parameter Must Be Selected Before De-Artifact Filtering Begins.

The parties do not dispute the ordinary meaning of “select,” “selecting,” or “selected.” The dispute is **when** the region-based filter parameter must be selected. Respondents contend that the parameter must be selected for the region **before de-artifact filtering begins**. InterDigital’s “plain and ordinary meaning” proposal does not resolve that dispute.

The intrinsic record confirms that the parameter is selected or adapted for the region before de-artifact filtering. The claims, specification, and prosecution history all support that temporal relationship.

2. The Claims Require the Region-Based Filter Parameter To Be Selected Before Filtering.

The claim language establishes a sequence in which the region-based filter parameter is selected for the particular picture region and then used to perform de-artifact filtering on that region. The claims require an encoder or decoder to perform de-artifact filtering “using at least a region-based filter parameter selected for the region.” Thus, the claimed filter parameter is the parameter selected for the region and used in the subsequent filtering operation.

The claims further distinguish the selection of the filter parameter from the filtering operation itself. The independent claims require that the encoder “adapts the region-based filter parameter before de-artifact filtering” based on statistics of the content of the region, including local variance or variance of noise. The claim therefore expressly places the adaptation of the region-based filter parameter before the de-artifact filtering operation. The parameter that is selected or adapted for the region is then used to perform that filtering.

InterDigital’s “plain and ordinary meaning” proposal does not resolve this temporal relationship. It leaves open whether the parameter may be selected or determined during execution of the filtering process. That reading would give insufficient effect to the express requirement that

the parameter be adapted “before de-artifact filtering.” *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006).

3. The Specification Consistently Describes Parameter Selection as an Antecedent Step to Filtering.

The specification reinforces the sequence reflected in the claims. The specification defines “region-based parameter selection” as “selection, adjustment, and/or adaptation of a parameter based on picture region.” Ex. 8 (’784 Patent) at 6:3-6. The parameter is therefore the object of the selection or adaptation, rather than merely an intermediate value generated during filtering.

The specification’s description of Figure 4 is particularly significant. Figure 4 is expressly described as an exemplary method for “region-based filter parameter selection for de-artifact filtering in a video decoder.” Ex. 8 (’784 Patent) at 3:52-55. The disclosed sequence first generates a filter parameter set, parses the block size and filter parameters, and then reaches function block 425, where the decoder “sets the filter parameters.” Only thereafter does control pass to function block 430, where the decoder “performs de-artifact filtering.”

Thus, the specification’s disclosed operation is not a single undifferentiated filtering process in which the filter parameter is generated as filtering proceeds. Rather, Figure 4 expressly depicts setting the filter parameters first and performing de-artifact filtering afterward.

The specification also explains that filter parameters may be adapted based on characteristics of the video regions so that the parameters correspond more closely to the content. *Id.* at 8:22-52. This is consistent with the claims’ requirement that the region-based parameter be adapted based on regional statistics before de-artifact filtering.

4. The Construction Must Resolve When De-Artifact Filtering Begins.

The construction should make clear that the relevant temporal boundary is the beginning of the claimed de-artifact filtering process, not merely the beginning of a particular sub-operation

within that process. Otherwise, “before de-artifact filtering” could be read to permit the claimed region-based filter parameter to be selected or adapted during processing that is already part of the de-artifact filtering operation, so long as a later step is characterized as the actual “filter” operation.

The intrinsic record does not support that interpretation. The ’784 Patent distinguishes parameter selection or adaptation from the subsequent de-artifact filtering operation. Figure 4, for example, depicts the decoder “set[ting] the filter parameters” at function block 425 and only thereafter “perform[ing] de-artifact filtering” at function block 430. *Id.* at 3:52-55. The claimed sequence therefore requires the applicable region-based filter parameter to be selected or adapted for the region before the de-artifact filtering process for that region begins.

This construction also gives effect to the prosecution history. Applicants expressly amended the claims to require that the region-based filter parameter be adapted “before de-artifact filtering.” Ex. 9 (October 29, 2015 Amendments) at 2-5, 7. Applicants then relied on that temporal limitation to distinguish Divorra and Fang. Ex. 30 (October 29, 2015 Remarks) at 10–11. The Examiner ultimately relied on the same temporal distinction in allowing the claims. Ex. 10 (November 24, 2015 Notice of Allowance) at 2. The limitation therefore should not be construed so narrowly that the temporal distinction Applicants added during prosecution becomes dependent on how a particular implementation happens to divide the filtering process into individual operations.

Accordingly, “before de-artifact filtering” means before the de-artifact filtering process for the region begins. The claimed parameter must already have been selected or adapted for the region at that point; it cannot first be selected or adapted as part of that filtering process.

5. The Prosecution History Confirms That Applicants Narrowed the Claims to Require Parameter Selection Before De-Artifact Filtering.

The prosecution history provides strong evidence concerning the temporal relationship between selection/adaptation of the region-based filter parameter and the subsequent de-artifact filtering operation. The record shows a progression in which Applicants first distinguished the prior art based on what was being adapted, and then, after the Examiner found that formulation insufficiently specific, expressly amended the claims to require that the region-based filter parameter be adapted “before de-artifact filtering.” The Examiner ultimately relied on that limitation in allowing the claims.

Applicants initially amended the independent claims to require that the region-based filter parameter be adapted based on particular statistics of the region. In their March 24, 2015 response, Applicants explained that the independent claims had been amended to require that “the region-based filter parameter is adapted based on statistics of the content of the region,” with the statistics being “one selected from the group of local variance and variance of noise.” Ex. 11 (March 24, 2015 Remarks) at 10-11. Applicants then argued that Divorra did not disclose that limitation. *Id.*

Importantly, the Examiner had already identified a temporal distinction in the specification. In the Office Action discussed in Applicants’ March 24, 2015 response, the Examiner observed that although the claims then stated that adaptation was “based on statistics of the content of the region,” that language “can still be interpreted in a number of ways,” unlike the specification’s disclosure of “local variance before the de-artifact filtering.” Ex. 12 (November 24, 2014 Office Action) at 2-3. Thus, the prosecution record expressly identifies adaptation before filtering as a more specific concept than merely adapting a parameter based on regional statistics.

Applicants subsequently amended the claims to adopt that distinction. In the October 29, 2015 response, Applicants amended independent claim 1 to require that “the encoder adapts the region-based filter parameter before de-artifact filtering based on local variance of the region.” Ex.

9 (October 29, 2015 Amendments) at 2. Applicants made corresponding amendments to independent claims 6, 11, and 17. *Id.* at 3, 5, 7. The amendments therefore did not merely identify local variance as information considered by the system; it expressly specified when the region-based filter parameter is selected and adapted—before the de-artifact filtering operation.

Applicants then relied expressly on that temporal limitation to distinguish the prior art. In their October 29, 2015 Remarks, Applicants argued that neither Divorra nor Fang disclosed “wherein the encoder adapts the region-based filter parameter before de-artifact filtering based on local variance of the region,” as recited in amended independent claims 1, 6, 11, and 17. Ex. 30 (October 29, 2015 Remarks) at 10. Applicants specifically addressed Fang’s disclosure of a weighting parameter that could be input by a user or computed from local directional means and variances. Applicants nevertheless explained that, unlike the claimed invention, Fang failed to disclose that “the encoder adapts the region-based filter parameter before de-artifact filtering based on local variance of the region.” *Id.* at 10-11.

The prosecution history is therefore unusually direct. The Examiner first identified ambiguity in a claim formulation that merely required adaptation “based on statistics of the content of the region,” specifically contrasting that formulation with the specification’s disclosure of “local variance before the de-artifact filtering.” Ex. 12 (November 24, 2014 Office Action) at 2-3. Applicants then amended the claims to expressly require adaptation of the region-based filter parameter before de-artifact filtering, distinguished the prior art on that basis, and obtained allowance after the Examiner expressly identified that temporal relationship as a reason for allowance. Ex. 10 (November 24, 2015 Notice of Allowance) at 2. Thus, the distinction Applicants ultimately relied upon—and the Examiner expressly accepted—was that selection or adaptation of the region-based filter parameter occurs before de-artifact filtering.

6. InterDigital’s Construction Leaves the Parties’ Dispute Unresolved.

InterDigital’s “plain and ordinary meaning” proposal does not resolve when the region-based filter parameter must be selected or adapted relative to de-artifact filtering. The intrinsic record establishes that the parameter must already be selected or adapted for the region when the de-artifact filtering process begins. Applicants expressly added the “before de-artifact filtering” limitation during prosecution and relied on it to distinguish the prior art.

Respondents’ construction makes that temporal relationship explicit while giving effect to the claim language, specification, and prosecution history. InterDigital’s proposal does not explain how its construction resolves that dispute. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361-62 (Fed. Cir. 2008).

V. U.S. PATENT NO. 10,250,877

A. “being applied jointly” (Claims 1, 4, 7, 8)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“being applied jointly”	Plain and ordinary meaning	Plain and ordinary meaning, i.e., the filter operations of the respective filters are grouped together in a single filter operation.

1. The Intrinsic Record Confirms That “Being Applied Jointly” Refers to Grouping the Respective Filter Operations Into a Single Filter Operation.

The parties’ dispute concerns what the ’877 Patent means when it states that the motion-compensation interpolation filter (MCIF) and the resampling filter (SCF) are “being applied jointly.” Respondents’ construction states the term’s ordinary meaning in the technological context supplied by the intrinsic record: for the relevant horizontal or vertical direction, the filter operations of MCIF and SCF are grouped together in a single filter operation. That construction follows the claim language, the equations defining the claimed filters, the specification’s repeated description

of the invention, and the prosecution history. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc).

The specification is explicit. It explains that resampling and motion compensation “are performed conjointly by applying an interpolation filter” whose characteristics depend on the sizes of the reference and current images. Ex. 13 (’877 Patent) at 2:29-40. The detailed description then explains how: the horizontal filters MCIF_H and SCF_H “are grouped into a single filter GF_H,” while the vertical filters MCIF_V and SCF_V “are grouped into a single filter GF_V.” *Id.* at 5:50-60. The patent defines those grouped filters mathematically as compositions of the respective MCIF and SCF filters, identifies the circle symbol as “the filter composition operator,” and again explains that the interpolation and resampling filters are “advantageously group[ed].” *Id.* at 5:60-6:8. “Being applied jointly” therefore describes the relationship of the two constituent filter operations within the single claimed directional GF filter, not merely the presence of two unrelated filters somewhere in the same processing chain.

The construction is functional, not hardware-specific. “Single filter operation” does not require simultaneous execution a single signal pass, or one physical hardware or software module. The specification describes the MCIF and SCF functions as grouped into GF_H or GF_V and elsewhere permits functional modules to be implemented together or separately. Ex. 13 (’877 Patent) at 9:64-10:4. The relevant distinction is functional: whether MCIF and SCF remain separate, independent filtering stages or are grouped as constituent functions of the single claimed GF filtering operation.

2. The Claim Language Requires a Single Directional Filter Defined by the Joint Relationship of the Two Constituent Filters.

Independent claim 1 first requires motion compensation by “applying a single horizontal filter GFH and a single vertical filter GFV successively” on the lines and columns of the reference block. Ex. 13 (’877 Patent) at 11:44-54. The claim then defines what each single filter is: “ $GFV(s)=MCIFV(SCFV(s))$, where MCIFV is the vertical motion compensation interpolation filter and SCFV is the vertical resampling filter, MCIFV and SCFV “being applied jointly.” Id. at 11:57-64 (emphasis added). The claim repeats the same structure for GFH: $GFH(u)=MCIFH(SCFH(u))$, with MCIFH and SCFH “being applied jointly.” Id. at 11:64-12:4.

That grammar matters. The claim uses “successively” for the relationship between horizontal GFH and vertical GFV, but “jointly” for the MCIF and SCF constituents within each directional GF. Reading “being applied jointly” to encompass separate, independently performed SCF and MCIF stages would erase that distinction and fail to give effect to “single,” the GF equations, and “jointly.” See *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). The same structure appears in the coding and device claims.

3. The Specification Contrasts the Claimed Grouped Operation With Separate Resampling and Motion-Compensation Stages.

The patent first identifies MCIF and SCF as distinct filtering functions. Motion-compensation interpolation filters are separable into horizontal and vertical MCIF filters, and resampling filters likewise have directional components. Ex. 13 (’877 Patent) at 4:28-50, 4:63-5:15. In the prior-art process, those functions remain separate stages: SCF filtering generates a resampled reference image stored in the decoded-picture buffer, and motion compensation later operates on that image using MCIF filtering. Id. at 5:20-45. The distinction is not merely arithmetic ordering; it is whether the filtering functions remain independent stages.

The invention changes that arrangement. Only reconstructed reference images are stored; no separately upsampled or subsampled version is stored. Id. at 5:45-53. Motion compensation

instead uses GFH and GFV, with MCIFH and SCFH grouped into GFH and MCIFV and SCFV grouped into GFV. *Id.* at 5:53-65. The separately recited no-storage limitation is not imported into “being applied jointly,” but it confirms the architecture: by grouping the interpolation and resampling filters, the intermediate resampled reference image used in the staged prior-art process need not be stored. *Id.* at 6:1-8.

4. The Detailed Algorithms Confirm That the Grouped GF Filters Perform the Claimed Motion Compensation.

The reconstruction algorithm invokes GFH and GFV as the filtering operations used to produce the prediction block. After defining GFH and GFV as compositions of SCF and MCIF, the specification states that “[t]he filters GFH and GFV are then successively applied as shown in FIG. 8 to determine the prediction block Bp.” Ex. 13 (’877 Patent) at 6:33-38. The ensuing equations apply GFH and then GFV to generate prediction pixels. *Id.* at 6:50-65. The coding embodiment likewise groups MCIFH/SCFH into GFH and MCIFV/SCFV into GFV, and states that resampling and motion compensation “are performed jointly.” *Id.* at 7:44-8:10.

5. The Prosecution History Confirms That “Being Applied Jointly” Was Added to Require the Grouped Single-Filter Relationship, and the Examiner Relied on That Limitation in Allowing the Claims.

The prosecution history is especially probative because the claims evolved in stages toward the issued language. The preliminary amendment recited joint performance of resampling and motion compensation using directional filters composed from the corresponding interpolation and resampling filters. After the first substantive Office Action, Applicants added the requirement of a “single” vertical filter and a “single” horizontal filter. In the November 24, 2017 response, Applicants further added the $GFV(s)=MCIFV(SCFV(s))$ and $GFH(u)=MCIFH(SCFH(u))$ relationships and the decoded-picture-buffer limitations. Those amendments still did not contain the final recitations that the respective MCIF and SCF filters were “being applied jointly.”

Following another obviousness rejection, Applicants amended the independent claims again on July 6, 2018. This time they added the very words now disputed: “MCIFV and SCFV being applied jointly” and “MCIFH and SCFH being applied jointly.” Ex. 14 (July 6, 2018 Amendment). That sequence matters. “Being applied jointly” was not simply another way of saying that GFH and GFV are “single” filters or of restating the composition equations; those features were already present. The later-added language further specifies the relationship between the MCIF and SCF constituents of each single GF operation.

The Examiner’s Statement of Reasons for Allowance confirms the same understanding. After the “being applied jointly” amendment, the Examiner allowed the claims and expressly identified as absent from the prior art the “uniform application jointly” of interpolation filtering and resampling to the respective single filters in the vertical and horizontal directions. Ex. 15 (Nov. 7, 2018 Notice of Allowance). The patentable distinction was therefore not merely that both operations occurred, or that one filter could feed another, but that both operations were jointly applied in the respective single directional filters. Separate, independent filtering stages do not satisfy that relationship merely because they form a cascade or participate in the same prediction process.

The claims themselves require GFH and GFV to be applied “successively.” The relevant distinction is between MCIF and SCF functions grouped within the single claimed GF filtering operation and functions that remain separate, independent stages. Respondents’ construction preserves the claimed functional relationship without importing timing, signal-flow, coefficient-sharing, or hardware limitations.

6. Respondents’ Construction Resolves the Parties’ Scope Dispute Without Importing an Extraneous Limitation.

Respondents' construction is an explanatory articulation of plain and ordinary meaning in the intrinsic context. The patent repeatedly uses "grouped," "single filter," "filter composition operator," and "performed jointly," and prosecution culminated in allowance only after Applicants added "being applied jointly" and the Examiner identified joint application to the respective single filters as the missing feature. "Single filter operation" therefore describes the unified GF filtering function.

By contrast, a bare "plain and ordinary meaning" construction leaves unresolved the central scope question: (i) may the resampling and motion-compensation interpolation filters remain separate, independently performed filter operations, or (ii) must their operations be grouped within the single GF recited by the claims? The intrinsic record clearly answers that (ii) is correct. Where the parties dispute claim scope, the Court must resolve the dispute rather than leave it to the jury under an unexplained "plain meaning" label. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361-62 (Fed. Cir. 2008).

Respondents' construction remains appropriately limited. It does not require particular coefficients, hardware, simultaneous execution, one processor instruction, one signal pass, or one combined horizontal-and-vertical filter. Nor does a cascade qualify merely because one filter's output is supplied to another. It requires only the relationship the intrinsic record repeatedly describes: within each direction, the resampling and motion-compensation interpolation functions are grouped as the single claimed GF filtering operation rather than remaining separate, independent filtering stages.

VI. U.S. PATENT NO. 11,695,962

U.S. Patent No. 11,695,962 ("962 patent") is titled "Encoding and Decoding Methods and Corresponding Devices." Ex. 16 ('962 Patent). The '962 patent concerns entropy coding of

transform coefficients. Its Technical Field states that the embodiments relate “to entropy coding and decoding of transform coefficients.” *Id.* at 1:16-19. The aspect claimed is how the decoder selects the *context* used to decode a syntax element for a given transform coefficient. That context is determined in part from the coefficients in a “local template,” a subset of the coefficients neighboring the current coefficient. Because a block’s transform “may generally consist in a separable combination of two 1D transforms, respectively in the vertical and the horizontal directions,” the specification explains that “an efficient selection of the neighboring coefficients in the local template may depend on the block shape (more specifically in this case, the dimensions of the block).” *Id.* at 12:38-41. FIGS. 13A, 13B, and 14 illustrate and implement that dependence. *Id.* at 12:52-59, 12:63-65, 13:20-27.

Asserted independent claims 1 and 13 are the method and device counterparts of the same subject matter, and the parties agree that both preambles are limiting. Each recites that, “regardless of the position of the current transform coefficient in the current sub-block, a position of at least one of the transform coefficients of the local template with respect to the current transform coefficient depends on the shape of the current sub-block resulting from the partitioning of the current block of samples according to the selected split mode.” *Id.* at claims 1, 13.

The parties have identified a single term from the ’962 patent for briefing at this stage.

A. “depends on the shape of the current sub-block” (Claims 1 and 13)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“depends on the shape of the current sub-block”	Plain and ordinary meaning	Plain and ordinary meaning which is determined by the geometric shape of the current sub-block. [Mere correlation with shape is not dependence on shape. A value determined by another variable that only correlates with shape does not ‘depend on the shape.’]

Respondents' proposed construction is the plain and ordinary meaning which is "determined by the geometric shape of the current sub-block," with the accompanying statement "[Mere correlation with shape is not dependence on shape. A value determined by another variable that only correlates with shape does not 'depend on the shape.']"³ Complainants propose "plain and ordinary meaning" without stating what that meaning is. The parties' dispute is whether the recited position must be determined by the current sub-block's shape, or whether the limitation is met where the position is set by a different variable that correlates with that shape. The claim language, the specification, and the Examiner's stated reasons for allowance each treat the shape of the sub-block produced by the recited split as the variable from which the recited positions are taken, and support Respondents' construction.

1. The Language of the Claims Distinguishes Shape Dependence from Dependence on a Separately Selected Variable

Claims 1 and 13 include the limitation on positions within the local template:

wherein, regardless of the position of the current transform coefficient in the current sub-block, a position of at least one of the transform coefficients of the local template with respect to the current transform coefficient depends on the shape of the current sub-block resulting from the partitioning of the current block of samples according to the selected split mode

Ex. 16 ('962 Patent) at 18:9-16 (claim 1); *id.* at 19:31-38 (claim 13). The reference is not to shape at large but to the shape of the sub-block the recited split produces, and the recited split mode is one "for splitting a block into at least one of rectangular sub-blocks or square sub-blocks." *Id.* at 18:1-2. The words "rectangular" and "square" name geometric forms. The claim thus distinguishes

³ Table 2 of the Joint Claim Construction Chart lists the term "depends *of* the shape of the current sub-block." Claims 1 and 13 recite "depends *on* the shape of the current sub-block," and Respondents brief the term as it appears in the claims.

the selected split mode, which produces the sub-block, from the resulting shape of that sub-block, which the claim identifies as the basis for the template-position dependence.

The dependent claims confirm that shape dependence is distinct from dependence on a separate variable, such as scan order. Claim 3 states the shape dependence in dimensional terms: “said local template comprises more transform coefficients along a direction of a longest dimension of the current sub-block.” *Id.* at 18:21-23; *see id.* at 19:43-45 (claim 15). Claim 4 states it as a correspondence of forms: the template coefficients and the current coefficient “form a horizontal rectangle in the case where the current sub-block is a horizontal rectangle and form a vertical rectangle in the case where the current sub-block is vertical rectangle.” *Id.* at 18:24-29 (reproduced as issued). Claim 5 expressly and cumulatively adds dependence on a separate variable, scan order: the position “further depends on a scan order of said current sub-block.” *Id.* at 18:30-33. Claim 6 pairs claim 4’s arrangement with that second variable, the coefficients forming a horizontal rectangle “in the case where said scan order is horizontal.” *Id.* at 18:34-38.

The patentee thus treated scan-order dependence as an additional, distinct basis of dependence, including by expressly introducing it with the word “further.” This claim structure confirms that a separate variable, such as scan order, is not interchangeable with the shape dependence recited in claims 1 and 13. Under Respondents’ construction, claims 3, 4, 15, and 16 properly retain their requirements including being determined by the geometric shape of the current sub-block, while claims 5, 6, 17, and 18 retain their additional scan-order requirements. Claims 4, 5, and 6 provide clear intrinsic evidence supporting Respondents’ construction based on the patentee’s chosen claim structure, and Respondents’ construction does not improperly import their requirements into claims 1 and 13.

2. The Specification Further Supports Respondents' Construction, Making Clear that Geometric Shape is the Basis for Determining Template Positions

The Abstract states the relationship directly: “Advantageously, the local template depends on the shape of said block.” Ex. 16 ('962 Patent), Abstract. The Summary states it as a feature of each disclosed method and device, closing each of its six method and device statements with the clause “wherein the local template depends on the shape of said block,” before the specification turns to specific embodiments. *Id.* at 1:48-49, 1:59-60, 2:17-18, 2:30-31, 2:41-42, 2:54-55; *see id.* at 2:56-59.

The Detailed Description explicitly identifies geometric shape as the basis for determining template positions. It introduces the relationship in dimensional terms, stating that the selection of the neighboring coefficients “may depend on the block shape (more specifically in this case, the dimensions of the block),” *id.* at 12:38-41, and confirming that “the shape of a TB, the width and height of a rectangular TB, are taken into consideration in determining the local template for the assignment of context models ...” *Id.* at 12:42-45. The description of the FIG. 14 algorithm carries that out as a test on the block's form:

“Next, the positions of the remaining neighbors of current coefficient (x,y) in the new local template is determined by the TB shape (S2134-4). In step S2134-4, it is checked whether the TB is a rectangle or not. If the TB is a rectangle, based on whether this TB is a horizontal rectangle or a vertical rectangle (S2134-5), the positions of the remaining neighbors in the local template are adjusted related to the block shape”

Id. at 13:20-27.

Adaptation to a different variable is treated separately from this geometric calculation. The specification describes a second adaptation where “the scan pattern of the current TB is taken into consideration in determining the local template ...,” *id.* at 13:57-59, providing it with its own figures and a distinct flowchart, *id.* at 14:20-23. That every block has both a shape and a scan

pattern does not merge these two separate adaptations, and co-variation across some set of blocks does not merge the variables. Mere correlation between the two does not make one variable a substitute for the other. Rather, the specification makes clear that template position must be determined based on the geometric shape.

3. The Prosecution History Confirms That the Limitation Requires Dependence Based on the Particular Shape of the Sub-Block

The prosecution history demonstrates that both the Examiner and the applicant understood the claim language to require an explicit dependence on geometric form. During examination, the Examiner directly asked the applicant to identify the dependence relied on, asking “[w]hat specific geometric dependence does Applicant use to obtain improvements?” Ex. 17 (Aug. 16, 2022 Office Action) at 3. The applicant responded through both amendments and accompanying arguments, explicitly defining the scope of the limitation to secure allowance:

“Applicant has not sought to claim the existence of local templates, but rather local templates that depend on the shape of a sub-block resulting from a split a of [sic] block according to a split mode.”

Ex. 18 (Nov. 16, 2022 Response) at 7. On the same page, addressing the Examiner’s statement that Zhang indicates local size and shape can depend on many factors, including partition modes, the applicant asserted that the “mode” criterion Zhang lists is a coding mode rather than a split or partition mode. *Id.* (“One skilled in the art understands that ‘mode’ as used here does not refer to a partition mode. In video compression, when the single word ‘mode’ is used, it refers to ‘coding mode’ such as INTRA, INTER, etc., but not split mode.”).

Following these amendments and arguments, the Examiner allowed the claims. The Statement of Reasons for Allowance explicitly tied the patentability of the claims to this specific sub-block shape optimization:

“a. Applicant has amended the claims to recite ‘partitioning of a current block of samples according to a split mode selected from a plurality of split modes for splitting a block into at least one of rectangular sub-blocks or square sub-blocks’ which sets up the problem of the claimed invention in providing a local template for sub-blocks that can have a different shape. b. Applicant further amends the claims to recite: ‘... depends on the shape of the current subblock resulting from the partitioning of the current block of samples according to the selected split mode;’ which indicates that the positions of the individual transform coefficients can be optimized for the particular shape of the sub-block. c. Examiner did not find prior art that performs this type of optimization in the context of implementing a local template under the HEVC video coding standar [sic].”

Ex. 19 (Feb. 22, 2023 Notice of Allowability) at 2.

The prosecution record thus establishes that the added limitation explicitly requires that the template positions be optimized for and determined by the specific geometric shape of the sub-block produced by the recited split.

4. Respondents’ Construction Properly Aligns with the Patent’s Explicit Requirement of Shape Dependence Rather Than Mere Correlation

Respondents’ construction, “determined by the geometric shape of the current sub-block,” incorporates the specification’s own chosen verb for this relationship. Ex. 16 (’962 Patent) at 13:20-22. The term “geometric shape” properly identifies what does the determining: the sub-block’s form, as distinct from its area, which claims 1 and 13 recite as a separate, independent input to the context determination. *Id.* at 18:2-6. Area is a scalar value that does not distinguish a sub-block from its transposed orientation. In contrast, the specification’s own examples pair the transposes as distinct cases. *Id.* at 12:66-67 (“According to a variant, the new local templates are used only for some block sizes, e.g. 4×16, 16×4, 8×32 and 32×8.”). Furthermore, as established by the prosecution history, “geometric” is the exact term employed by the Examiner to characterize the nature of this structural limitation during examination. Ex. 17 (Aug. 16, 2022 Office Action) at 3. The word “geometric” thus clearly and accurately summarizes the vocabulary used throughout the claims and specification to define these shapes, including rectangular, square,

horizontal rectangle, vertical rectangle, longest dimension, width, height, shortest dimension. *Id.* at 18:1-2, 18:21-29, 12:42-45, 13:30-32.

For the foregoing reasons, Respondents respectfully request that the term “depends on the shape of the current sub-block,” as recited in claims 1 and 13 of the ’962 Patent be construed in accordance with its plain and ordinary meaning which is “determined by the geometric shape of the current sub-block.”

VII. U.S. PATENT NO. 11,399,168

A. “the color transform parameters represent at least three successively applied color transforms” (Claims 11, 18)

Claim Term	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“the color transform parameters represent at least three successively applied color transforms”	Plain and ordinary meaning	Plain and ordinary meaning which is the color transform parameters are encoded descriptions of at least three successively applied color transforms

The parties agree that “the color transform parameters represent at least three successively applied color transforms” should be given its plain and ordinary meaning, but dispute what that meaning is. Respondents’ and Intervenor’s position is that the term means the color transform parameters are encoded descriptions of at least three successively applied color transforms. Respondents and Intervenor anticipate that Complainant may argue that “represent” is satisfied whenever the color transform parameters bear some relationship to three color transforms, rather than describing the transforms themselves. As explained below, Respondents’ and Intervenor’s construction is confirmed by the intrinsic record. Construction is necessary because the parties’ dispute concerns the scope of the claim and a “plain and ordinary meaning” construction would

leave that dispute unresolved. *See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-62 (Fed. Cir. 2008).

1. The Specification Confirms the Color Transform Parameters Are Encoded Descriptions of the Transforms Themselves

The background of the patent specification explains the problem in the art that the patent purports to solve. In particular, content is color-graded for a reference display (the display used in the color-grading process), but consumer rendering devices vary widely in what they can display. The '168 Patent specification explains that rendering devices “may not have the capability to adapt to any colour space nor have the required knowledge to perform the optimal colour conversion,” and the correct transform is not deducible because grading is a non-deterministic artistic process. Ex. 20 ('168 Patent) at 1:45-59. “There is thus a need to encode a colour ***transform*** . . . in bit-streams.” *Id.* at 2:1-3. Prior art solutions included transmitting “the colour transform or more generally colour metadata,” but the '168 Patent notes that receivers did “not know how to interpret them.” *Id.* at 2:6-11. The alleged invention therefore encodes two sets of parameters in the stream:

In a step 100, first parameters that describe the colour mapped output decoded pictures video signal characteristics are encoded in a stream, e.g. in a SEI message [a supplemental enhancement information message transmitting along with a video stream]. . . . In a step 102, second parameters ***that describe the colour transform are encoded*** in the stream, e.g. in a SEI message.

Id. at 3:41-47 (emphasis added); *see id.* at 4:57-61. The “first parameters” correspond to the claimed “target parameters,” which describe the characteristics of the color-mapped output signal⁴, while the “second parameters” correspond to the claimed “color transform parameters.” *Id.* at 2:17-20, 3:41-47, 5:51-67.

⁴ The '168 Patent explains that the first parameters “describe the colour mapped output decoded pictures video signal characteristics [and] are encoded in [the] stream” Ex. __ ('168 Patent) at 3:41-44. The renderer uses the first parameters to “perform the appropriate signal conversion corresponding to its supported output video formats.” *Id.* at 6:2-5.

The encoded second parameters (i.e., the color transform parameters) describe the color transform to be performed. The specification explains that the supplemental enhancement information (SEI) message carries a syntax element `colour_map_model_id` that “indicates the type of colour transform (3D LUT, three 1D LUTs with a matrix, matrix . . . etc.),” *id.* at 4:63-67, with the available models enumerated in Table 1B. *Id.* at 5:1-9. But `color_map_model_id` is only the first element of `colour_transform( )`, not the entirety of the transform description. The patent explains that `colour_map_model_id` is “the first element in `colour_transform( )`,” *id.* at 5:11-16; 9:36-39, confirming that the transform description contains additional information beyond the transform type itself. Moreover, where a single message encodes multiple transforms—`colour_transform1( )`, `colour_transform2( )`, and `colour_transform3( )` in Table 2A, which “are to be applied successively”—the patent separately encodes and specifies each transform in the sequence and the information associated with each transform. *Id.* at 7:61-67, 8:6-26, 9:28-32.

Because image renderers differ, “the syntax element `colour_map_model_id` [is] used to check whether a renderer is capable of using the color metadata, i.e. if the renderer is capable of applying the color transform transmitted in the SEI message.” *Id.* at 5:44-54. Figure 9 illustrates this: one SEI message encodes a transform T1 mapping a Rec. 709 output signal (an HDTV signal) to Rec. 2020 (UHDTV), a second SEI message encodes a second transform T2 mapping to Rec. 601 (SDTV), and the three displays (Disp1, Disp2, and Disp3) respectively discard both messages, apply T1, or apply T2. *Id.* at 6:9-45. The patent therefore consistently treats the claim color transform parameters as information describing the particular transmitted color transforms, rather than merely metadata associated with color transforms in the abstract. Accordingly, Respondents’ and Intervenor’s proposed construction requiring the claimed color transform parameters to be

encoded descriptions of the color transforms is grounded in the specification's repeated characterization of those parameters as information that describes the color transforms themselves.

2. The Specification Uses “Representative of” and “Describe” Interchangeably

Respondents' and Intervenor's proposed construction is fully supported by the intrinsic evidence. The patentee used both “representative of” and “describe” to refer to the same thing. The Summary of the Invention discloses “**encoding** second parameters **representative of** the at least one colour transform,” *id.* at 2:20-22 (emphasis added), while the Detailed Description recites that same step as encoding “second parameters that **describe** the colour transform,” *id.* at 3:45-47 (emphasis added).⁵ The specification goes on: “The **second parameters (colour_transform)** **describe the colour transform** and can be a 3x3 gain matrix plus three offsets or a 3D LUT or any other parameters describing a colour transform.” *Id.* at 5:63-67; *see also id.* at 4:58-61, 5:51-54, 5:64-67, 12:56-59 (all stating that the color transform parameters describe the color transforms). The patent thus repeatedly and expressly describes the claimed color transform parameters as descriptions of the color transforms themselves.

Moreover, the claims make clear that the color transform parameters must be “encoded descriptions” because claim 18 expressly requires the apparatus to “decode color transform parameters.” *Id.* at Cl. 18. That decoding requirement necessarily presupposed that the color transform parameters were encoded in the first place. Claims must be construed to give effect to all of their terms. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). Accordingly,

⁵ The parallel holds for the first parameters as well—“**representative of** video signal characteristics,” *id.* at 2:17-20, and “parameters that **describe** the . . . video signal characteristics,” *id.* at 3:41-44—confirming deliberate, consistent usage rather than coincidence. *See Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004) (consistent usage informs construction).

Respondents’ and Intervenor’s construction—that the color transform parameters must be encoded descriptions of at least three successively applied color transforms—is grounded in the specification’s repeated characterization of those parameters as encoded information that describes the color transforms themselves and gives effect to the claim’s decoding requirement.

3. “Represent” Does Not Merely Mean “Related to”

InterDigital appears to contend that “represent” is satisfied by any relationship between the color transform parameters and three successive color transforms. Such a construction is improper because it is divorced from the language of the claim and the repeated descriptions in the specification. The ’168 Patent addresses the problem that rendering devices may lack “the required knowledge to perform the optimal colour conversion,” *id.* at 1:45-48, particularly where color grading involves non-deterministic artistic choices. *Id.* at 1:45-59. And the patent explains that merely transmitting “colour metadata” is insufficient if the receiver cannot “interpret” it. *Id.* at 2:6-11. The patent’s answer to that problem is not transmitting metadata merely associated with color transforms, but rather encoded parameters that the specification repeatedly says, “describe the colour transform.” *Id.* at 3:45-47, 5:63-67. Thus, the color transform parameters in the message identify the transform model and prescribe an order in which they should be applied, and a renderer must “check whether [it] is capable of applying the color transform transmitted in the SEI message.” *Id.* at 4:63-67, 5:1-16, 5:44-54, 6:9-45; 9:33-39. The color transform parameters of the ’168 Patent, however, are not just any arbitrary set of parameters related to color transforms.

An understanding of the term “represent” that merely means “related to” would render the term meaningless as almost any parameter in this field could be “related to” color transforms. The Federal Circuit has rejected such an overbroad interpretation of “represent.” In *Tehrani v. Hamilton Medical, Inc.*, the court construed “representing” in a limitation reciting “means for

processing data **representing** at least air viscosity . . . , barometric pressure, lung elastance . . . and measured levels of carbon dioxide and oxygen levels.” 331 F.3d 1355, 1361 (Fed. Cir. 2003) (emphasis added). Agreeing with the ordinary meaning of the term to mean “symbolizing” or “to stand for,” the court held it could not “be interpreted so broadly as to include any case in which the two items are related in some way. Rather, the first item must be directly related to and stand for, or be a reasonable proxy for, the latter item.” *Id.* Similarly, in *Fenner Investments, Ltd. v. Microsoft Corporation*, the claim recited “a width of said pulse **representing** a coordinate position of said joystick device,” and the patentee urged that “represent” meant the width “provides some information about” or “symbolizes” the position. 632 F.Supp.2d 627, 632-35 (E.D. Tex. 2009), *aff’d*, 369 F. App’x. 132 (Fed. Cir. Mar. 15, 2010). The court refused, holding that “represents” means more than “provides some information about,” “symbolizes,” or even “suggests,” and that the pulse width “must itself provide the information necessary to determine joystick position”; the looser reading “would completely marginalize the meaning of these specific terms.” *Id.* at 635. So too here: the color transform parameters must themselves provide the information necessary to determine and apply the three successively applied color transforms. Respondents’ and Intervenor’s proposed construction should therefore be adopted.

VIII. U.S. PATENT NO. 9,654,751

A. “a plurality of picture data” (Claim 14)

Claim Language	Complainants’ Proposed Construction	Respondents’ and Intervenor’s Proposed Construction
“a plurality of picture data”	Plain and ordinary meaning	Plain and ordinary meaning, which is two or more sets of data that can be rendered into an image on a display

The parties agree that “a plurality of picture data” should be given its plain and ordinary meaning, but dispute what that meaning is. Respondents’ and Intervenor’s position is that the term

means two or more sets of data that can be rendered into an image on a display. Respondents and Intervenor anticipate that Complainant may argue one or more of three broader readings: (1) that “plurality” does not necessarily require “two or more”; (2) that a single image or video already satisfies “a plurality of picture data” because it is made up of many pixels or many frames; and/or (3) that metadata accompanying a single picture stream can itself supply, or combine with that single stream to create, “a plurality of picture data.” As explained below, none of these three readings are consistent with the intrinsic record. Complainant’s “plain and ordinary meaning” construction does not resolve the parties’ dispute regarding the proper scope of this term; a construction is therefore required. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.”).

The ’751 Patent addresses color-correcting content for the wide range of consumer display types with distinct and varying features. The disclosed system uses “virtual device models” (“VM” or plural “VM’s”), each defined by a virtual model specification (“VMS”) of parameters such as display brightness, color gamut, contrast ratio, and gamma that correspond to a given display. Ex. 21 (’751 Patent), Fig. 1. A picture selector “makes the decision about ***which version of the picture data is chosen***, and is to be made on the basis of a comparison of the actual display specification (ADS) parameters with the virtual device model (VM) parameters.” *Id.* at 12:12-17.

The “plurality of” language in claims 1 and 14 was added during prosecution of the application that led to the ’751 Patent. In the Reply of November 4, 2016, filed with a Request for Continued Examination in response to a Final Office Action of July 20, 2016, Applicants amended the claims to require that the picture source device provide “a plurality of” picture data, that the display unit process and the picture selector obtain “a/the plurality of” picture data, and added the

further limitation that “the picture selector is further configured to select one of the plurality of the picture data based on the selected one of the virtual device models.” Ex. 22 (November 4, 2016 Reply) at 6, 9.

1. “Plurality” Means “More Than One”

As an initial matter, “plurality” should be construed as meaning two or more in view of the claim language, the specification, and the prosecution history.

The canon of linguistic differentiation forecloses “plurality” from meaning “at least one.” Claim 14 uses “at least one” three times—for the display requirement, for the VM parameter, and for the display feature—but switches to “a plurality of” for virtual device models and for picture data. The patentee knew how to draft a limitation satisfied by a single instance and chose not to do with respect to “picture data.” Because different words presumptively carry different meanings, “a plurality of picture data” must require more than the “at least one” the patentee used elsewhere in the same claim. *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”). Moreover, the Federal Circuit has repeatedly held that the plain and ordinary meaning of “plurality” is “two or more,” “more than one,” or “at least two.” *See, e.g., Cybersettle, Inc. v. Nat’l Arbitration Forum, Inc.*, 243 F.App’x 603, 606 (Fed. Cir. 2007); *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1122 (Fed. Cir. 2004).

The specification’s discussion of a “plurality” of VM’s confirms that a “plurality” cannot be satisfied by fewer than two. The specification ties the number of picture data sets directly to the number of VMs: “if a number, n, of VM’s are to be supported, then n sets of picture data are to be provided.” Ex. 21 (‘751 Patent) at 12:24-26. Claim 14 independently requires “a plurality of *different* virtual device models,” which itself cannot be satisfied by one. *Id.* at 18:4-5 (emphasis added). Unless there are two or more VM’s, claim 14’s “different” limitation would be

meaningless. Other portions of the specification are consistent with this reading. *See, e.g., id.* at 3:42-45 (“[T]he appropriate virtual device model is chosen so that ***the best picture data*** is selected.”), 12:12-17 (“***[W]hich version*** of the picture data ***is chosen.***”) (emphases added).

The prosecution history also forecloses construing “plurality” as “one or more.” *Spectrum Intern., Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998) (“explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of a claim”); *Stylwan IP Holding, LLC v. Stress Engr. Services, Inc.*, No. 2023-1269, 2025 WL 1501716, at *4 (Fed. Cir. May 27, 2025) (“Express statements made during prosecution to distinguish the claimed invention from prior art may also narrow the scope of the claim.”). When distinguishing the Itakura reference, Applicants themselves distinguished a “plurality” from “one,” describing an Itakura terminal as receiving “***one and only one*** display picture” and stating that Itakura terminals “clearly do[] not receive or process ***multiple*** picture data . . . or have ***a plurality*** of virtual device models.” Ex. 22 (November 4, 2016 Reply) at 11 (emphasis added). Applicants also used “multiple” and “a plurality of” interchangeably and contrasted both directly against “one and only one.” *See id.* at 9.

2. “Picture Data” Means a Complete Image or Video, Not the Pixels That Comprise a Single Image or the Frames That Make Up a Video

The claim language, specification, and prosecution history likewise confirm that “picture data” refers to a renderable image or video, not the individual pixels that make up a single image or individual frames that make up a video.

Claim 14 does not treat “picture data” as a single quantum, but instead as different versions of a complete candidate for what will ultimately be displayed. Specifically, Claim 14 recites obtaining “the plurality of picture data” and then selecting “one of the plurality of the picture data based on the selected one of the virtual device models,” which the calibration component then

adapts “to be displayed.” A component-based reading cannot be squared with this claimed arrangement: a display does not “select” a single pixel or frame “based on” a virtual device model and then “calibrate” only that pixel or frame “to be displayed.” The claim’s “select one of . . .” language only makes sense if “picture data” already refers to a complete, renderable image or video.

Construing “picture data” as the pixels that comprise a single image or the frames that comprise a single video is inconsistent with the specification’s one-to-one correspondence between the number of supported virtual device models and the number of picture data sets. The specification describes that “if a number, *n*, of *VM*’s are to be supported, then *n sets of picture data* are to be provided.” Ex. 21 (‘751 Patent) at 12:12-26 (emphasis added); *see also id.* 3:34-47 (“In one embodiment, *several versions of one movie* feature are made”), 10:65-67, 15:45-52. The picture switch operates on the same understanding, selecting “one picture data set” “out of the set of *n* picture data sets.” *Id.* at 12:26-28. Figure 3’s “plurality of versions” (one per VM) and the Summary’s description of the “best picture data” being “selected” from among candidates are all consistent with this same usage: “plurality” counts complete, competing picture-data candidates, never the pixel or frame population of a single candidate.

This same architecture recurs throughout the specification. For example, Figure 3 depicts the content-creation side generating “a plurality of versions and conditions” as virtual device models corresponding to “a plurality of available picture versions and conditions.” *Id.* at 9:37-44. Figure 2, also on the content-creation side, explains that, “[a]t the end of the method of color correction of FIG. 2, there will be *N video masters* for *N* display groups, represented by respective virtual device models determined in step 208.” *Id.* at 9:33-36 (emphasis added).

Construing “picture data” to be individual pixels or frames is further inconsistent with the

prosecution history. Applicants made these amendments specifically to distinguish the claims over the Itakura reference. Applicants explained that in Itakura, each user display terminal sends its display specification to a headend device, which in response “would send the one and only one display picture corresponding to the [specification] sent . . . from the particular display terminal.” Ex. 23 (‘751 Patent File History) at 9. Applicants concluded that “each of the user display terminals of Itakura *clearly does not receive or process multiple picture data*, or have a plurality of virtual device models, contrary to the claimed display device of present principles.” *Id.* at 11 (emphasis added). If a plurality of picture data only referred to a plurality of pixels, or plurality of frames that made up a single video, the “one display picture” in Itakura would refer to delivery of only a single pixel of an image or single frame in a video, which makes no sense.

3. “Picture Data” Is Not Metadata

A construction under which “picture data” is simple metadata cannot be squared with (1) the specification that never uses the word “metadata” and consistently separates picture data from the parameter-based information used to select among sets of picture data, (2) the claim language that separately recites VM parameters and display specifications as distinct elements from picture data, (3) the prosecution history that expressly distinguishes “image pixels” from “metadata,” and (4) InterDigital’s own prior art references that cement the distinction between picture data and metadata. The ALJ should reject any construction that would erase these distinctions.

The specification never uses the word “metadata,” and it consistently separates picture data from the parameter information used to select and calibrate among picture data sets. Throughout the specification, “picture data” refers to actual image content—the data provided by the picture source (711), switched by the picture switch (714), calibrated (706), and ultimately output to the display (715/708). By contrast, the information used to select and calibrate among that picture

data—the VMS parameters of Figure 1 (VMS01 through VMS12, covering brightness, gamut, contrast ratio, and gamma) and the ADS parameters describing the actual display—is consistently described as specification or parameter data. The specification never once uses the word “metadata” to describe this information, and the closest thing to metadata, the VMS parameters, are distinguished from “picture data.” Ex. 21 (‘751 Patent) at 3:42-45 (“A selection process is performed on the display side where *virtual device model specifications and actual device specification are matched*, and the appropriate virtual device model is chosen so that *the best picture data is selected*.” (emphasis added)), 3:59-61 (“VMS . . . controls a display feature.”); 3:63-67 (“A picture selector is configured to *compare the display feature of at least one VMS against the display requirement of the display specification* to determine a best match therebetween to select a virtual device models to control a display picture.” (emphasis added)).

Claim 14’s own structure keeps these categories of information separate. Claim 14 separately recites “a display specification including at least one display requirement,” virtual device models “including at least one parameter for specifying at least one display feature,” and “the plurality of picture data” as distinct claim elements, with the picture selector using the first two categories of information to select among the third. If “picture data” already encompassed metadata or specification parameters, this structure would be redundant and there would be no need to recite VM parameters and display specifications as separate elements at all. Method claim 7 (asserted for domestic industry) also confirms that the claimed picture data “appear[s]” on the display device and is “render[ed]” into “a display picture,” while “at least one parameter” (i.e., metadata) is used to specify features and cause the picture data to “appear differently” on each device. In short, “picture data” cannot be mere metadata and instead must include data that can be

rendered into an image on a display, consistent with Respondents' and Intervenor's proposed construction.

Nor can "a plurality of picture data" be satisfied by a single set of image content merely tagged with different metadata for creating corresponding picture data for each virtual device model. The specification's clear and unambiguous description of how the different picture data sets are created forecloses this reading. The color correction process the specification describes is not a matter of attaching descriptive tags to an untouched source image. Figure 2 makes this concrete: for each successive display class or group beyond the first, a colorist performs a "creative interaction . . . to change the look of the picture displayed on that subsequent display group/class," Ex. 21 ('751 Patent) at 8:59-62) and the specification confirms that "[a]t the end of the method of color correction of FIG. 2, there will be N video masters for N display groups, represented by respective virtual device models determined in step 208." *Id.* at 9:33-36. Figure 9 describes the same architecture: in post-production (i.e., content creation), color correction is "performed for one, two, or several" virtual device models (*id.* at 14:65-67), then, "***several versions of a movie*** or other content can be made, and each version can be color corrected in accordance with individual virtual device models." *Id.* at 15:46-52 (emphasis added). Each of these video masters is an independently created, independently color-corrected rendering of the content, not a single canonical set of pixels paired with different instructions for how a display should interpret it. If a single image accompanied by per-VM metadata could satisfy "a plurality of picture data," there would be no need for the specification's repeated discussion of N separately generated video masters and distinct "versions" of the content.

The prosecution history's discussion of the prior-art references confirms that the field understood metadata as information that describes or enables conversion of picture data, not as

picture data itself. For example, the prior-art Doser application (Ex. 24 (October 12, 2015 Office Action)), whose first-named inventor is also the first-named inventor of the '751 Patent, discloses a system in which a display device receives a color signal from a picture source together with additional “metadata” used for color-gamut conversion—metadata that is “preserved . . . all the way down to the sink which comprises the display device” so the display can “convert the color space used to another color space.” Ex. 25 (Doser Application) at 2, 4. The Doser prior-art application’s own usage draws a clear line: the color signal is the picture/color data being displayed, and the “metadata” is auxiliary descriptive information used to interpret or convert that signal.

Applicants’ own characterization of Doser during prosecution confirms this same distinction between picture data and metadata. When the Examiner rejected the pending claims as obvious over Itakura in view of Doser, Ex. 24 (October 12, 2015 Office Action), Applicants responded by explaining that:

Doser seemingly is concerned with “a method for displaying a color image commences by converting received color information from a source color space into color information for a device independent color space. Thereafter processing the color information for the device independent color space occurs in accordance with the received color information. The processed color information undergoes a conversion from the device independent color space into color information for a device dependent color space for subsequent display.”

Ex. 26 (Response to October 12, 2015 Office Action) at 7 (quoting Ex. 25 (Doser Publication) at [0006]). Applicants further explained that, although “Doser is related to the scope of the present amended claims,” it is “also very different.” *Id.*

In describing Doser, Applicants pointed to “color information” (i.e., picture data) being converted from one color space to another for eventual display. Applicants did not describe that conversion as operating on Doser’s separate “metadata” concept. This is consistent with Doser’s

own usage, which treats metadata not as the color information being converted, but as distinct, auxiliary information that enables the display device to perform that conversion. Ex. 27 (Doser Publication) at [0020] (“Such color modification processing can include the generation of the metadata that enables the delivery of the actual source gamut to the display color space.”), [0025] (“This metadata approach enables the display device 102 the ability to convert the source color space used to another color space”), claim 4 (“generating metadata necessary for the color information from the source color space to color information for the different color space”). That Doser repeatedly distinguished metadata from color information, and the ’751 Patent prosecution likened “picture data” to “color information” without invoking metadata, confirms that the ’751 Patent Applicants viewed “picture data” and “metadata” as two distinct categories of information.

The same understanding appears in Bogdanowicz (Ex. 28 (February 24, 2014 Office Action), which likewise distinguishes metadata from the image data itself. Bogdanowicz draws an explicit distinction: Figures 2 and 3 show “image pixels” and “metadata” are distinct and that image pixels are what is displayed. Ex. 29 (Bogdanowicz Application) at [0031], [0035] (the processing engine “takes the script as input and processes image pixels . . . which are input . . . into software . . . that includes a plurality of image source types and metadata,” while, separately, the metadata “enables selection of a proper 3D LUT . . . to process the image.”). Metadata is what enables selection and processing of picture data; it is not itself the picture data being displayed.

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CERTIFICATE OF SERVICE

I, Elizabeth Cummings, hereby certify that on August 18, 2026, a copy of the foregoing was served upon the following as indicated:

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