

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

**Before The Honorable Doris Johnson Hines
Administrative Law Judge**

In the Matter of

**CERTAIN VIDEO CAPABLE
ELECTRONIC DEVICES, INCLUDING
COMPUTERS, STREAMING DEVICES,
TELEVISIONS, CAMERAS, AND
COMPONENTS AND MODULES
THEREOF**

Investigation No. 337-TA-1379

RESPONDENTS' OPENING CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

Complainants' and Staff's construction of "skip coding mode" should be rejected because it cannot possibly be correct—it would require invalidating four dependent claims and exclude embodiments from U.S. Patent No. 7,532,808.

The '808 patent is directed to improved coding of "global motion," i.e., when a scene in a video frame moves because the camera pans in a certain direction. The '808 patent specifically alleges to improve upon "Global Motion Vector Coding" ("GMVC").¹ Ex. 1 ('808 patent) at 13:31-33.² GMVC uses two coding modes. In both modes, the encoder creates global motion vectors to instruct the decoder how to move the entire frame. Ex. 4 at 2-3. One GMVC mode also sends residual information—used to touch up visible errors—from the encoder to the decoder, while the other mode does not.

In contrast to GMVC's global motion vectors, each of the '808 patent's independent claims (1, 7, 10 and 16) describes a "skip coding mode" wherein motion vectors are derived at the decoder rather than sent by the encoder. These independent claims are silent on whether the "skip coding mode" utilizes residual information. But each independent claim is subsequently modified by a dependent claim whose only addition is to state expressly that "*no residual information is provided.*" '808 patent at cls. 30, 41, 48, and 60 (emphasis added). Thus, for these dependent claims to have any meaning at all—indeed, for them even to exist—the "skip coding mode" in the independent claims must necessarily allow residual information to be used in the decoding process. By reading residual information out of the independent claims completely, Complainants' and the Staff's construction not only ignores these four dependent claims, it renders them a nullity and invalidates them contrary to black letter precedent.

¹ The '808 patent incorporates GMVC by reference. '808 patent at 12:52-57.

² Exhibits to this motion are attached to the concurrently filed declaration of Thomas N. Millikan.

Complainants' and Staff's construction must be wrong also because it is inconsistent with the specification. The specification discloses embodiments where residual information can be provided. For example, the '808 patent discloses embodiments in Figures 6 and 7 in which an encoder and decoder can provide residual information. '808 patent at 16:51-55 (The encoder "codes the motion vector information and control information and forms a single bit stream of coded image information, 135 comprising the entropy coded motion vector, *prediction error [(i.e., residual information)]* and control information.") (emphasis added), 21:18-22 ("The prediction, that is the blocks of pixel values derived from the reference frame, are passed from motion compensated prediction block 740 to combiner 230 where they are combined with the decoded *prediction error [(i.e., residual information)]* information (if any)." (emphasis added)). Respondents' proposed construction preserves these embodiments, while Complainants' and Staff's proposed construction excludes them.

Finally, Complainants' and Staff's construction improperly imports a limitation from an embodiment into the claims. One statement in the specification describes not sending residual information with motion information. But that lone passage merely describes one embodiment, not the entire invention. Indeed, importing such a limitation would contradict a main tenet of claim construction, and the fact that it does confirms that Complainants' and Staff's construction cannot be adopted.

For all of these reasons, the ALJ should adopt Respondents' construction that "skip coding mode" means "a coding mode in which a zero (non-active) motion vector or a nonzero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question, and residual information can be provided for each skip mode macroblock."

II. BACKGROUND

A. Technology Background

In the following sections, Respondents present a high-level summary of the technical concepts involved in video coding and that underlie the present claim construction dispute, such as an explanation of how “residual information” (i.e., “prediction error”) is used to touch up visible errors.

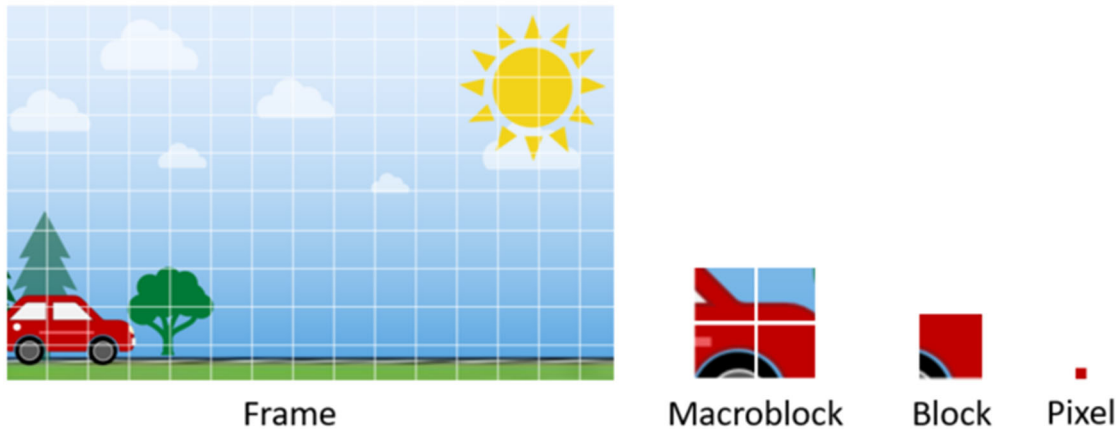
1. Building Blocks: Frames, Pixels, Blocks, Encoders/Decoders

Digital video is a series of still images shown in quick succession to give the illusion of movement. ’808 patent at 1:15-19. Each image is a “frame” comprised of millions of individual “pixels” that emit color and brightness. *Id.* at 1:32-40.



Frame

Sometimes, multiple pixels in a region are grouped together into “macroblocks” (16x16 pixels) or “blocks” (8x8 pixels). *Id.* at 1:58-67. The image below illustrates a frame broken down into macroblocks, blocks, and pixels.



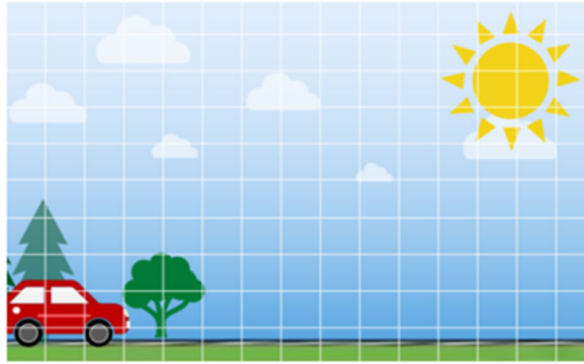
To generate digital video, an “encoder” is used to encode frame/pixel data into a digital format that can be transmitted. On the receiving end, a “decoder” decodes the data so it can be displayed. *Id.* at 3:47-52.

2. Shrinking the Data: Data Compression

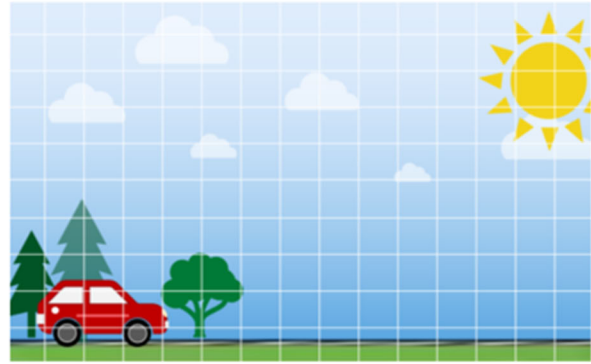
Encoders have long employed “data compression” techniques to reduce the data that must be encoded and transmitted. *Id.* at 2:36-55. Typically, those techniques leverage “redundant” data that has already been transmitted—for example, by copying previously-sent pixels or sending only “residual” information to fix visible errors after copying pixels. *Id.* at 3:11-43. Each of these are discussed in more detail below.

3. Types of Motion: Global Motion Versus Object Motion

When a camera moves by panning or zooming, it causes an entire frame to move. That movement is called “global motion.” *Id.* 1:26-29. For example, in our car video, if the camera pans to the left, the entire image shifts to the right, revealing additional information (e.g., another tree), and hiding other information (e.g., (a part of the sun):



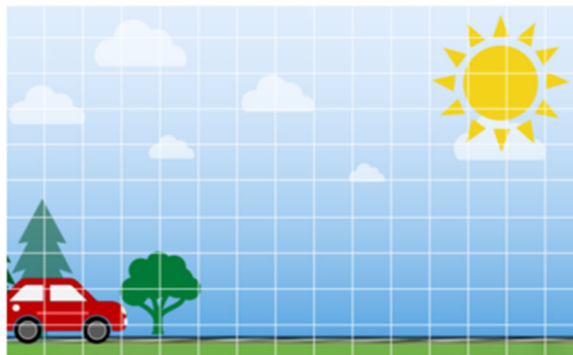
Frame 1



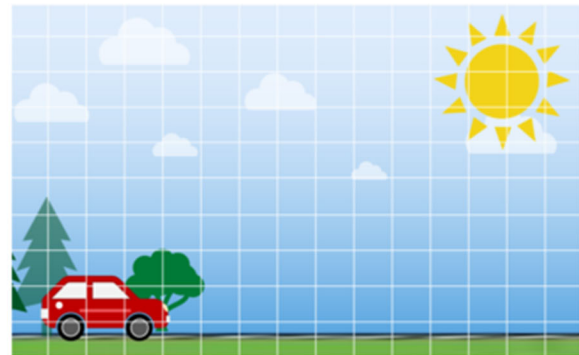
Frame 2

Most macroblocks in Frame 1 and Frame 2 cover the same visual image, just shifted. These similarities are a form of temporal redundancy. *Id.* at 2:42-45.

Other times, the camera is still and an object in one frame—e.g., a car driving across a road—is moved in a subsequent frame. *Id.* at 2:43-44. This is object motion. *Id.* For example, the car below is driving past the trees between Frame 1 and Frame 2. In this case, much of the background has not shifted, but the macroblocks showing the car have shifted.



Frame 1



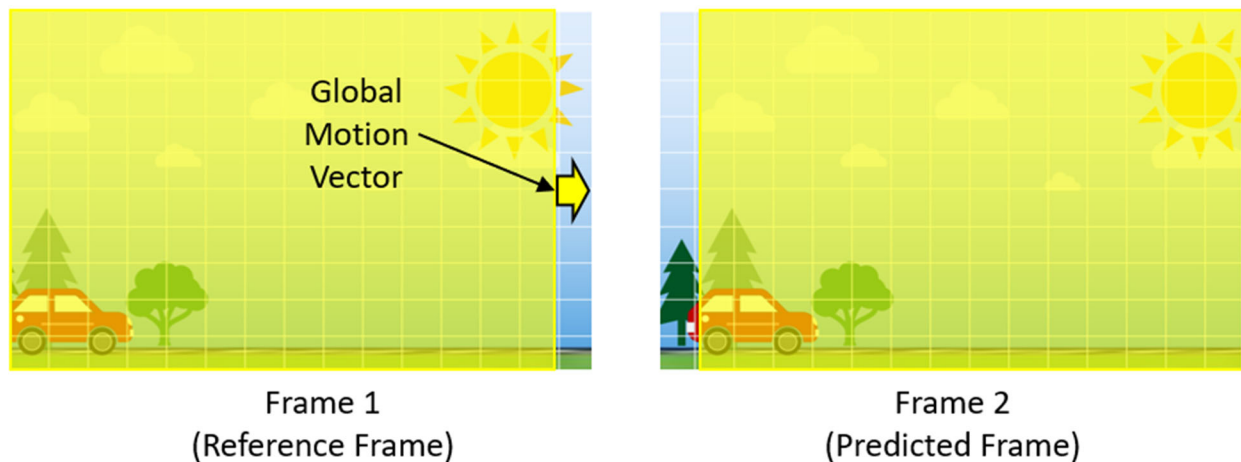
Frame 2

4. Copying Pixels: Motion Compensation and Motion Vectors

To exploit temporal redundancy, a first frame is sent with instructions to copy macroblocks from the first frame to a second frame and move the blocks according to the object's movement. *Id.* at 3:15-21. This technique is called “motion compensation” or “motion compensated

prediction.” *Id.* at 3:11-25. The copy instructions indicating where to copy the blocks from in the previous frame are called “motion vectors.” *Id.* 3:18-23.

For global motion, an encoder can estimate how much movement (e.g., panning) has occurred between frames and create a global motion vector. *Id.* at 13:30-44. Then, the encoder can code macroblocks to use the global motion vector. *Id.* In the example below, rather than encoding and transmitting all the identical macroblocks in both frames, the encoder can transmit just Frame 1 (called a reference frame³). Then, for a subsequent frame (Frame 2, called a predicted frame⁴), the encoder can send a global motion vector and a macroblock coding mode for each of the yellow macroblocks telling the decoder to copy and shift the macroblocks from Frame 1 according to the global motion vector. A separate global motion vector is not sent with each macroblock of Frame 2. *Id.* at 12:53-59.

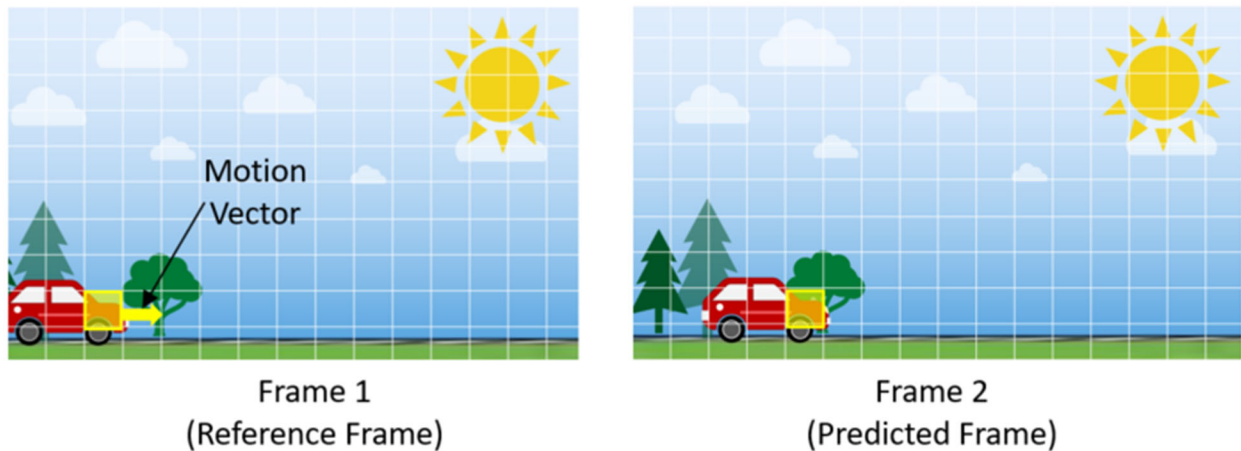


Similarly, for object motion, the encoder can transmit the reference frame, then, for the subsequent frame, send a motion vector for each macroblock where the object moved. *Id.* at 3:18-21. For example, the encoder can send a motion vector for the macroblock representing the front

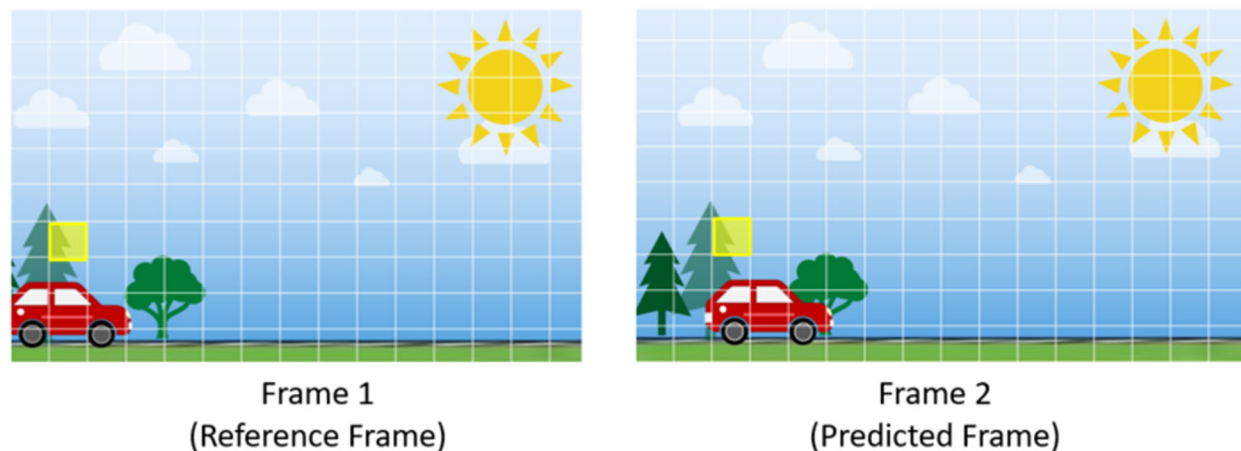
³ A reference frame that served as a reference for a predicted frame can also be referred to as an INTRA coded frame or I-frame. *Id.* at 3:3-6.

⁴ A predicted frame can also be referred to as an INTER coded frame or P-frame. *Id.* at 3:25-27.

of the car. To recreate the front of the car in the predicted frame, the decoder takes the previously-received macroblocks representing the car and copies the macroblock representing the front of the car to the location indicated by the motion vector.



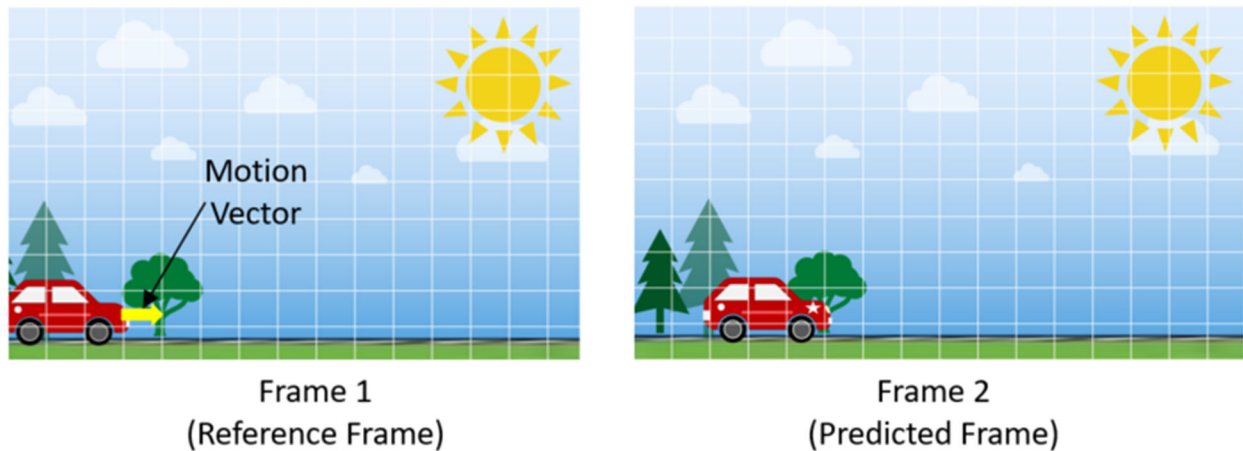
Sometimes there is no motion between frames. In that instance, macroblocks are typically copied from the same location in the previous frame and the motion vector is zero. *Id.* Returning to the car example, the background did not move between frames. For those elements, the encoder sends a reference frame and instructs the decoder to copy the macroblocks from the same location for subsequent frames. *Id.* at 10:64-67. The prior art called this “copy mode” or “skip mode.” *Id.* at 10:63-69; 12:54-58.



While the above techniques save bandwidth, sometimes the image in the reference and predicted frame changes a little and the copy of a macroblock is imperfect. In those instances, updates of the predicted macroblocks (i.e., touch ups) may be needed to fix visible errors.

5. Touching Up Visible Errors: Residual Information

To touch up visible errors, a decoder uses “residual information” (i.e., “prediction error”)⁵ to improve image quality. *Id.* at 3:28-38. The residual information represents the difference between the predicted version of frame 2 and the original version of frame 2. *Id.* at 3:31-35. For example, light from the sun may reflect differently on the car between the two frames, causing a shiny spot on the front. The encoder can send residual information to the decoder that represents the difference between the macroblock in the reference picture without the shiny spot and the macroblock in the predicted picture with the shiny spot. *Id.* at 3:31-35.



Residual information can be used with global motion and object motion. *Id.* at 12:54-58, 3:31-35.

6. Macroblock Coding Modes: Motion and Residual Information

Motion-compensated macroblocks can be assigned coding modes that identify whether the macroblock has motion information and residual information. *Id.* at 10:40-65. For example, the

⁵ The terms “prediction error” and “residual information” are interchangeable in the art. *See* Declaration of Dr. Joseph Havlicek at ¶¶ 24-34.

GMVC prior art system describes three macroblock coding modes (“GMVC_16,” “GMVC_Copy,” and “Copy”) that vary in whether they use global motion vectors and/or residual information. GMVC_16 uses global motion vectors and residual information, GMVC_COPY uses global motion vectors without residual, COPY uses no motion vectors and no residual. *Id.* at 12:54-58. In Joint Model Number 1—another prior art system incorporated by reference in the ’808 patent (*id.* at 10:34-39)—a “16x16” coding mode can use motion vectors and residual information, and a “skip mode” (hereinafter “JM1 Skip Mode”) uses no motion and no residual information. *Id.* at 10:40-50 and 12:26-37. These macroblock modes are summarized as follows:

Mode	Global Motion	Motion	Residual
GMVC_16	X		X
GMVC_COPY	X		
COPY			
JM1 16x16		X	X
JM1 Skip Mode			

B. The ’808 Patent: Allegedly Improved Global Motion Coding

The ’808 patent purportedly changed how the prior art global-motion coding modes derived motion information—instead of coding global motion vectors, the macroblock derives the motion from neighboring macroblocks. *See, e.g.*, ’808 patent at Abstract (“A method of motion-compensated video encoding that enables a video sequence with a global motion component to be encoded in an efficient manner.”). But the ’808 patent recognizes that residual information is still needed. ’808 patent at 3:28-32 (“Motion-compensated prediction alone rarely provides a sufficiently precise representation of the image content of a video frame and therefore it is typically necessary to provide a so-called ‘prediction error’ (PE) frame with each INTER-coded frame.”).

1. Overview of Relevant Claims

Because claim construction begins with the claims, Respondents want to provide the ALJ with a table showing the relationship between the claims relevant to this dispute.

1. A method of encoding a video sequence, the method comprising: assigning a skip coding mode to a first segment of a first frame of the sequence; ...	7. A method of decoding an encoded video sequence, the method comprising: receiving an indication of a skip coding mode for a first segment; ...	10. A video encoder for encoding a video sequence, the encoder comprises: a coding controller for assigning a skip coding mode to a first segment; ...	16. A video decoder for decoding an encoded video sequence, the decoder comprising: a demultiplexer for receiving an indication of a skip coding mode assigned to a first segment; ...
30. A method according to claim 1, wherein no residual information is provided for the first segment in the encoded bitstream.	41. A method according to claim 7, wherein no residual information is provided for the first segment in the encoded bitstream.	49. An encoder according to claim 10, wherein no residual information is provided for the first segment in the encoded bitstream.	60. A decoder according to claim 16, wherein no residual information is provided for the first segment in an encoded bitstream.

2. The '808 Patent Changed Prior Art That Disclosed Methods to Code Global Motion With And Without Residual Information.

The '808 describes problems with the motion information in GMVC, the prior art method for coding global motion mentioned in the introduction.⁶ '808 patent at 13:31-33. In GMVC, a reference frame is sent with information to describe global motion and additional macroblock modes are used to indicate when global motion vectors are used for a given macroblock. *Id.* at 13:33-36. Specifically, GMVC discloses two global motion macroblock modes (highlighted below).

⁶ The '808 patent incorporates VCEG-020 by reference. '808 patent at 12:52-57.

Table 2. Codeword number of MB modes

code number	GMVC off	GMVC on	comment
x	COPY	GMVC_COPY	GMVC modes
0	16x16	GMVC_16	
1	16x8	16x16	
2	8x16	16x8	non-GMVC modes
3	8x8	8x16	
4	8x4	8x8	
5	4x8	8x4	
6	4x4	4x8	
7	Intra 4x4	4x4	
8	0, 0, 0	Intra 4x4	
...	...	...	

Ex. 4 at 2 (emphasis added). In GMVC_Copy, the encoder uses an equation to derive motion and “there is *no residual coding*.” *Id.* at 3 (emphasis added). But in GMVC_16, “*only the transform coefficients of the motion compensated residual are coded* into the bitstream, not its motion vector.” *Id.* (emphasis added). In other words, GMVC disclosed two modes for global motion, one of which used residual information and the other did not.

GMVC was less complex than other global motion compensation methods, but still added encoder complexity to estimate motion. ’808 patent at 13:36-42. The method also generated extra global motion information that could be large for small resolution video. *Id.* at 13:42-44.

3. The ’808 Patent Allegedly Improves Coding the Motion Part of Global Motion.

Given the state of the art, the ’808 patent’s primary goal was to “combine the simplicity of local motion compensation with the coding efficiency of global motion compensation...” *Id.* at 14:6-8. Rather than build a standalone system, the inventors were focused on incorporating their motion information technique into the draft standard, called “Joint Model Number 1,” or JM1 in the ’808 patent. *Id.* at 19:28-51. As mentioned above, JM1 had the JM1 Skip Mode that sent no motion information and no residual information. The ’808 patent takes the “skip mode” term from JM1 and then adds its motion information technique. The ’808 patent describe the motion information for its “skip coding mode” as:

According to the invention, the coding modes used by encoder 600 correspond to those provided by JM1 of the JVT codec (shown in Table 3), with the exception that the SKIP mode is redefined to allow representation of global and regional motion. More specifically, the SKIP mode is modified in such a way that a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question. In the following this type of motion vector will be referred to as a “skip mode motion vector”.

'808 patent at 17:45-52, 19:28-51.

(a) The '808 Patent Encoder Can Derive Global Motion and Can Use Residual Information.

The '808 patent discloses an embodiment in which an encoder can derive motion and use residual information, as shown in annotated Figure 6 below.

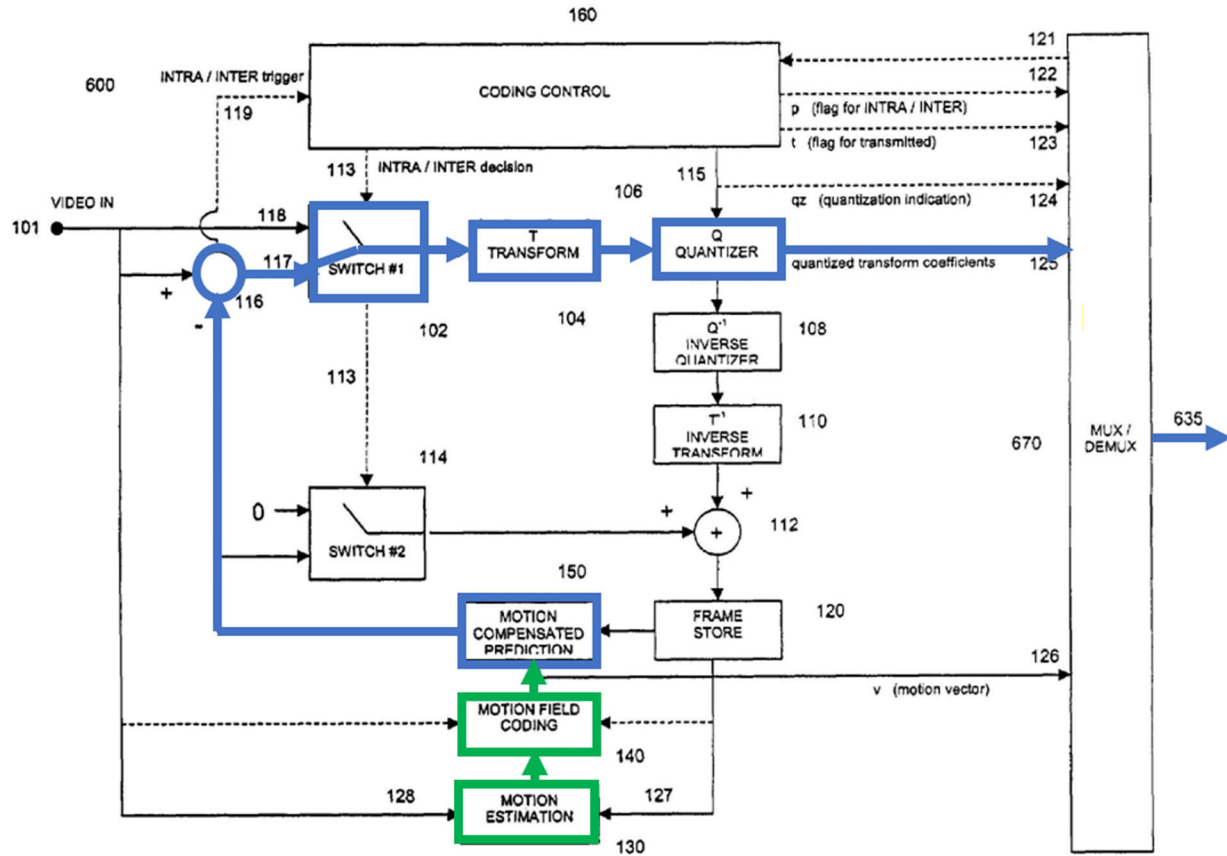


FIG. 6

The process for deriving a motion vector starts with the green boxes and arrows at the bottom of the figure. Motion estimation block 630 (in green) derives a “skip mode motion vector” for a macroblock and passes it through motion field coding 140 (also in green) to motion compensated predictor 150 (in blue). *Id.* at 17:23-54 (annotated). The “skip mode motion vector” is derived by analyzing “the motion of image segments (e.g., macroblocks and/or sub-blocks) surrounding the macroblock to be coded.” *Id.* at 17:57-60. More specifically:

[If] the encoder determines that the motion in the region surrounding the current macroblock has a global characteristic, skip mode coding is adapted to take account of this (by generating an associated non-zero valued skip mode motion vector representative of the motion). Alternatively, if no such motion is present, a zero valued motion vector is generated causing the skip mode as modified by the invention to operate in a conventional manner *i.e.* a zero valued skip mode motion vector causes a macroblock to be copied directly from the reference frame.

Id. at 18:2-11. Figure 8 (including blocks 802, 803, and 804) shows an embodiment for analyzing the motion in surrounding macroblocks. *Id.* at 18:24-19:10

The encoder can also use residual information, as shown in the blue boxes and lines. Picking up with motion compensated prediction block 150 in blue, it applies the “skip mode motion vector” to the macroblock received from the frame store 120 to generate a prediction for the current macroblock. *Id.* 16:22-31. The motion compensated prediction block “passe[s]” the prediction “to combiner 116,” which subtracts the prediction for the macroblock against the actual macroblock, and the result is used to generate “a set of prediction error blocks for the macroblock” (*i.e.* residual macroblocks). *Id.* Those then make their way through transform 104 and quantizer 106 into bit-stream 635. *Id.* at 8:14-18.

4. The '808 Patent Decoder Can Derive Motion and Can Use Residual Information.

On the receiving end, the '808 patent describes an embodiment in which the decoder can derive motion and use residual information, as shown in annotated Figure 7 below.

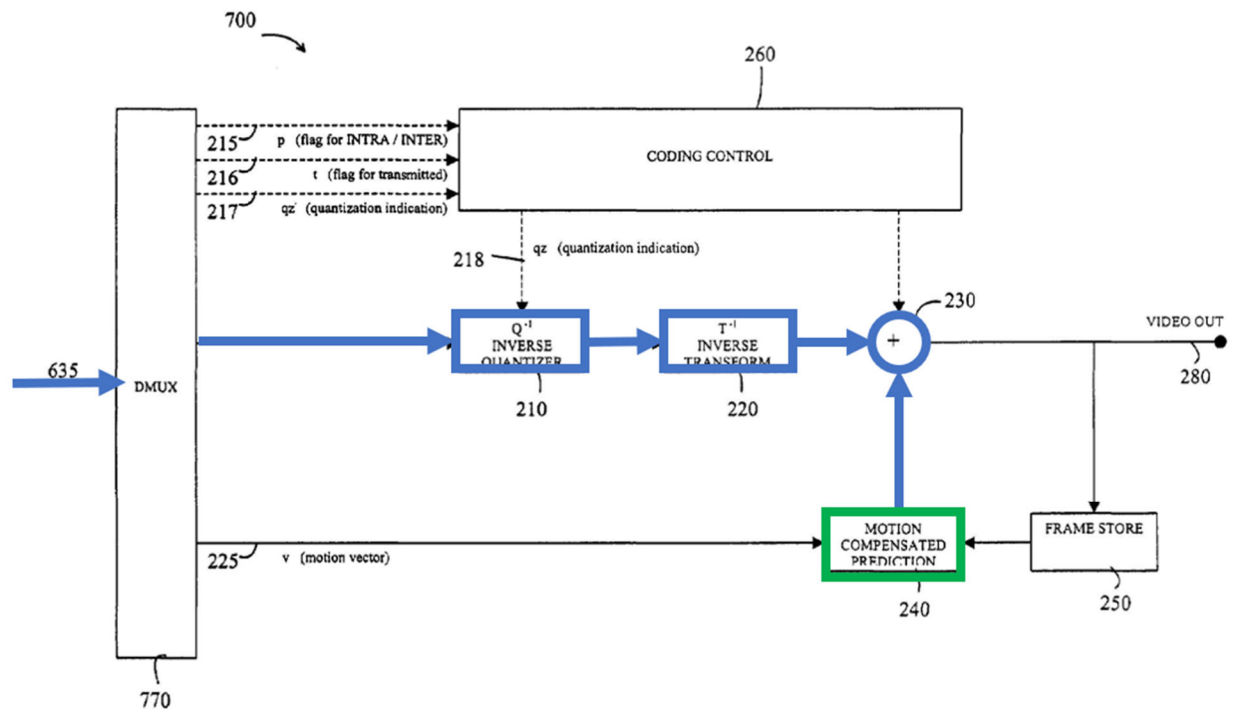


Fig. 7

For motion, the decoder does not have a “motion estimator” to analyze surrounding macroblocks per se, but the patent teaches that motion compensated prediction 240 (shown in green) has a motion analysis block (blocks 802, 803, and 804 shown in Figure 8).

Motion compensated prediction block 240 can derive a motion vector from surrounding macroblocks, obtain the pixels from a previous frame stored in frame store 250, and generate a prediction for the current macroblock (shown by the blue arrow). *Id.* at Fig. 7, 9:56-60, 15:40-42, 20:26-38. The decoder shows prediction error information (i.e., residual information) received by bitstream 635, passing through inverse quantizer 210 and inverse transform 220, then to combiner 230 where it is added to the predicted macroblock. *Id.* at 10:8-12.

III. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) at the time of the alleged invention of the asserted patents would have had a (1) Bachelor’s degree in electrical engineering, computer

engineering, computer science, or a comparable field of study, and (2) approximately two to three years of practical experience with video and/or image processing or coding. Additional experience can substitute for the level of education, and vice versa.

IV. LEGAL STANDARDS FOR CLAIM CONSTRUCTION

It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). Claim terms are generally given their ordinary and customary meaning, which is the meaning that the term would have to one of skill in the art at the time of the invention, in light of the entire patent, including the specification and prosecution history. *Id.* at 1312-13, 1321. The patent specification “is always highly relevant to the claim construction analysis.” *Id.* at 1316. “[T]he prosecution history can often inform the meaning of the claim language by demonstrating 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.” *Id.*

In some situations, a “court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331 (2015). Extrinsic evidence is “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317.

V. ARGUMENT

The parties and Staff only dispute the construction of “skip coding mode,” a term found in the independent claims of the ’808 patent.

A. “skip coding mode” (Claims 1, 6-7, 9-10, 15-16, 20, 23-25, 32, 34, 43-44, 51-54, 62-63)

Respondents’ Construction	Staff’s Construction	Complainants’ Construction
A coding mode in which a zero (non-active) motion vector or a nonzero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question, <u>and residual information can be provided for each skip mode Macroblock</u>	A coding mode in which a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question.	A coding mode in which a zero (non-active) motion vector or a non-zero (active) motion vector is associated with each skip mode macroblock, depending on the characteristics of the motion in image segments surrounding the macroblock in question.

As the ALJ can see, the parties’ and Staff’s proposed constructions are largely identical, with Respondents adding one phrase (shown in underline). The identical parts show the parties and Staff agree motion information can be provided in “skip coding mode.” But the parties and Staff disagree whether *residual information* can also be provided in that mode, with Respondents contending it can. As explained below, the ALJ should adopt Respondents’ construction because it is supported by embodiments in dependent claims and is consistent with embodiments in the specification. But adopting Complainants’ and Staff’s strained construction would require the ALJ to invalidate four dependent claims (claims 30, 41, 49, and 60), disregard embodiments, and import a limitation from the specification into the claims.

1. Respondents’ Construction Is Consistent With the Dependent Claims, While Complainants’ and Staff’s Construction Invalidates Them.

“Claim interpretation begins, as always, with the language of the claims.” *Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*, 279 F.3d 1357, 1370, 61 U.S.P.Q.2d 1647 (Fed. Cir. 2002). Relatedly, “[a court] must not interpret an independent claim in a way that is

inconsistent with a claim which depends from it.” *Wright Medical Technology, Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1445 (Fed. Cir. 1997). Here, Respondents’ claim construction analysis begins, as it should, with the claim language. Starting there, the ALJ can see Respondents’ construction accounts for embodiments recited in dependent claims, while Complainants’ and Staff’s construction would require the ALJ to invalidate those four dependent claims.

Independent claim 1 (highlighted below) recites a method for encoding global motion—indeed, “motion” appears eight times in the claim.

1. A method of encoding a video sequence, the method comprising:
assigning a skip coding mode to a first segment of a first frame of the sequence;
assigning either a zero motion vector or a predicted non-zero motion vector for the skip coding mode for the first segment based at least in part on the motion information of a second segment neighboring the first segment; and
forming a prediction for the first segment with respect to a reference frame based at least in part on the assigned motion vector for the skip coding mode, wherein the assigned motion vector is one of the zero motion vector and the predicted non-zero motion vector; and
providing in an encoded bitstream an indication of the skip coding mode, wherein no further motion vector information for the first segment is coded in the encoded bitstream.

The method broadly recites “assigning a skip coding mode to a first segment.” It does not exclude residual information and it cannot because dependent claim 30 specifies an embodiment in which “no residual information is provided for the first segment”:

30. A method according to claim 1, wherein no residual information is provided for the first segment in the encoded bitstream.

’808 patent at cl. 30 (highlighting added). Because dependent claim 30 specifies that no residual information is provided, independent claim 1 *must* allow providing residual information.

Otherwise, claim 30—and identical claims 41, 49, and 60—would be meaningless and not comply with 35 U.S.C. § 112 ¶ 4 (“[A] claim in dependent form shall ... specify a further limitation of the subject matter claimed.”); *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006) (“[R]eading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.”). The law strongly disfavors such an outcome. *Ortho-McNeil Pharm. v. Mylan Lab’ys, Inc.*, 520 F.3d 1358, 1362 (Fed. Cir. 2008) (“[T]his court strives to reach a claim construction that does not render claim language in dependent claims meaningless.”); *Littelfuse, Inc. v. Mersen USA EP Corp.*, 29 F.4th 1376, 1380 (Fed. Cir. 2022) (“A claim construction that leads to [a dependent claim being meaningless] is generally disfavored.”).⁷

Accordingly, the ALJ should adopt Respondents’ construction.

2. Respondents’ Construction Is Consistent with All Disclosed Embodiments.

Respondents’ construction should also be adopted because it is consistent with all embodiments disclosed in the ’808 patent. *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1324 (Fed. Cir. 2011) (Stating principle that “there is a strong presumption against a claim construction that excludes a disclosed embodiment...”).

⁷ While conferring, Complainants identified *Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*, 831 F.3d 1350 (Fed. Cir. 2016) to support their position that claim differentiation must cede to the ’808 patent’s definition of “skip coding mode.” But Complainants misunderstand the issue. In *Multilayer*, there was a direct inconsistency between a Markush grouping that identified four different layer materials and a dependent claim that identified a fifth material not in the Markush grouping. *Id.* at 1358-62. Here, there is no inconsistency because the independent claims are silent on residual information and, as the specification shows, it is entirely consistent for “skip coding mode” to have both motion and residual information.

Specifically, the independent claims (e.g., claim 1) cover embodiments that can have residual information and dependent claims (e.g., claim 30) cover Complainants’ preferred embodiment that cannot have residual information.

On top of that, the ’808 patent discloses multiple embodiments in the prior art and preferred embodiments which residual information can be sent. For example:

Embodiment	Exemplary Disclosure of Residual Information
GMVC_16	“only the transform coefficients of the motion compensated residual are coded into the bitstream, not its motion vector.” Ex. 4 at 3.
Figure 6 encoder	“It entropy codes the motion vector information and control information and forms a single bit stream of coded image information, 135 comprising the entropy coded motion vector, <i>prediction error</i> and control information.” ’808 patent at 16:51-55 (emphasis added).
Figure 7 decoder	“The prediction, that is the blocks of pixel values derived from the reference frame, are passed from motion compensated prediction block 740 to combiner 230 where they are combined with the decoded <i>prediction error</i> information (if any).” ’808 patent at 21:18-22 (emphasis added).

Respondents’ construction that allows for residual information is consistent with each of these embodiments. Complainants’ and Staff’s construction, on the other hand, excludes them. Consequently, the ALJ should adopt Respondents’ construction.

3. Complainants’ and Staff’s Construction Impermissibly Elevates One Embodiment Over a Claimed Embodiment.

Here, to rebut Respondents’ construction, Complainants and Staff may rely on a one-off statement for an embodiment in Figure 7 that is internally inconsistent with the rest of the disclosure and the dependent claims.

As mentioned above, the discussion of an embodiment in Figure 7 teaches the use of “prediction error information.” (i.e., residual information). *Id.* at 20:46-49. Then the specification attempts to take that away by stating that, “[i]f a macroblock is encoded in skip mode, no prediction error or motion vector information relating to the macroblock is included in the bit-stream.” ’808

patent at 20:53-55. But this lone statement describes just an embodiment. '808 patent at 20:26-28 (“Operation of a video decoder 700 according to an embodiment of the invention will now be described with reference to FIG. 7.”). Federal Circuit caselaw is clear that claim differentiation will overcome inconsistent statements in the specification.

For example, in *Phillips*, the Federal Circuit interpreted a claim to encompass an embodiment in a dependent claim despite statements in the specification that suggested the dependent-claim embodiment would not achieve the purpose of the invention. At issue in *Phillips* was the term “baffles” in an independent claim for a bulletproof prison wall. 415 F.3d at 1324-1325. “Baffles” are metal reinforcements attached to the interior of the wall to prevent bullets from passing through the wall entirely. *Id.* at 1324. The parties stipulated to most of the construction for baffles, but disagreed on the angle of the baffles to the wall. *Id.* A dependent claim described the baffles at angles that provided end-to-end deflector panels. So the Federal Circuit reasoned that “baffles” in the independent claim must include other angles (e.g., perpendicular), even though those other angles were not end-to-end and left holes that were bad at stopping bullets—the stated purpose of the invention.

Similarly, in *Littelfuse*, the Federal Circuit cautioned against limiting “the claimed invention to preferred embodiments or specific examples in the specification.” 29 F.4th at 1377 (citing *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002)). The patent at issue related to electrical fuse end caps. *Littelfuse*, 29 F.4th at 1377. The independent claim identified three pieces of the fuse cap, and a dependent claim said the three pieces “form a single, contiguous piece of conductive material.” The Federal Circuit reasoned that although the specification refers to the end cap only as a multi-piece apparatus, claim differentiation controlled. *Id.* at 1381-82. The Federal Circuit noted that “[n]othing in specification states that [it] cannot be

present in a single-piece apparatus.” Here, nothing in the ’808 patent states that “skip mode” cannot have residual information. Indeed, the global motion prior art the ’808 patent sought to improve global motion macroblocks with residual information, and Figures 6 and 7 of the ’808 patent describe systems that provide for residual information.

VI. CONCLUSION

Based on the foregoing, the ALJ should adopt Respondents’ proposed construction for “skip coding mode,” and preserve the validity of the dependent claims.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of **RESPONDENTS' OPENING CLAIM CONSTRUCTION BRIEF** has been served on February 13, 2024, as indicated, on the following:

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