

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

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

In the Matter of:

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

Investigation No. 337-TA-1379

COMPLAINANTS' REPLY CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	CLARIFICATION OF THE '808 PATENT AND TECHNICAL BACKGROUND	3
	1. The '808 Patent's Starting Point for the Redefined Skip Coding Mode	4
	a. The three prior art approaches discussed by the '808 Patent.....	5
	b. The '808 Patent's starting point for lexicography	6
	2. Coding Modes and Residual Information	7
	a. Coding modes	8
	b. Residual information.....	10
	3. Whether Motion Information is <i>Transmitted in</i> or <i>Derived From</i> the Redefined Skip Coding Mode.....	12
III.	ARGUMENT	15
	A. Respondents Misapply Claim Differentiation	15
	B. Respondents Fail to Show a Single Embodiment Where Residual Information is Provided with Skip Coding Mode.....	17
	C. Nokia and the Staff are Following Lexicography, not Improperly Elevating a Single Embodiment.....	20
	a. Even if Nokia and the Staff are “improperly elevating a single embodiment” (and they are not), Respondents’ construction still fails.....	22
IV.	CONCLUSION.....	23

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Enzo Biochem Inc. v. Applera Corp.</i> , 780 F.3d 1149 (Fed. Cir. 2015).....	16
<i>Honeywell Int’l, Inc. v. Universal Avionics Sys. Corp.</i> , 493 F.3d 1358 (Fed. Cir. 2007).....	15
<i>In re Katz Interactive Call Processing Pat. Litig.</i> , 639 F.3d 1303 (Fed. Cir. 2011).....	22
<i>Littelfuse, Inc. v. Mersen USA EP Corp.</i> , 29 F.4th 1376 (Fed. Cir. 2022)	22, 23
<i>Multiform Desiccants, Inc. v. Medzam, Ltd.</i> , 133 F.3d 1473 (Fed. Cir. 1998).....	16
<i>Nystrom v. TREX Co.</i> , 424 F.3d 1136 (Fed. Cir. 2005).....	16, 17
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) (<i>en banc</i>)	<i>passim</i>
<i>Tandon Corp. v. U.S. Int’l Trade Comm’n</i> , 831 F.2d 1017 (Fed. Cir. 1987).....	17
<i>Wi-LAN USA, Inc. v. Apple Inc.</i> , 830 F.3d 1374 (Fed. Cir. 2016).....	17
Statutes	
35 U.S.C. ¶ 112	12

I. INTRODUCTION

This is a debate over whether the '808 Patent's definition of skip coding mode should be amended to include "and residual information can be provided for each skip mode macroblock." It should not. If the inventor wanted to include "residual information" in their lexicography of skip coding mode, they would have done so.

Nokia and the Staff support a construction copied directly from the inventor's lexicography that is supported without contradiction throughout the patent. The inventor intentionally did not include "residual information" in the patent's redefinition of "skip coding mode." Black letter claim construction law tells us that the inventor's chosen lexicography is dispositive.

Respondents seek to alter the inventor's lexicography despite the Federal Circuit's directive in *Phillips* that "the inventor's lexicography governs," despite the mountain of evidence in the intrinsic record contradicting their construction, and despite Dr. Michael Orchard's expert declaration that a person of ordinary skill in the art ("POSITA") would see Respondents' construction as oxymoronic. (Amazon's expert, Dr. Joseph Havlicek, does not affirmatively agree with Respondents' construction in his declaration.) Respondents submit three arguments to overcome these hurdles. None succeeds.

One, Respondents advance a claim differentiation theory and allege Nokia and the Staff's construction invalidates four dependent claims. As a threshold matter, Respondents' application of claim differentiation is mistaken. Respondents confuse a dependent limitation stating that no residual information is provided for a given macroblock *in the encoded bitstream* with the fact the redefinition of skip coding mode—just one part of what might be in a bitstream—does not include residual information. Of course, an entire encoded bitstream is a different concept than a block-

by-block coding mode. Respondents themselves implicitly admit this by stating residual information can be used in different contexts, not just in block-by-block coding.

Moreover, we can assume *arguendo* that claim differentiation applies, and Respondents still lose. Lexicography and the intrinsic record govern over claim differentiation, which is only a guide rather than a rigid rule.

Two, Respondents allege their construction is consistent “with all disclosed embodiments.” Respondents’ Brief (“Resp. Br.”) at 20. Respondents offer three so-called “embodiments.” The first so-called embodiment (“GMVC_16”) on the list is not even from the ’808 Patent. *Id.* (citing “Ex. 4 at 3” rather than anything in the patent). What Respondents describe as an embodiment is actually a prior art technique expressly rejected by the inventor as failing to sufficiently solve the problems in the art. *See, e.g.*, 13:31-44 (background section identifying the problems with the prior art). The second and third so-called embodiments fare no better. Respondents identify Figures 6 (encoder) and 7 (decoder) and advance the uncontroversial proposition that each figure is capable of non-skip coding modes while ignoring the repeated discussions in the patent that additional information, including residual and motion information, is not used by the redefined skip coding mode. The fact the patent describes an encoder and decoder capable of non-skip coding modes does not dictate the construction of skip coding mode. The ’808 Patent plainly states that non-skip coding modes include residual and motion information while the redefinition of skip coding mode does not include this additional information.

Three, Respondents allege that Nokia and the Staff are elevating one embodiment in the patent over others. However, Respondents fail to identify a single embodiment of skip coding mode that includes residual information. Nothing in the patent suggests such an embodiment. Respondents ignore the ’808 Patent’s repeated descriptions of “the invention,” which all state that

no additional information is provided in the bitstream for skip coding mode. '808 Patent at 14:62-64 (“according to the invention,” no additional information in the bitstream for skip coding mode); 15:7-10 (same); 15:66-67 (same); 20:53-55 (same); 19:17-20 (same, albeit for an embodiment).

A POSITA would readily understand that the intent of the '808 Patent was to redefine the “SKIP” mode of Joint Model Number 1 or “JM1.” As Dr. Orchard explains in his declaration, a POSITA would readily understand from the lexicography and the specification that the “skip” aspect of the redefined skip coding mode remained intact.¹ That is, the '808 Patent’s redefined *skip* coding mode—as its name suggests to POSITAs—*skips* residual information.² What Respondents are trying to do is take the “skip” out of “skip coding mode” by adding residual information to the definition of “skip coding mode.” This is despite the fact the inventor made the choice to not include “residual information” in the lexicography of “skip coding mode.” For the reasons below, this is legally and technically baseless. The ALJ should adopt Nokia and the Staff’s construction.

II. CLARIFICATION OF THE '808 PATENT AND TECHNICAL BACKGROUND

Respondents’ brief suggests a misunderstanding of three basic concepts: (1) the '808 Patent’s JM1 starting point for its redefined skip coding mode; (2) coding modes and residual information; and (3) whether motion information is *transmitted in* or *derived from* the redefined skip coding mode. To set the stage for the argument that follows, these three concepts will be clarified in turn.

¹ Exhibit 2 to Complainants’ Opening Claim Construction Brief, Declaration of Dr. Michael Orchard (“Orchard Dec.”).

² Skip coding modes skip the representations of blocks in bitstreams and thus also skip motion vector information in the bitstream, but that is not the subject of this claim construction dispute.

1. The '808 Patent's Starting Point for the Redefined Skip Coding Mode

Respondents represent that the '808 Patent “alleges to improve upon ‘Global Motion Vector Coding’” and “purportedly changed how the prior art global-motion coding modes derived motion information.” Resp. Br. at 1 (citing '808 Patent at 13:31-33) and 9 (citing '808 Patent at Abstract). This misreads the patent.

The '808 Patent's background section discusses three prior art approaches: (1) JM1; (2) global motion compensation or “GMC”; and (3) Global Motion Vector Coding or “GMVC”. *E.g.*, '808 Patent at 13:49-14:10. Respondents portray the '808 Patent as building off of GMC or GMVC rather than JM1. *See, e.g.*, Resp. Br. at 1, 9. This is perhaps an attempt to bake elements of GMC and GMVC into their proposed construction of the '808 Patent's “skip coding mode.” Respondents' portrayal, however, is contradicted by the '808 Patent.

The '808 Patent explains the starting point for its lexicography of “skip coding mode” was not GMC or GMVC but instead JM1. As the '808 Patent expressly states, “[T]he present invention is based on a redefinition of the skip mode concept used in JM1 of the JVT codec.” *Id.* at 14:14-22; *see also* 17:43-53. The Respondents agree JM1 “uses no motion and no residual information.” Resp. Br. at 9.

Moreover, the '808 Patent explains that the very elements Respondents are trying to bake into the '808 Patent's skip coding mode (namely additional information, such as residual and motion information) are in fact differences between the present invention and GMC and GMVC:

As will become apparent from the detailed description of the invention presented below, ***redefinition of the skip mode concept as proposed by the present invention has significant technical advantages compared with the previously described prior art video coding methods.*** In particular, the method according to the invention enables global and regional motion within a video sequence to be taken account of in an efficient manner without the need for complex warping of the reference frame or any other computationally demanding operations. Furthermore, ***in contrast to both the global motion compensation [GMC] and global motion vector coding***

[GMVC] methods previously described, no additional information must be transmitted in the video bit-stream to enable correct decoding of the video data. Additionally, a minimal amount of modification is required to incorporate the method according to the invention into existing video coding systems that employ the concept of skip mode macroblocks.

'808 Patent at 14:65-15:14 (emphasis added).

a. The three prior art approaches discussed by the '808 Patent

The inventions of the '808 Patent arose in March 2002, when a video recommendation was under development. '808 Patent at 10:23-39. As the '808 Patent's background section explains, a version of the recommendation as of January 2002 was described in a document called JM1. *Id.* at 10:31-39. JM1 included a number of macroblock coding modes depicted in Table 3 of the '808 Patent. One of these coding modes was called "SKIP." *Id.* at Table 3. In JM1, SKIP mode indicated that a macroblock "is to be copied from the reference video frame without using motion compensated prediction." *Id.* at 10:63-67.

JM1's SKIP mode did not involve any information in the bitstream other than the indication of the coding mode. Orchard Dec. at ¶ 19; Exhibit 1 to Complainants' Opening Claim Construction Brief (JM1) at Subclause 3.4.1 (page 17, NOK_AMHP_ITC00079650). The '808 Patent describes that JM1 SKIP had the smallest overhead of the JM1 coding modes and JM1 assumed SKIP was "statistically the most likely coding mode." '808 Patent at 12:18-22, Table 3. However, JM1's assumption was "not valid" because SKIP could not be used in video sequences containing "global" motions such as panning and zooming. *Id.* at 12:41-47. This hurt JM1's compression efficiency because JM1's higher overhead macroblock coding modes were required to represent this motion. *Id.*

The '808 Patent's background section then explains attempts to solve this existing problem. Specifically, the patent discusses two "prior art solutions for improving the coding efficiency of

motion compensated prediction in the presence of global motion.” These solutions were called “global motion compensation” (GMC) and “Global Motion Vector Coding” (GMVC). ’808 Patent at 12:48-58. The ’808 Patent explains that each of the existing three approaches—JM1, GMC, and GMVC—“has some form of technical shortcoming.” *Id.* at 13:49-51. First, JM1 could not account for global motion and suffered efficiency degradation because any motion needed to be “explicitly model[ed].” *Id.* at 13:51-58. Second, GMC relied on a computationally complex reference frame “warping process” that required “additional information in the bit-stream to enable correct decoding of the video sequence.” *Id.* at 13:58-67. Third, GMVC, while computationally less demanding than GMC, nonetheless increased encoder complexity and “additional information must still be transmitted in the video bit-stream to enable correct decoding of the video data.” *Id.* at 13:67-14:5.

As a result of the existing problems in the art, the inventor sought to “combine the simplicity of local motion compensation with the coding efficiency of global motion compensation to yield a video coding system with significantly improved compression performance and a negligible increase in complexity.” ’808 Patent at 14:6-10. Moreover, unlike the GMC and GMVC techniques, the invention not only provides an “improvement in coding efficiency in the presence of global motion (i.e. motion affecting the entire area of video frame), but also enables regional motion to be represented in an efficient manner.” *Id.* at 14:18-22.

b. The ’808 Patent’s starting point for lexicography

Respondents’ representations to the ALJ that the inventor sought to “improve upon” and “changed” GMC and GMVC (*see* Resp. Br. at 1, 9) are contradicted by the intrinsic record. The ’808 Patent’s inventor rejected the GMC and GMVC approaches. *E.g.*, ’808 Patent at 15:7-14, 13:58-14:5. Instead, the inventor’s starting point was JM1. “[T]he present invention is based on a

redefinition of the skip mode concept used in JM1 of the JVT codec.” *Id.* at 15:13-18. The patent reiterates this point more than once. *See id.* at 17:43-53, 23:13-17. The inventor’s lexicography, which refers to JM1 (and not GMC or GMVC), is as follows:

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 17:43-53.

The starting point for the inventor’s lexicography matters. As Dr. Orchard explains in his declaration, a POSITA would readily understand that JM1’s skip coding mode included no residual information and that the redefinition of skip coding mode likewise includes no residual information. Orchard Dec. at ¶ 19-20. Indeed, the inventor explicitly distinguished the invention from GMC and GMVC because the invention requires “no additional information.” ’808 Patent at 14:65-15:14. There is no basis to add “residual information” to the ’808 Patent’s definition of skip coding mode simply because the patent explains why GMC and GMVC were inadequate solutions as background discussion. Indeed, the patent explains that GMC and GMVC are inadequate precisely because they require additional information.

2. Coding Modes and Residual Information

One point of agreement between the parties is that “prediction error,” a term used in the ’808 Patent specification, can be called “residual information.” *See* Orchard Dec. at ¶ 18; Resp. Br. at 8. However, there appears to be some confusion about the ’808 Patent’s discussion of

prediction error and its relationship to coding modes.³ For example, Respondents state that “[r]esidual information can be used with global motion and object motion.” Resp. Br. at 8 (citing ’808 Patent at 12:54-58, 3:31-35). Respondents rely on two disclosures from the ’808 Patent to support their statement: 12:54-58 and 3:31-35. But neither supports the proposition. The first citation, 12:54-58, does not say anything about prediction error or residual information. The second citation, 3:31-35, likewise does not say anything about “global motion” or “object motion.”

Respondents’ claim differentiation argument is that certain dependent claims⁴ of the ’808 Patent recite “wherein no residual information is provided for the first segment in the encoded bitstream” and therefore the independent claims “must allow providing residual information.” Resp. Br. at 18. However, whether residual information is included for a macroblock (a first segment) *in the encoded bitstream* at all is separate from whether that residual information is provided *as part of skip coding mode* for that macroblock. Where and how residual information can be included in a bitstream (e.g., by macroblock or for “global” or “object” motions), and whether the ’808 Patent gives any reason to believe its redefinition of skip coding mode includes residual information are therefore both relevant to this claim construction dispute.

Clarification on coding modes and residual information is warranted.

a. Coding modes

The ’808 Patent describes that coding mode assignment is done on a macroblock-by-macroblock basis.⁵ Encoder 600 (from Figure 6) acts “in a manner similar to the previously

³ INTER-coding modes, such as the NxM modes listed in Table 3 of the ’808 Patent, involve predictions made from a reference frame. *See, e.g.*, ’808 Patent at 3:11-28. INTER-coding modes exploit temporal redundancy across frames. *See, e.g., id.* This is distinct from INTRA-coding modes, which exploit spatial redundancy within frames. *See, e.g., id.* at 2:56-10.

⁴ Claims 30, 41, 49, and 60.

⁵ A macroblock is a 16x16 block of pixels. ’808 Patent at 10:40-41.

described JVT codec” and assigns a coding mode to each macroblock “depending on the characteristics of the macroblock and the motion in the sequence being coded.” ’808 Patent at 17:16-21. This process is called “motion estimation,” where an encoder will determine the best coding mode for a given macroblock based on the “overall cost value” (which may include, for example, an estimated number of bits to code the mode and represent motion vectors, if any). *Id.* at 17:21-42. Once the encoder performs “motion estimation operations for each of the available coding modes, including skip mode as modified according to the invention, encoder 600 determines which coding mode yields the smallest overall cost value and selects that mode as the coding mode for the macroblock in question.” *Id.* at 18:12-17. The encoder then includes an indication of the selected coding mode for the macroblock in the bitstream. *Id.* at 18:17-20. This indication will enable a decoder to identify the coding mode for the macroblock and use the “correct form of motion-compensated prediction.” *Id.* at 18:20-23.

The ’808 Patent describes that decoding can also occur on a macroblock-by-macroblock basis. ’808 Patent at 20:43-46. The ’808 Patent expressly states that what information is included in the bitstream for a given coding mode will depend on the coding mode:

Depending on the coding mode, the compressed video data included in the bitstream for an INTER-coded macroblock may comprise a combination of VLC encoded prediction error information for each block, motion vector information for the macroblock (or sub-blocks) and encoded control information including an indication of the coding mode used to encode the macroblock in question. If 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 20:46-55 (emphasis added). In other words, the bitstream may include prediction error and motion vector information for non-skip coding modes. However, the bitstream does not include prediction error and motion vector information for skip coding mode.

This delineation between non-skip coding modes and skip coding mode is consistent with the patent’s statement that “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 the representation of global and regional motion.” *Id.* at 17:43-47. Table 3 (shown below) depicts a SKIP mode followed by non-skip coding modes.

TABLE 3		
Macroblock Coding Modes of JM1		
Codeword Index	Mode	UVLC Codeword
—	SKIP	Run-Length Coded
0	16 × 16	1
1	16 × 8	001
2	8 × 16	011
3	8 × 8	00001
4	8 × 4	00011
5	4 × 8	01001
6	4 × 4	01011

b. Residual information

The patent further describes that a decoder “uses the coding mode indication and motion vector information (if any) to form a prediction for the macroblock in question.” ’808 Patent at 21:12-14. This prediction is done by forming an array of pixels by “copying corresponding pixel values from a region (or regions) of pixels in a reference frame.” *Id.* at 21:14-18. Then, the resulting prediction is “combined with the decoded prediction error information (if any)” to obtain an array of reconstructed pixel values. *Id.* at 21:18-24. These reconstructed pixel values are passed to video output and stored in “frame store” for future reference purposes. *Id.* at 21:25-31.

Respondents selectively highlight discussion of Figure 6 (encoder) and Figure 7 (decoder) to allege that the ’808 Patent contemplates including residual information as part of its redefined skip coding mode. Resp. Br. at 20. However, Respondents ignore that none of their cited passages actually discuss the skip coding mode. *See* Resp. Br. at 20 (citing ’808 Patent at 16:51-55, 21:18-22), 14 (citing 16:22-31). Instead, the ’808 Patent provides 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 20:46-55. The ’808 Patent reinforces this point repeatedly. *See, e.g., id.* at 14:62-64 (“according to the invention,” no additional information in bitstream for skip coding mode must be sent to model global or regional motion); 15:7-10 (same); 15:66-67 (same); 19:17-20 (same, albeit for an embodiment).

This leads us back to Respondents’ claim differentiation theory. Given that the ’808 Patent states that residual information is not provided in skip coding mode, are dependent claims 30, 41, 49, and 60, which recite “wherein no residual information is provided for the first segment in the encoded bitstream” rendered meaningless?

One answer (discussed in the argument section below), is that this does not change the construction of “skip coding mode” because claim differentiation provides no basis to disregard clear lexicography or the unequivocal teachings of the specification. The inventor chose not to include “residual information” in their definition of skip coding code, and that is dispositive.

Another answer is that Respondents confuse *skip coding mode* (the term up for construction) with the *entire encoded bitstream* (the subject of the negative limitation in these dependent claims). Recall that the skip coding mode as described in the ’808 Patent occurs and is signaled on a macroblock-by-macroblock basis within a larger bitstream. However, according to Respondents—albeit outside the scope of the ’808 Patent’s skip coding mode inventions—various residual information is possible, such as “residual information used with global motion and object motion” in an encoded bitstream. Resp. Br. at 8.

Nokia need not identify or explain all conceivable forms of residual information—after all, residual information is simply not part of Nokia’s skip coding mode inventions and not part of the inventor’s definition of “skip coding mode.” Rather, it suffices to say that Respondents admit

residual information could exist in a bitstream untethered from a block-by-block coding mode process. As a technical matter, this is fatal to Respondents' claim differentiation theory. The independent claims of the '808 Patent (claims 1, 7, 10, and 16) can all be satisfied with the redefined skip coding mode that does not include residual information for any skip mode macroblocks. At the same time, one would need further investigation to confirm whether "no residual information is provided for the first segment in the encoded bitstream" such that dependent claims 30, 41, 49, and 60 are satisfied. Namely, one would need to investigate the entire encoded bitstream rather than the skip coding mode indicated for a given macroblock. Therefore, given the difference between the independent and dependent claims, claims 30, 41, 49, and 60 cannot be "meaningless" or non-compliant with 35 U.S.C. § 112 as Respondents contend.

3. Whether Motion Information is *Transmitted in or Derived From* the Redefined Skip Coding Mode

Respondents describe the '808 Patent as "tak[ing] the 'skip mode' term from JM1 and then add[ing] its motion information technique." Resp. Br. at 11 (citing '808 Patent at 17:45-52, 19:28-51). Respondents later assert that the "the parties and Staff agree motion information can be provided in skip coding mode." Resp. Br. at 17. Both statements are inaccurate.⁶

First, the inventor was not merely taking just the words "skip mode" from JM1 and nothing else. The inventor used the skip coding mode of JM1 as a launch pad for lexicography. This makes sense because a POSITA familiar with JM1 would understand the context of the inventor's redefinition of "skip coding mode." Orchard Dec. at ¶¶ 20, 22. This is clear from the inventor's definition at column 17 lines 43-53 that explains the modifications being made to the JM1 skip

⁶ "Motion information" was not discussed on the claim construction meet and confer. Had Respondents asked Nokia whether it agreed "motion information can be provided in skip coding mode," Nokia would have disagreed and directed Respondents to at least the '808 Patent's disclosures at 14:62-64; 15:7-10; and 15:66-67; 19:17-20; 19:46-61, and 20:6-25.

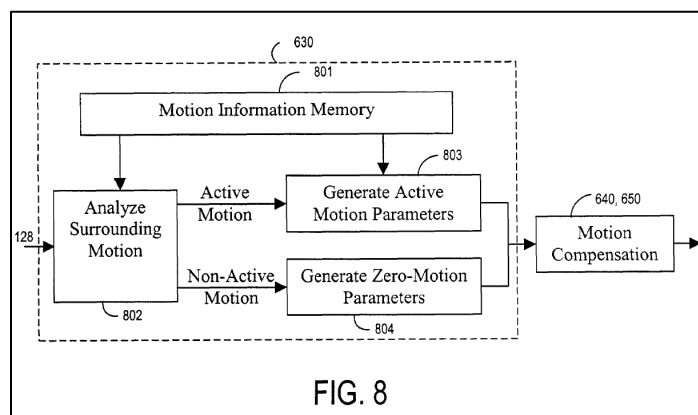
mode and that the redefined skip coding mode would be a more efficient substitute for JM1's skip mode. '808 Patent at 17:43-53 (lexicography), 10:23-39 (describing the recommendation under development); Orchard Dec. at ¶ 22.

Second, Respondents' statement that "motion information can be provided in skip coding mode" contradicts their admission on the very first page of their brief that "each of the '808 patent's claims ... describes a 'skip coding mode' wherein *motion vectors are derived at the decoder rather than sent by the encoder.*" Compare Resp. Br. at 1 (emphasis added) with *id.* at 17. The second statement is correct; the first is not.⁷ Because "motion vectors are derived at the decoder rather than sent by the encoder," as Respondents admit, including motion information would not make sense for the redefined skip coding mode. Moreover, "motion information" simply is not part of the inventor's definition of skip coding mode.

The notion that motion information is provided in skip coding mode confuses the signaling of skip coding mode in a bitstream with the subsequent motion vector generation and motion compensated prediction done by a decoder based on skip coding mode. Motion information is not "provided in skip coding mode" as Respondents allege on page 17 of their brief. Instead, as the claims and specification describe, after an encoder determines through motion estimation (e.g., '808 Patent at 18:12-17) that it will use the redefined skip coding mode for a particular macroblock, the encoder includes an "indication" of the skip coding mode in the bitstream, which can then be transmitted from the encoder to a decoder. '808 Patent at 18:17-23; *see, e.g.*, Claim 1[D] ("providing...an indication of the skip coding mode..."). A decoder receives an indication of skip

⁷ Based on Respondents' description of the '808 Patent on pages 11 and 17 of their opening brief, Nokia presumes Respondents are equating "motion information" with motion vectors describing the motion of macroblocks. Such motion vectors are not included in the bitstream as part of skip coding mode. *See, e.g.*, 14:62-64; 15:7-10; and 15:66-67; 19:17-20; 19:46-61, and 20:6-25.

coding mode (*see, e.g.*, Claim 7[A]) as part of a video bitstream and then, according to the definition provided at 17:43-53 and as depicted in Figure 8 (below), analyzes the “motion in image segments surrounding the macroblock in question” to determine how to generate a motion vector for the macroblock for “active” or “non-active” motion. A decoder is able to analyze the motion of image segments surrounding the macroblock in question because other macroblocks will have already been decoded, and the decoder can retrieve the motion information for these blocks in Motion Information Memory 801 (shown below). *See* ’808 Patent at 18:24-43, *see also* Fig. 9 (showing previously coded blocks surrounding a macroblock).



The patent provides two embodiments of this surrounding motion analysis process: 19:28-51 (using threshold values to distinguish between active and non-active motion) and 20:6-25 (imposing conditions to classify non-active motion from active motion). Regardless of the embodiment, nowhere does the ’808 Patent suggest the motion information for skip mode macroblocks is included in the bitstream as part of the redefined skip coding mode as Respondents appear to suggest. *See, e.g.*, ’808 Patent at 20:53-55; 14:62-64; 15:7-10; 15:66-67.

Respondents’ suggestion of motion information being provided in skip coding mode contradicts the lexicography (which does not include “motion information”) and renders the concept of a surrounding motion analysis redundant and wasteful. The lexicography expressly

states that skip mode motion vectors are generated by the encoder and decoder based on a surrounding motion analysis that determines whether active or non-active motion is present. ’808 Patent at 17:43-53. If, as Respondents allege on page 17 of their brief (but not on page 1), motion information is sent in the bitstream for skip coding mode, surrounding motion analysis by the decoder—part of the express lexicography—would be rendered superfluous. *But see Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (*en banc*) (when the meaning of a claim term is at issue, “the inventor’s lexicography governs”). Moreover, the ’808 Patent provides that, “If a macroblock is encoded in skip mode, no prediction error or motion vector information relating to the macroblock is included in the bit-stream.” *Id.* at 20:53-55 (emphasis added); *see also id.* at 14:62-64 (“according to the invention,” no additional information in bitstream for skip coding mode must be sent to model global or regional motion); 15:7-10 (same); 15:66-67 (same); 19:17-20 (same, albeit for an embodiment).

III. ARGUMENT

The inventor chose not to include “residual information” (or “motion information” for that matter) in their definition of “skip coding mode.” The inventor’s lexicography governs. *Honeywell Int’l, Inc. v. Universal Avionics Sys. Corp.*, 493 F.3d 1358, 1361 (Fed. Cir. 2007) (citation omitted). None of Respondents arguments warrant straying from this hard and fast rule.

A. Respondents Misapply Claim Differentiation

Respondents argue that claim 1 cannot exclude residual information because “dependent claim 30 specifies an embodiment in which ‘no residual information is provided for the first segment.’” Resp. Br. at 18. Claims 1 and 30 are provided below.

Claim 1	Claim 30
1. A method of encoding a video sequence, the method comprising:	30. A method according to claim 1, wherein no residual information is provided for the first segment in the encoded bitstream.

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.	
--	--

Respondents argue claim 1 “*must* allow providing residual information” because “claim 30 specifies that no residual information is provided.” Resp. Br. at 18 (emphasis original) (no citations omitted). This both misstates the law and misses nuances in the claims.

First, this dispute is about the construction of “skip coding mode,” not whether claim 1 precludes residual information in any form. Respondents are asking the ALJ to broaden the scope of “skip coding mode” beyond the inventor’s express definition to include residual information based on an alleged overlap with claim 30. However, “the doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence.” *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1480 (Fed. Cir. 1998); *see also Enzo Biochem Inc. v. Applera Corp.*, 780 F.3d 1149, 1156 (Fed. Cir. 2015) (“[D]ependent claims cannot broaden an independent claim from which they depend.”) (citation omitted); *Nystrom v. TREX Co.*, 424 F.3d 1136, 1143 (Fed. Cir.

2005) (rejecting claim differentiation argument that the term “board” in a claim include materials beyond wood because of another claim that covered a “wood decking board” because the intrinsic record dictated a different result); *Tandon Corp. v. U.S. Int’l Trade Comm’n*, 831 F.2d 1017, 1024 (Fed. Cir. 1987) (the term “non-gimballed” in a claim did not require that other claims be read to “encompass a gimballed first transducer”). Ultimately, any claim differentiation arguments must give way to the inventor’s lexicography. *Phillips*, 415 F.3d at 1316 (when the meaning of a claim term is at issue, “the inventor’s lexicography governs”).

Second, Respondents are asking the ALJ to construe *skip coding mode* to include residual information based on a negative limitation in dependent claims that does not even apply to “the skip coding mode.” This is mistaken. As explained, claim 30 provides a negative limitation that no residual information for the first segment (e.g., the skip mode macroblock) is provided *in the encoded bitstream*. There is a common sense difference between the *skip coding mode* providing residual information for a first segment (which is not part of the inventor’s definition) and whether residual information is provided anywhere *in the encoded bitstream* for the first segment. Claim differentiation does not “apply untethered from the reasonable meaning of the claim language on which it rests.” *Wi-LAN USA, Inc. v. Apple Inc.*, 830 F.3d 1374, 1391 (Fed. Cir. 2016).

This is not a situation like *Nystrom* where two claims use overlapping terms such as “board” and “wood decking board.” See *Nystrom*, 424 F.3d at 1143. Here, the restriction of no residual information in “the encoded bitstream” is quite clearly different in scope from the fact the inventor did not include “residual information” in their redefinition of “skip coding mode.”

B. Respondents Fail to Show a Single Embodiment Where Residual Information is Provided with Skip Coding Mode

Respondents argue their construction is “consistent with all embodiments disclosed in the ’808 Patent.” Resp. Br. at 19. This is incorrect. In fact, Respondents’ construction is inconsistent

with every embodiment of “skip coding mode” in the specification. *See, e.g.*, ’808 Patent at 20:46-55, 14:62-64; 15:7-10; 15:66-67; 19:17-20. The ’808 Patent consistently expresses, using various phrasing, that “no prediction error or motion vector information” and “no additional information” is included in the bitstream for the redefined skip coding mode. *See, e.g., id.* at 20:46-55, 14:62-64; 15:7-10; 15:66-67; 19:17-20.

Respondents claim to have identified three embodiments in which “residual information can be sent.” Resp. Br. at 20. Respondents’ table of alleged embodiments is shown below. *Id.*

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’ first alleged embodiment, “GMVC_16,” can be disposed of quickly. “GMVC_16” is not discussed anywhere in the patent. To the extent Respondents intend for this “embodiment” to refer to GMVC more generally, the ’808 Patent explains that the invention is different from, and superior to, GMVC. *See, e.g.*, ’808 13:31-49; 13:67-14:5; 15:7-11. Simply put, GMVC (in any form) is not an embodiment of the ’808 Patent’s invention.

The next two alleged embodiments, Figures 6 and 7, can be grouped together because Respondents make the same mistake for each. Both are structural figures capable of multiple coding modes. While ignoring discussions of skip coding mode, Respondents rely on these figures as alleged embodiments but only in reference to non-skip coding modes.

Figures 6 and 7 depict an encoder and decoder that are capable of handling multiple coding modes. ’808 Patent at 17:14-24 (encoder 600 selects from multiple coding modes); 20:43-55

(decoder 700 can receive both non-skip and skip coding modes). Respondents selectively highlight discussion of Figure 6 and 7 with reference to non-skip coding modes while claiming those figures are “embodiments” of the ’808 Patent’s redefined skip coding mode invention. However, Respondents ignore that neither of their cited passages (16:51-55 and 21:18-22) actually discuss the redefined skip coding mode. At bottom, Respondents articulate no basis to broaden a claim term beyond the inventor’s express definition simply because structural figures in a patent are capable of modes of operation other than the invention.

Respondents appear to be interpreting the word “embodiment” quite broadly because none of their alleged embodiments are actually *of the invention*. By contrast, when courts discuss “embodiments” in the context of claim construction, what courts mean are “embodiments of the invention.” *See, e.g., Phillips*, 415 F.3d at 1323 (using “embodiments” to refer to “embodiments of the invention”).

Additionally, Respondents take a rather disingenuous approach to what is and is not within an “embodiment.” For example, the patent provides, with reference to Figure 7, that “no prediction error or motion vector information relating to the macroblock is included in the bit-stream” for a skip mode macroblock. ’808 Patent at 20:53-55.⁸ This disclosure is in the same column as Respondents’ alleged support for the “Figure 7 decoder” embodiment. Yet Respondents do not include this discussion as part of their “Figure 7 decoder” embodiment. They should.

Likewise, the patent provides its redefinition of “skip coding mode” based on a modification of JM1 SKIP (which does not include residual information), Orchard Dec. at ¶ 19-

⁸ The “bit-stream” in this paragraph refers to “bit-stream 635.” ’808 Patent at 20:43-55. Bitstream 635 is output by Figure 6 and received by Figure 7. *Id.* at Figs. 6 and 7. In both cases, “[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.” *Id.* at 20:53-55.

20, in the context of the Figure 6 encoder. '808 Patent at 17:43-53. The Respondents do not include this discussion as part of their “Figure 6 encoder” embodiment. They should.

C. Nokia and the Staff are Following Lexicography, not Improperly Elevating a Single Embodiment

Despite all evidence to the contrary, Respondents allege Nokia and the Staff have honed in 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.” Resp. Br. at 20. Respondents do not address other disclosures in the patent, for example, at 14:62-64 (“according to the invention,” no additional information in the bitstream for skip coding mode); 15:7-10 (same); 15:66-67 (same); 20:53-55 (same); 19:17-20 (same, albeit for an embodiment).

In any event, Respondents do not articulate how the supposed “one-off statement” is inconsistent with anything in the specification. Nor do Respondents explain how they can argue the “Figure 7 decoder” generally is an embodiment supporting their construction while simultaneously disclaiming unfavorable disclosures regarding Figure 7 (that is, all discussion about the redefined skip coding mode) as a separate embodiment. *Compare* Resp. Br. at 20 (“an embodiment *in* Figure 7”) (emphasis added) *with id.* at 20 (alleging a “Figure 7 decoder” embodiment).

Respondents allege Figure 7 “teaches the use of ‘prediction error information’” at column 20, lines 46 to 49. Resp. Br. at 20. Then—and this is absurd—Respondents allege “the specification attempts to take that away” in the same column merely four lines later. *Id.* at 20-21 (citing 20:53-55). It is bizarre to say a patent specification “attempts to take [] away” something it taught four lines prior. *But see id.* Fortunately, reading the relevant “teaching” and “taking away” together puts things into perspective.

INTER-coded frames are decoded macroblock by macroblock, each INTER-coded macroblock being decoded substantially as soon as encoded information relating to it is received in the bit-stream 635. Depending on the coding mode, the compressed video data included in the bit-stream for an INTER-coded macroblock may comprise a combination of VLC encoded prediction error information for each block, motion vector information for the macroblock (or sub-blocks) and encoded control information including an indication of the coding mode used to encode the macroblock in question. If 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 20:43-55.

Respondents' selective quotation of the passage above is misleading. Reviewing the passage comprehensively provides clarity. The portion of the specification Respondents cite as "teach[ing] the use of 'prediction error information'" in support of their proposed construction of "skip coding mode" is highlighted yellow.⁹ The portion of the specification Respondents claim "attempts to take that away" is highlighted green. The yellow highlighted portion straightforwardly explains that prediction error and motion vector information can be included "depending on the coding mode." *Id.* at 20:46-53. The green highlighted portion clarifies that, for the redefined skip coding mode, no prediction error or motion vector information is included in the bitstream. *Id.* at 20:53-55. Far from separate embodiments or contradictory teachings, the inventor intended that lines 46 through 55 of column 20 be read together. This disclosure, read altogether, is consistent with the inventor's redefinition of skip coding mode as modified from JM1's SKIP mode. *See* '808 Patent at 17:43-53. This disclosure is also consistent with the repeated teachings of the patent. *Id.* at 14:62-64 ("according to the invention," no additional information in the bitstream for skip

⁹ Respondents cited to only part of the sentence.

coding mode); 15:7-10 (same); 15:66-67 (same); 20:53-55 (same); 19:17-20 (same, albeit for an embodiment). Respondents do not address these disclosures in their opening brief.

a. Even if Nokia and the Staff are “improperly elevating a single embodiment” (and they are not), Respondents’ construction still fails

“[T]here is a strong presumption against a claim construction that excludes a disclosed embodiment.” *In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303 (Fed. Cir. 2011) (citation omitted). According to Respondents, the ’808 Patent’s statement 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” is merely a “lone statement [that] describes just an embodiment.” Resp. Br. at 21; ’808 Patent at 20:53-55. Respondents’ proposed construction, by their own admission, excludes this so-called embodiment.¹⁰

Putting aside that Respondents’ proposed construction materially changes the inventor’s express lexicography, putting aside that Respondents misapply claim differentiation, and putting aside that Respondents fail to identify a single embodiment *of the invention* consistent with their proposed construction, Respondents fail to articulate why they are entitled to a construction that excludes an embodiment by their own admission. Respondents cite *Phillips*, 415 F.3d at 1324-25, and *Littelfuse, Inc. v. Mersen USA EP Corp.*, 29 F.4th 1376 (Fed. Cir. 2022). But neither of these cases stands for the proposition that a claim construction can exclude an embodiment of the

¹⁰ Respondents later state “nothing in the ’808 Patent states that ‘skip mode’ cannot have residual information.” Resp. Br. at 22. Not only is this statement contradicted throughout the ’808 Patent’s specification (as discussed above), this statement is contradicted by Respondents’ own brief, which admits the ’808 Patent expressly says “[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,” which Respondents describe as an “embodiment.” Resp. Br. at 21; ’808 Patent at 20:53-55.

invention (not to mention materially change an inventor's express lexicography). Neither *Phillips* nor *Littelfuse* endorse the approach Respondents ask the ALJ to take.

IV. CONCLUSION

For the foregoing reasons, the ALJ should adopt Nokia and the Staff's proposed construction of "skip coding mode," which is copied directly from the inventor's lexicography and consistent with the specification.

CERTIFICATE OF WORD COUNT COMPLIANCE

Pursuant to Ground Rule 1.7 the undersigned hereby certifies that the forgoing brief complies with the word-count limitation, and contains 6,777 words according to the word-processing program used to prepare this document (Microsoft Word). The word count includes footnotes. The word count does not include captions, table of contents, table of authorities, words in figures, the word count certificate, the signature block, or the certificate of service.

Dated: February 23, 2024

Respectfully submitted,

/s/ Joshua Newcomer

Adam D. Swain
Alston & Bird LLP
950 F Street NW
Washington, DC 20004
Telephone: (202) 239-3300
Facsimile: (202) 239-3333

John D. Haynes
Nicholas T. Tsui
Lindsay Church
Shawn Gannon
Alston & Bird LLP
1201 West Peachtree Street
Atlanta, GA 30309
Telephone: (404) 881-7000
Facsimile: (404) 881-7777

Theodore Stevenson
Alston & Bird LLP
2200 Ross Avenue, Suite 2300
Dallas, TX 75201
Phone: (214) 922-3400
Fax: (214) 922-3899

Warren Lipschitz
wlipschitz@mckoolsmith.com
McKool Smith P.C.
300 Crescent Court, Suite 1500
Dallas, Texas 75201
Telephone: (214) 978-4000
Facsimile: (214) 978-4044

R. Mitch Verboncoeur
mverboncoeur@mckoolsmith.com
McKool Smith P.C.
303 Colorado, Suite 2100
Austin, Texas 78701
Telephone: (512) 692-8700
Facsimile: (214) 978-4044

Josh Newcomer
jnewcomer@mckoolsmith.com

McKool Smith P.C.
600 Travis St., Suite 7000
Houston, Texas 77002
Telephone: (713) 485-7300
Facsimile: (713) 485-7344

*Counsel for Complainants
Nokia Technologies Oy and Nokia
Corp.*

CERTIFICATE OF SERVICE

I, Melissa Kalka, hereby certify that on February 23, 2024, a true and correct copy of the foregoing document was served by the indicated means to the persons at the addresses below:

The Honorable Lisa R. Barton, Secretary U.S. International Trade Commission 500 E Street, S.W., Room 112 Washington, DC 20436	☐ Via First Class Mail ☐ Via Express Delivery ☐ Via Hand Delivery ☒ Via EDIS
The Honorable Doris Johnson Hines Administrative Law Judge U.S. International Trade Commission 500 E Street, S.W. Washington, DC 20436	☐ Via Hand Delivery ☐ Via Express Delivery ☐ Via First Class Mail ☒ Via EDIS ☐ Other: Email to JohnsonHines1379@usitc.gov Pyong.Yoon@usitc.gov
Marissa Ducca, Esq. Jeffrey Hsu, Esq. Office of Unfair Import Investigations U.S. International Trade Commission 500 E Street, S.W., Room 401 Washington, DC 20436	☐ Via Hand Delivery ☐ Via Express Delivery ☐ Via First Class Mail ☒ Other: Email and Box to Marissa.Ducca@usitc.gov Jeffrey.Hsu@usitc.gov
Stefani E. Shanberg Robin L. Brewer PERKINS COIE LLP 505 Howard Street, Suite 1000 San Francisco, California 94105-3204 Thomas N. Millikan PERKINS COIE LLP 11452 El Camino Real, Suite 300 San Diego, CA 92130-2080 Veronica S. Ascarrunz PERKINS COIE LLP 700 13th Street, NW, Suite 800 Washington, DC 20005-3960	☐ Via Hand Delivery ☐ Via Express Delivery ☐ Via First Class Mail ☒ Other: Email to Nokia_Amazon_ITC_Perkins@perkinscoie.com LegalTm-Amazon-Nokia@sheppardmullin.com amazon-nokia-ITC@fenwick.com

Stephen S. Korniczky Martin R. Bader SHEPPARD, MULLIN, RICHTER & HAMPTON LLP 12275 El Camino Real, Suite 100 San Diego, CA 92130-4092 J. David Hadden Vigen Salmastlian Allen Wang FENWICK & WEST LLP 801 California Street Mountain View, CA 94041 <i>Counsel for Respondents Amazon.com, Inc. and Amazon.com Services LLC</i>	
Eric S. Namrow Stephanie L. Roberts Kandis C. Gibson Manu Bansal, Ph.D. Kevin J. Spinella Eunjean Je Morgan, Lewis & Bockius LLP 1111 Pennsylvania Ave, N.W. Washington, D.C. 20004-2541 David J. Levy Rick L. Rambo Thomas R. Davis Morgan, Lewis & Bockius LLP 1000 Louisiana Street, Suite 4000 Houston, TX 77002-5005 Jason E. Gettleman Corey R. Houmand Morgan, Lewis & Bockius LLP 1400 Page Mill Road Palo Alto, CA 94304 Kevin J. Post Lance W. Shapiro ROPES & GRAY LLP 1211 Avenue of the Americas New York, NY 10036 Telephone: (212) 596-9000 Facsimile: (212) 596-9090	☐ Via Hand Delivery ☐ Via Express Delivery ☐ Via First Class Mail ☒ Other: Email to HP-Nokia-ITC@morganlewis.com HP-Nokia-Ropes1379@ropesgray.com matthew.rizzolo@ropesgray.com

Matthew J. Rizzolo ROPES & GRAY LLP 2099 Pennsylvania Ave NW Washington, DC 20006 Telephone: (202) 508-4600 Facsimile: (202) 508-4650	
---	--

Counsel for Respondent HP Inc.

/s/ Melissa Kalka

Melissa Kalka
Senior Paralegal
McKool Smith