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

**Before the Honorable MaryJoan McNamara**
**Administrative Law Judge**

| | |
|---|---|
| **In the Matter of**<br><br>**CERTAIN VIDEO-CAPABLE LAPTOP, DESKTOP COMPUTERS, HANDHELD COMPUTERS, TABLETS, TELEVISIONS, PROJECTORS, AND COMPONENTS AND MODULES THEREOF** | **Investigation No. 337-TA-1448** |

# COMPLAINANTS' REPLY POST-HEARING BRIEF



ASUS-1066
ASUS v. Nokia
IPR2025-01153

[redacted]

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## TABLE OF ABBREVIATIONS

| Abbreviation | Description |
|---|---|
| **Complainants or Nokia** | Nokia Technologies Oy and Nokia Corporation |
| **Acer** | Acer Inc. and Acer America Corporation |
| **ASUS** | ASUSTeK Computer Inc. and ASUS Computer International |
| **Respondents** | Acer and ASUS |
| **CPBr.** | Complainants' Pre-Hearing Brief |
| **RPBr.** | Respondents' Pre-Hearing Brief |
| **SPBr.** | Staff's Pre-Hearing Brief |
| **CBr.** | Complainants' Initial Post-Hearing Brief |
| **RBr.** | Respondents' Initial Post-Hearing Brief |
| **SBr.** | Staff's Initial Post-Hearing Brief |
| **CMB** | Complainants' Markman Brief |
| **RMB** | Respondents' Markman Brief |
| **SMB** | Staff's Markman Brief |
| **Tr.** | Evidentiary hearing transcript |
| **Dep.** | Deposition transcript |
| **'701 Patent** | U.S. Patent No. 9,036,701 |
| **'714 Patent** | U.S. Patent No. 10,536,714 |
| **'267 Patent** | U.S. Patent No. 11,805,267 |
| **'321 Patent** | U.S. Patent No. 8,050,321 |
| **Asserted Patents** | The '701, '714, '267, and '321 Patents |
| **Asserted Apparatus Claims** | Claim 10 of the '321 Patent, Claim 8 of the '701 Patent, Claims 19 and 23 of the '714 Patent, and Claims 8 and 26 of the '267 Patent |
| **Asserted Method Claims** | Claim 8 of the '321 Patent, Claim 1 of the '701 Patent, Claims 1 and 9 of the '714 Patent, and Claims 2 and 20 of the '267 Patent |
| **JX** | Joint Exhibit |
| **JPX** | Joint Physical Exhibit |

[redacted]

| Abbreviation | Description |
|---|---|
| **CX** | Complainants' Exhibit |
| **CPX** | Complainants' Physical Exhibit |
| **CDX** | Complainants' Demonstrative Exhibit |
| **RX** | Respondents' Exhibit |
| **RPX** | Respondents' Physical Exhibit |
| **RDX** | Respondents' Demonstrative Exhibit |
| **Microsoft** | Microsoft Corp. |
| **Samsung** | Samsung Group, including SEC and SEA |
| **SEA** | Samsung Electronics America, Inc. |
| **SEC** | Samsung Electronics Co., Ltd. |
| **SC** | Source Code |
| **DI Products** | Microsoft DI Products and Samsung DI Products |
| **GPU** | Graphics Processing Unit |
| **CPU** | Central Processing Unit |
| **SOC** | System on a Chip |
| **SEP** | Standard Essential Patent |
| **RAND** | Reasonable and Non-Discriminatory |
| **WD4** | Working Draft 4 |
| **JVT** | Joint Video Team |
| **JCT-VC** | Joint Collaborative Team on Video Coding |
| **1379 ID** | *Certain Video Capable Electronic Devices, Including Computers Streaming Devices, Televisions, Cameras, and Components Modules Thereof,* Inv. No. 337-TA-1379, Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond (January 29, 2025). |
| **1380 ID** | *Certain Video Capable Elec. Devices, Including Computers, Streaming Devices, Televisions, Cameras, and Components and Modules Thereof*, Inv. No. 337-TA-1380, Initial Determination on Violation of Section 337 and |

[redacted]

| Abbreviation | Description |
|---|---|
| | Recommended Determination on Remedy and Bond (Dec. 20, 2024). |
| **CE9** | Core Experiment 9 |
| **AMVP** | Advanced Motion Vector Prediction |
| **OS** | Operating System |
| **ISO/IEC** | Joint standards developed by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) for IT, electronics, and technology |
| **Rusert** | U.S. Patent Application Publication No. 2011/0194609 (RX-1976) |
| **Karczewicz** | U.S. Patent Application Publication No. 2011/0249721 (RX-1977) |
| **PTAB** | Patent Trial and Appeal Board |
| **POR** | Patent Owner's Response |
| **FWD** | Final Written Decision |
| **POSITA** | Person of ordinary skill in the art |
| **SMVPC** | Spatial motion vector prediction candidate |
| **PU** | Prediction unit |
| **IPR** | Inter Partes Review |
| **ITU** | International Telecommunication Union |

[redacted]

## TABLE OF CLAIMS – '321 PATENT

| Claim No. | Claim Language |
|---|---|
| 8[PRE] | A method for decoding a compressed video sequence, the method comprising: |
| 8[A] | decoding from the video sequence an indication of at least one image frame, which is the first image frame, in decoding order, of an independent sequence, wherein all motion-compensated temporal prediction references of the independent sequence refer only to image frames within said independent sequence; |
| 8[B] | starting the decoding of the video sequence from said first image frame of the independent sequence, whereby the video sequence is decoded without prediction from any image frame decoded prior to said first image frame; |
| 8[C] | decoding identifier values for image frames according to a numbering scheme; and |
| 8[D] | resetting the identifier value for the indicated first image frame of the independent sequence. |
| 10[PRE] | A video decoder comprising at least one processor and at least one memory including computer program code, the at least one memory and the computer program code configured to, with the at least one processor, cause the video decoder to decode a compressed video sequence, by causing the video decoder to at least: |
| 10[A] | decode from the video sequence an indication of at least one image frame, which is the first image frame, in decoding order, of an independent sequence, wherein all motion-compensated temporal prediction references of the independent sequence refer only to image frames within said independent sequence; |
| 10[B] | start the decoding of the video sequence from said first image frame of the independent sequence, whereby the video sequence is decoded without prediction from any image frame decoded prior to said first image frame; and |
| 10[C] | decode identifier values for image frames according to a numbering scheme; and |
| 10[D] | reset the identifier value for the indicated first image frame of the independent sequence. |

## TABLE OF CLAIMS – '701 PATENT

| Claim No. | Claim Language |
|---|---|
| 1[PRE] | A method comprising: |
| 1[A] | determining a frequency of occurrence threshold based on an expected frequency of occurrence of syntax elements in a bit stream; |

[redacted]

| Claim No. | Claim Language |
|---|---|
| 1[B] | categorizing a plurality of syntax elements of video content into first and second categories based on the frequency of occurrence threshold, wherein syntax elements which occur greater than the frequency of occurrence threshold are categorized into the second category and syntax elements which occur less than the frequency of occurrence are categorized into the first category; |
| 1[C] | entropy coding symbols that correspond to the first category of syntax elements and that have been subjected to a context update; and |
| 1[D] | entropy coding symbols that correspond to the second category of syntax elements and that have bypassed context updating. |
| 6 | A method according to claim 1 wherein categorizing the plurality of syntax elements comprises categorizing the plurality of syntax elements based on a relationship of the frequency of occurrence of the syntax elements to a predefined threshold. |
| 8[PRE] | An apparatus comprising at least one processor and at least one memory including computer program code, the at least one memory and the computer program code configured to, with the processor, cause the apparatus to at least: |
| 8[A] | determine a frequency of occurrence threshold based on an expected frequency of occurrence of syntax elements in a bit stream; |
| 8[B] | categorize a plurality of syntax elements of video content into first and second categories based on the frequency of occurrence threshold, wherein syntax elements which occur greater than the frequency of occurrence threshold are categorized into the second category and syntax elements which occur less than the frequency of occurrence are categorized into the first category; |
| 8[C] | entropy code symbols that correspond to the first category of syntax elements and that have been subjected to a context update; and |
| 8[D] | entropy code symbols that correspond to the second category of syntax elements and that have bypassed context updating. |
| 13 | An apparatus according to claim 8 wherein the at least one memory and the computer program code are configured to, with the processor, cause the apparatus to categorize the plurality of syntax elements by categorizing the plurality of syntax elements based on a relationship of the frequency of occurrence of the syntax elements to a predefined threshold. |

**TABLE OF CLAIMS – '714 PATENT**

| Claim No. | Claim Language |
|---|---|
| 1[A] | A method comprising: |

[redacted]

| Claim No. | Claim Language |
|---|---|
| 1[B] | selecting a first spatial motion vector prediction candidate from a set of spatial motion vector prediction candidates for a block of pixels as a potential spatial motion vector prediction candidate to be included in a motion vector prediction list for a prediction unit of the block of pixels, where the motion vector prediction list comprises motion information of the spatial motion vector prediction candidates and is utilized to identify motion vector prediction candidates of which one spatial motion vector prediction candidate from the motion vector prediction list is signaled as the motion information for the prediction unit; |
| 1[C] | determining a subset of spatial motion vector prediction candidates based on a location of the block associated with the first spatial motion vector prediction candidate; |
| 1[D] | comparing motion information of the first spatial motion vector prediction candidate with motion information of spatial motion vector prediction candidates in the determined subset of spatial motion vector prediction candidates without making a comparison of each pair from the set of spatial motion vector prediction candidates; |
| 1[E] | determining to include or exclude the first spatial motion vector prediction candidate in the motion vector prediction list based on the comparing; and |
| 1[F] | causing information identifying the one spatial motion vector prediction candidate from the motion vector prediction list to be transmitted to a decoder or to be stored. |
| 9[A] | A method comprising: |
| 9[B] | selecting a first spatial motion vector prediction candidate from a set of spatial motion vector prediction candidates for an encoded block of pixels as a potential spatial motion vector prediction candidate to be included in a motion vector prediction list for a prediction unit of the encoded block of pixels, where the motion vector prediction list comprises motion information of the spatial motion vector prediction candidates; |
| 9[C] | determining a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; |
| 9[D] | comparing motion information of the first spatial motion vector prediction candidate with motion information of another spatial motion vector prediction candidate of the set of spatial motion vector prediction candidates without making a comparison of each possible candidate pair from the set of spatial motion vector prediction candidates; |
| 9[E] | determining to include or exclude the first spatial motion vector prediction candidate in the motion vector prediction list based on the comparing; and |
| 9[F] | selecting a spatial motion vector prediction candidate from the motion vector prediction list for use in decoding the encoded block of pixels, wherein the spatial motion vector prediction candidate is selected from the motion vector |

[redacted]

| Claim No. | Claim Language |
|---|---|
| | prediction list using information that was received identifying a respective spatial motion vector prediction candidate from the motion vector prediction list constructed by an encoder. |
| **15[A]** | An apparatus comprising a processor and a memory including computer program code, the memory and the computer program code configured to, with the processor, cause the apparatus to: |
| **15[B]** | select a first spatial motion vector prediction candidate from a set of spatial motion vector prediction candidates for a block of pixels as a potential spatial motion vector prediction candidate to be included in a motion vector prediction list for a prediction unit of the block of pixels, where the motion vector prediction list comprises motion information of the spatial motion vector prediction candidates and is utilized to identify motion vector prediction candidates of which one spatial motion vector prediction candidate from the motion vector prediction list is signaled as the motion information for the prediction unit; |
| **15[C]** | determine a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; |
| **15[D]** | compare motion information of the first spatial motion vector prediction candidate with motion information of the spatial motion vector prediction candidate in the determined subset of spatial motion vector prediction candidates without making a comparison of each possible candidate pair from the set of spatial motion vector prediction candidates; |
| **15[E]** | determine to include or exclude the first spatial motion vector prediction candidate in the motion vector prediction list based on comparison of the motion information of the first spatial motion vector candidate with motion information of the spatial motion vector prediction candidate; and |
| **15[F]** | cause information identifying the one spatial motion vector prediction candidate from the motion vector prediction list to be transmitted to a decoder or to be stored. |
| **23[A]** | An apparatus comprising a processor and a memory including computer program code, the memory and the computer program code configured to, with the processor, cause the apparatus to: |
| **23[B]** | select a first spatial motion vector prediction candidate from a set of spatial motion vector prediction candidates for an encoded block of pixels as a potential spatial motion vector prediction candidate to be included in a motion vector prediction list for a prediction unit of the encoded block of pixels, where the motion vector prediction list comprises motion information of the spatial motion vector prediction candidates; |
| **23[C]** | determine a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; |

[redacted]

| Claim No. | Claim Language |
|---|---|
| 23[D] | compare motion information of the first spatial motion vector prediction candidate with motion information of the spatial motion vector prediction candidate in the determined subset of spatial motion vector prediction candidates without making a comparison of each possible candidate pair from the set of spatial motion vector prediction candidates; |
| 23[E] | determine to include or exclude the first spatial motion vector prediction candidate in the motion vector prediction list based on comparison of the motion information of the first spatial motion vector candidate with motion information of the spatial motion vector prediction candidate; and |
| 23[F] | select a spatial motion vector prediction candidate from the motion vector prediction list for use in decoding the encoded block of pixels, wherein the spatial motion vector prediction candidate is selected from the motion vector prediction list using information that was received identifying a respective spatial motion vector prediction candidate from the motion vector prediction list constructed by an encoder. |

**TABLE OF CLAIMS – '267 PATENT**

| Claim No. | Claim Language |
|---|---|
| 1[A] | A method for encoding a block of pixels, the method comprising: |
| 1[B] | determining, for a current block, a first reference block based on a first motion vector and a second reference block based on a second motion vector, wherein the pixels of the current block, the first reference block, and the second reference block have values with a first precision; |
| 1[C] | using said first reference block to obtain a first prediction, said first prediction having a second precision, which is higher than said first precision; |
| 1[D] | using said second reference block to obtain a second prediction, said second prediction having the second precision; |
| 1[E] | obtaining a combined prediction based at least partly upon said first prediction and said second prediction; |
| 1[F] | decreasing a precision of said combined prediction by shifting bits of the combined prediction to the right; and |
| 1[G] | encoding residual data in a bitstream, wherein the residual data is determined based upon a difference between the combined prediction and the block of pixels. |
| 2 | The method according to claim 1, wherein in an instance in which said first motion vector points to a subpixel, said first prediction is obtained by interpolation using pixel values of said first reference block. |
| 7[A] | An apparatus for encoding a block of pixels, the apparatus comprising: |

[redacted]

| Claim No. | Claim Language |
|---|---|
| 7[B] | at least one processor and at least one memory including computer program code, the at least one memory and computer program code configured to, with the at least one processor, cause the apparatus to: |
| 7[C] | determine, for a current block, a first reference block based on a first motion vector and a second reference block based on a second motion vector, wherein the pixels of the current block, the first reference block, and the second reference block have values with a first precision; |
| 7[D] | use said first reference block to obtain a first prediction, said first prediction having a second precision, which is higher than said first precision; |
| 7[E] | use said second reference block to obtain a second prediction, said second prediction having the second precision; |
| 7[F] | obtain a combined prediction based at least partly upon said first prediction and said second prediction; |
| 7[G] | decrease a precision of said combined prediction by shifting bits of the combined prediction to the right; and |
| 7[H] | encode residual data in a bitstream, wherein the residual data is determined based upon a difference between the combined prediction and the block of pixels. |
| 8 | The apparatus according to claim 7, wherein in an instance in which said first motion vector points to a subpixel, said first prediction is obtained by interpolation using pixel values of said first reference block. |
| 19[A] | A method for decoding a block of pixels, the method comprising: |
| 19[B] | determining, for a current block, a first reference block based on a first motion vector and a second reference block based on a second motion vector, wherein the pixels of the current block, the first reference block, and the second reference block have values with a first precision; |
| 19[C] | using said first reference block to obtain a first prediction, said first prediction having a second precision, which is higher than said first precision; |
| 19[D] | using said second reference block to obtain a second prediction, said second prediction having the second precision; |
| 19[E] | obtaining a combined prediction based at least partly upon said first prediction and said second prediction; |
| 19[F] | decreasing a precision of said combined prediction by shifting bits of the combined prediction to the right; and |
| 19[G] | reconstructing the block of pixels based on the combined prediction. |
| 20 | The method according to claim 19, wherein in an instance in which said first motion vector points to a subpixel, said first prediction is obtained by interpolation using pixel values of said first reference block. |
| 25[A] | An apparatus for decoding a block of pixels, the apparatus comprising: |

[redacted]

| Claim No. | Claim Language |
|---|---|
| **25[B]** | at least one processor and at least one memory including computer program code, the at least one memory and computer program code configured to, with the at least one processor, cause the apparatus to: |
| **25[C]** | determine, for a current block, a first reference block based on a first motion vector and a second reference block based on a second motion vector, wherein the pixels of the current block, the first reference block, and the second reference block have values with a first precision; |
| **25[D]** | use said first reference block to obtain a first prediction, said first prediction having a second precision, which is higher than said first precision; |
| **25[E]** | use said second reference block to obtain a second prediction, said second prediction having the second precision; |
| **25[F]** | obtain a combined prediction based at least partly upon said first prediction and said second prediction; |
| **25[G]** | decrease a precision of said combined prediction by shifting bits of the combined prediction to the right; and |
| **25[H]** | reconstruct the block of pixels based on the combined prediction. |
| **26** | The apparatus according to claim 25, wherein in an instance in which said first motion vector points to a subpixel, said first prediction is obtained by interpolation using pixel values of said first reference block. |

[redacted]

## I. INTRODUCTION

Respondents' initial post-hearing brief posits a hodge-podge of legally-meritless defenses that they failed to support with evidence at the hearing.

Respondents' theories of invalidity fail. The '701 Asserted Claims are valid. Respondents do not challenge this.

The '321 Asserted Claims are valid. Respondents raise three invalidity grounds: Modified MPEG-1, MPEG-1 in combination with Adolph, and VLC Version 0.7.2. The first two grounds fail to disclose key limitations. As for the last ground, VLC Version 0.7.2 is not prior art because the '321 Patent's priority date is supported by its Finnish application. In fact, VLC Version 0.7.2 includes the same IDR frame functionality that Nokia contributed to the H.264 Standard.

The '714 Asserted Claims are valid. Respondents raise one invalidity ground: Rusert combined with Karczewicz ("Rusert Combination"). The Rusert Combination does not disclose key limitations. Indeed, the Rusert Combination amounts to the same technique that was rejected by the H.265 Standard in favor of Nokia's improved merge mode contribution. Moreover, Respondents fail to explain how a POSITA would have combined Rusert and Karczewicz and that a POSITA would have been motivated to do so.

The '267 Asserted Claims are valid. Respondents raise two invalidity grounds (albeit through several alternative interpretations of the references): Walker and Walker in view of Srinivasan. Neither ground discloses maintaining a higher precision for the claimed first and second predictions. This is a key aspect of the claims and a key reason why Nokia's contribution to the H.265 Standard was able to unify the different High Efficiency and Low Complexity modes being developed at the time. Moreover, a POSITA would not have a reasonable expectation of success in combining Walker and Srinivasan as Respondents contend.

[redacted]

Respondents' redesign arguments expose a fundamental inconsistency. Respondents contend the redesigns are ripe for adjudication, and they admit that the devices all work the same, but when the evidence showed that existing publicly available software updates reactivate the accused functionality, Respondents contend the redesigns are just "prototypes" such that later, currently unavailable devices will not have available updates. Respondents cannot be permitted to have it both ways.

Respondents' arguments on remedy and public interest are equally meritless. The evidence revealed that principal claim raised by Respondents—that the ITC should defer to the UK for a RAND rate setting—is an attempt to avoid liability after years of hold-out. The ITC's mandate does not permit—and Respondents' hold-out offers of only fractions of pennies in the face of industry-accepted licensing rates for Nokia's video patents provide no justification for—the Commission to delay enforcement.

Respondents' requests for exemptions or tailored remedial orders based on the statutory public interest factors also find no factual support. It is undisputed that the personal computer and tablet industry is highly competitive with alternative, substitutable products available at every price point and across every functional category. The education segment is no exception, and in fact is structured with flexibility in mind. Respondents' attempt to artificially segment the market into smaller and smaller subsegments does not reflect market realities, and the consumer harm they allege is—by their own flawed metric—de minimis. Simply put, Respondents fail to connect any potential impact to an enumerated public interest harm.

Finally, Respondents' claims of equitable estoppel, waiver, or license are entirely unsupported in law or fact. Nokia complied with all ITU, JVT, and JCT-VC policies and has

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always been a willing licensor. Respondents' frivolous claims that they are already licensed or that Nokia exhausted its rights are contrary to their own behavior and every fact in the record.

Because Respondents' meritless defenses fail, the ALJ should find a violation and recommend an exclusion order and cease and desist order without delay.

## II. U.S. PATENT NO. 8,050,321

Respondents advance three grounds: (1) a modified version of MPEG-1; (2) MPEG-1 combined with U.S. Patent Publication No. 2001/0048805A1 ("Adolph"); and (3) VideoLAN Client ("VLC") 0.7.2. Each ground fails on the merits.

For the first two grounds, the disputed issues are (a) whether MPEG-1's closed_gop flag constitutes an "indication of at least one image frame, which is the first image frame, in decoding order, of an independent sequence" (limitations 8[a]/10[a]); and (b) whether MPEG-1—modified or combined with Adolph—teaches or renders obvious "resetting the identifier value for the indicated first image frame of the independent sequence" (limitations 8[d]/10[d]).

The answer to both questions is "no." On the indication limitation, the closed_gop flag is a GOP-level property that tells a decoder whether a group of pictures is open or closed—nothing more. The closed_gop flag does not identify any frame, let alone indicate which frame is first in decoding order as the claims require. As to the resetting limitation, there is no dispute that MPEG-1 does not teach a decoder resetting any identifier value—Respondents themselves acknowledge that MPEG-1 does not expressly teach that a decoder would reset the temporal reference. The encoder, not the decoder, assigns temporal_reference values in the bitstream. Respondents instead propose modifying the MPEG-1 Standard to manufacture what the prior art lacks, but their proposed modifications are hindsight-driven, technically unsound, and would produce a decoder that is incompatible with the very standard on which their invalidity theory depends. Respondents' Adolph-based ground fares no better. Adolph's IP counter is an internal tally of picture types used

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for display ordering—not identifier values decoded from the bitstream and not an indication that triggers a reset as the claims require.

Respondents' VLC 0.7.2 ground is contingent on the '321 Patent losing its January 23, 2002, priority date. As Respondents would have it, under Respondents' proposed claim constructions, the Finnish Application would not support priority, pushing the effective date to January 25, 2006, making VLC 0.7.2 (which includes Nokia's contributions to the H.264 Standard) prior art. But it appears uncontested that, under Nokia's and Staff's constructions, the '321 Patent retains its priority date, VLC version 0.7.2 is not prior art, and the invalidity challenge collapses.

### A. Background of the Asserted References

#### 1. MPEG-1

MPEG-1 (ISO/IEC 11172-2) is a video coding standard first published in 1993. (Tr. (Richardson) at 1957:6-9). Respondents rely on three concepts from MPEG-1: "The concept of a temporal reference, the concept of closed and open groups of pictures, or GOPs, and the concept of neighboring reference pictures." (Tr. (Richardson) at 1957:10-15). These concepts govern the display and decoding order of different picture types. The relevant picture types are: (i) I-pictures, coded without reference to other pictures; (ii) P-pictures, which use motion-compensated prediction from a prior I- or P-picture; and (iii) B-pictures, which use motion-compensated prediction from both past and future I- or P-pictures. (JX-0061.071 (MPEG-1) at § D.2.3; Tr. (Hemami) at 1075:19-1076:16; Tr. (Richardson) at 1964:10:12 ("Within that group of pictures are a number of coded pictures, which can be of types I, P, and B[.]")). Because B-pictures may depend on future reference pictures, decoding order ("bitstream order" in MPEG-1) may differ from display order. (JX-0061.071 (MPEG-1) at § D.2.3; Tr. (Hemami) at 1076:17-1078:7). To track display order, an encoder assigns each picture a temporal_reference value that is included in the picture header and decoded from the bitstream. (JX-0061.044, .087 (MPEG-1) at §§ 2.4.3.4,

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D.5.3.2; *see also* Tr. (Richardson) at 2002:1-5 ("In MPEG-1 temporal reference in a compliant bitstream must be equal to zero for the first picture in display order of a group of pictures"); *cf.* Tr. (Hemami) at 1088:10-18 ("And temporal reference is reset to 0 at the start of the GOP.")).

MPEG-1 organizes pictures into Group of Pictures ("GOPs") defined as "[a] series of one or more coded pictures intended to assist random access." (JX-0061.023 (MPEG-1) at § 2.1.71; Tr. (Hemami) at 1078:14-1079:19). A "closed GOP" is a type of GOP that is "encoded without motion vectors pointing to the previous group of pictures" and can be decoded without using decoded pictures from the prior GOP for motion compensation. (JX-0061.043 (MPEG-1) at § 2.4.3.3; Tr. (Hemami) at 1079:20-1080:5). The GOP header—a set of values at the GOP layer applying to the whole GOP, not to any individual picture—contains a single-bit closed_gop flag indicating whether the GOP is open or closed. (JX-0061.037, .043 (MPEG-1) at §§ 2.4.2.4, 2.4.3.3; Tr. (Hemami) at 1083:2-18; Tr. (Richardson) at 1963:22-1964:2).

**2. Adolph**

Adolph was filed on June 9, 1998, and published on December 6, 2001. (JX-0695.001 (Adolph)). Adolph "generally describes a device that carries out standards-compliant video decoding of MPEG-1 and MPEG-2 video" and describes an additional method for maintaining correct display order when transmission errors corrupt or omit GOP header information. (Tr. (Richardson) at 1959:25-1960:12; *see also* JX-0695.001 (Adolph) at Abstract). Adolph describes two internal counters that are not part of the MPEG-1 or MPEG-2 decoding process: an "IP counter" that increments each time the decoder receives an I- or P-picture, and a "B counter" that increments for each B-picture. (*See* Tr. (Richardson) at 1959:25-1960:12, 1970:8-16; JX-0695.010 (Adolph) at ¶ [0030]). Both counters reset when a GOP header is correctly found. (Tr. (Richardson) at 1971:4-13; JX-0695.010 (Adolph) at ¶ [0030]).

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### 3. VLC 0.7.2

VLC 0.7.2 was available as of May 21, 2004. (RX-4032.0001 (Wayback Machine, VLC Homepage)). VLC 0.7.2 implements H.264 decoding, including the functionality the '321 Patent's inventor contributed to the H.264 Standard. (RX-4032.0002 (Wayback Machine, VLC Homepage); Tr. (Richardson) at 1973:1-7 ("[VLC] includes an implementation of H.264 . . . . And H.264, in my view, includes the contribution and invention of the '321 patent.")). Whether VLC 0.7.2 qualifies as prior art depends entirely on the '321 Patent's priority date. Respondents' expert conceded she only challenged priority under Respondents' proposed construction of "reset[ting]." (Tr. (Hemami) at 1102:25-1103:18 ("**Q.** . . . did Dr. Richardson only apply Nokia and Staff's proposed construction for reset and resetting? **A.** Yes. . . . **Q.** . . . is there any additional prior art that invalidates the '321 patent under Respondents' proposed construction and priority date? **A.** Yes . . . ."); *see also* RBr. at 9). If Nokia's or Staff's proposed constructions of "reset[ting]" are adopted, the '321 Patent is entitled to its January 23, 2002 priority date, and VLC 0.7.2 is not prior art. (Tr. (Richardson) at 143:23-144:16, 168:2-6, 1961:24-1962:1 ("**Q.** Do you agree that VLC version 0.7.2 is prior art to the '321 Patent? **A.** No."), 1972:12-1974:16; Cbr. at § IV.C).

## B. The '321 Patent Provides a Solution for a Random Access Problem That Arose Post-MPEG-1

The '321 Patent addresses a specific challenge that arose during the development of the H.264 Standard: how to enable random access in the context of reference picture selection. (JX-0010.011 ('321 Patent) at 3:37-61; Tr. (Richardson) at 1953:1-8 ("The '321 patent was trying to address a problem particularly with what was called reference picture selection, which was a flexible method of picking reference pictures for prediction, which was considered as part of the H.264 standard development.")).

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Before the '321 Patent, standards like MPEG-1 relied on a rigid prediction structure in which each frame could reference only the closest neighboring I- or P-picture, and random access could be achieved simply by searching for the next GOP. (*See* CBr. at § IV.A.1; Tr. (Richardson) at 1953:13-24 (describing the "classic group of pictures prediction structure" shown in CDX-11.098)). During H.264 Standard development, a more flexible prediction structure called "reference picture selection" was adopted, allowing any block in a predicted picture to reference any one of a set of previously coded pictures—including "long term" reference pictures coded many tens or hundreds of frames earlier. (*See* CBr. at § IV.A.1; Tr. (Richardson) at 1954:1-17; JX-0010.011 ('321 Patent) at 3:37-61). Reference picture selection did not exist in MPEG-1 or MPEG-2. (*See* Tr. (Richardson) at 1953:1-1954:17). This flexibility improved compression performance but introduced new random access challenges that the conventional GOP structure could no longer address. (*See* CBr. at § IV.A.1; Tr. (Richardson) at 1954:1-17). The '321 Patent's inventor, Dr. Miska Hannuksela, recognized these challenges and proposed a new signaling mechanism—what became the IDR picture—to enable random access in the context of reference picture selection. (*See* CBr. at § IV.A.1; Tr. (Richardson) at 141:21-142:6, 1954:19-1955:4, 1955:6-1956:18 (describing Dr. Hannuksela's series of contributions to the H.264 Standards); *see also* JX-0024C.008–.009 (Hannuksela 1448 Designations) at 24:24–25, 25:5–9 ("**Q.** Did you invent an IDR picture? **A.** I believe so … **Q.** Okay. And what is your basis for making this statement? **A.** I proposed it to the standard, and it was adopted based on my proposal contribution.")).

Reference picture selection created a problem for random access: When playback begins from a random point, "discontinuity typically occurs in the image numbering. The decoder typically interprets this as unintentional loss of image frames and unnecessarily tries to reconstruct the image frames suspected as lost." (JX-0010.015 ('321 Patent) at 11:20-25; Tr. (Richardson) at

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1953:1-12). This problem does not arise in a fixed-reference system like MPEG-1, where the rigid GOP structure inherently limited prediction dependencies. (*See* Tr. (Richardson) at 1953:13-24). To solve it, the '321 Patent teaches that "the decoder preferably sets the identifier of the first image frame, preferably an I-frame, of the independently decodable sub-sequence" at zero. (JX-0010.015 ('321 Patent) at 11:37-40; Tr. (Richardson) at 1954:19-1955:4). This decoder-side resetting of the identifier value to restart the numbering scheme is a central aspect of the invention—and it is one thing MPEG-1 does not teach. (Tr. (Richardson) at 1954:19-1955:4, 2001:23-25 ("[T]he MPEG-1 standard simply does not disclose a decoder resetting temporal reference to zero.")).

One part of the invention is "to determine an initiation picture in an independently decodable group of pictures, whereby in the decoding phase any picture prior to said initiation picture is defined as unusable for reference." (JX-0010.011 ('321 Patent) at 4:31-35; *see* Tr. (Richardson) at 1954:1-1955:4). To practice the claims, the decoder must both receive an indication of a specific image frame within a sequence and reset its identifier value—functionalities the prior art does not provide. (*See* Tr. (Richardson) at 1965:7-16 ("**Q.** … If the decoder receives a closed_gop_flag, does it know about the existence of any particular image frame? **A.** No, it does not. … And so those pictures might not even exist.")).

### C. MPEG-1 Does Not Render the '321 Patent Obvious

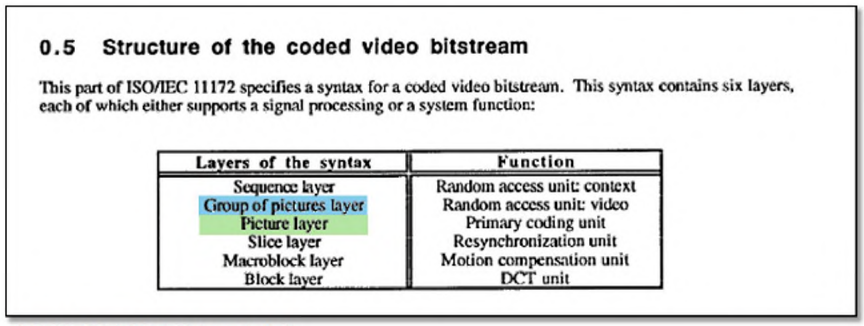
#### 1. Modified MPEG-1 Does Not Disclose 8[a]/10[a]

The central question for limitations 8[a]/10[a] is whether MPEG-1's closed_gop flag constitutes "decoding from the video sequence an indication of at least one image frame, which is the first image frame, in decoding order, of an independent sequence." It does not, for three independent reasons. (Tr. (Richardson) at 1963:7-1965:16).

First, the closed_gop flag is a GOP-layer element that does not indicate an image frame. (*See* Tr. (Richardson) at 1964:4-1965:6; CDX-11.120 (Richardson Reb. Dem.) (depicting the GOP

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layer in JX-0061.037 (MPEG-1))). MPEG-1's bitstream syntax is organized hierarchically into six layers, each serving a distinct function. (JX-0061.016 (MPEG-1) at § 0.5; Tr. (Richardson) at 1964:4-1965:6 (explaining the syntax structure and the position of the closed_gop flag within it)).



**0.5 Structure of the coded video bitstream**

This part of ISO/IEC 11172 specifies a syntax for a coded video bitstream. This syntax contains six layers, each of which either supports a signal processing or a system function:

| Layers of the syntax | Function |
|---|---|
| Sequence layer | Random access unit: context |
| Group of pictures layer | Random access unit: video |
| Picture layer | Primary coding unit |
| Slice layer | Resynchronization unit |
| Macroblock layer | Motion compensation unit |
| Block layer | DCT unit |

JX-0061.016 (MPEG-1) (annotated)

(CDX-11.122 (Richardson Reb. Dem.) (illustrating the distinction between the picture layer header, which pertains to individual frames, and the "group of pictures layer") (cropped)). The GOP layer contains syntax elements that convey properties of an entire group of coded pictures. (Tr. (Richardson) at 1964:4-1965:6). The picture layer, by contrast, contains all the coded information for one picture and includes syntax elements (e.g., picture_coding_type) associated with individual frames. (*Id.*). The closed_gop flag only indicates a group of pictures. (*See id.* at 1963:22-1964:18 ("The closed_gop_flag in MPEG-1 is, at most, information about a group of pictures, not about any one picture.")). The informational distinction between indications of groups of pictures and indications of image frames is dispositive. The closed_gop flag tells the decoder only that the following GOP is open or closed. (*Id.* at 1963:22-1964:2). In other words, it "doesn't do what the claim requires … which is to indicate a particular image frame." (*Id.* at 1964:16-18).

Second, Respondents' reading reads "a first image frame" out of the claim language. (*See id.* at 1999:7-11). A claim must be interpreted to give effect to all its terms. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). The MPEG-1 GOP-layer flag communicates a property of the entire group of pictures; picture-layer elements communicate properties of individual frames. (Tr. (Richardson) at 1963:22-1965:6). Dr. Richardson confirmed even a GOP

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consisting of a single I-picture does not change this analysis, because the GOP header "tells us nothing at all about the size of the group of pictures." (*Id.* at 1964:7-18, 2035:7-21). Regardless of GOP size, the closed_gop flag remains a GOP-level property that does not identify any particular frame—let alone the "first image frame" the claims require. (*Id.* at 1963:22-1965:6, 2035:7-21).

MPEG-1 itself undermines Respondents' assertion. MPEG-1 provides picture layer elements, not GOP layer elements, that indicate specific frames. (*Id.* at 1964:20-1965:6 ("**Q.** Does MPEG-1 have other indications for image frames that Respondents haven't identified here? **A.** There is information about an image frame in MPEG-1, and each image frame has an associated picture layer header[.]")). If the closed_gop flag were itself an indication of the first image frame, as Respondents contend, then MPEG-1's separate picture-layer elements for identifying individual frames (e.g., picture_coding_type) would be superfluous. None of these picture layer or GOP layer elements satisfy the claimed indication because MPEG-1 did not need such an indication; its rigid prediction structure allowed random access by searching for start codes, without affirmatively indicating the first frame of an independent sequence as the '321 Patent claims require. (JX-0061.120 (MPEG-1) at § D.7.1 ("If playback begins from a random point . . . the decoder should discard all the bits until it finds a sequence start code, a group of pictures start code, or a picture start code which introduces an I-picture."); *cf.* Tr. (Richardson) at 1953:1-1954:17 (explaining how reference pictures were handled in a rigid structure in MPEG-1, and that when reference pictures became more flexible with the advent of reference picture selection, the invention of the '321 patent was needed to maintain the decoder's capability for random access)).

Third, the closed_gop flag does not provide the decoder with certainty about any particular image frame. Dr. Richardson was unequivocal on this point. When asked whether the decoder, upon receiving a closed_gop flag, knows "about the existence of any particular image frame[,]"

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Dr. Richardson answered: "No, it does not. It just knows something about the GOP that it expects to follow the current GOP header." (*Id.* at 1965:7-16). MPEG-1 specifies that a "group of pictures shall contain one or more I-pictures," meaning there is no upper bound on the number of I-pictures within a GOP. (JX-0061.033 (MPEG-1) at § 2.4.1). The closed_gop flag cannot and does not identify or indicate a particular I-picture that is the first image frame in decoding order. (Tr. (Richardson) at 1964:4-18, 1965:7-16).

Various real-world conditions—e.g., transmission errors, bit errors, packet loss, truncated files—underscore this point: a decoder may encounter no frames at all after the GOP header. As Dr. Richardson explained, "there are many situations where there could be all sorts of things happening, such as errors during transmission or reading errors if this is a stored media. And so those pictures might not even exist." (*Id.* at 1965:7-16). This "error scenario" illustrates the fundamental deficiency that the closed_gop flag, by design, does not indicate any particular frame; it indicates a property of a collection of frames. Respondents' attorney-based counter-arguments do not save the day. (*See* RBr. at 16). Respondents assert that if transmission errors could undermine an indication, then no syntax element could ever qualify. (*Id.*). This misses the point. Nokia does not argue that an indication must be error proof. Nokia's point is that the closed_gop flag does not indicate any particular frame. The "error scenario" merely illustrates this design-level deficiency. By contrast, the H.264 indication Nokia identifies (nal_unit_type = 5 for an IDR picture) directly and necessarily identifies the picture type regardless of what follows in the bitstream. (*See* Tr. (Chrissan) at 396:10-21). A bit error could corrupt any syntax element, but that does not change the fact that nal_unit_type = 5 is designed to identify a specific picture type, while the closed_gop flag is not. (*See* Tr. (Richardson) at 1964:4-18, 1965:7-16).

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Respondents' principal response to Nokia's limitations 8[a]/10[a] position is that it "is identical to one already rejected by ALJ Elliot in the 1380 investigation." (RBr. at 5 (citing RX-1945.0056)). It is not. The 1380 ID was decided on a materially different evidentiary record and addressed different issues. (*See* RX-1945.0056-.0057 (1380 ID)). The Federal Circuit agrees that additional testimony provided in an administrative proceeding is a permissible basis for a finding of fact contrary to a determination in a prior adjudication. *See Novartis AG v. Noven Pharms., Inc.*, 853 F.3d 1289, 1293-94 (Fed. Cir. 2017) ("It is unsurprising that different records may lead to different findings and conclusions."). It is Respondents' burden to prove invalidity by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95 (2011). The non-preclusive findings in the 1380 ID, made on a different record, cannot relieve Respondents of their burden. Respondents do not meet their burden on this record.

In this Investigation, Dr. Richardson's testimony goes beyond what was available in the 1380 Investigation. Dr. Richardson addressed the GOP-layer versus picture-layer distinction, the superfluity of MPEG-1's picture-layer elements, the lack of decoder certainty, and the fundamental difference between indicating a property of a group and indicating a particular image frame. (*See* Tr. (Richardson) at 1962:18-1965:16). Dr. Richardson further illustrated these points by showing exactly where the closed_gop flag fits in MPEG-1's hierarchical syntax and why it cannot serve as an indication of any particular frame. (CDX-11.120-22 (Richardson Reb. Dem.)). The 1380 Investigation did not have the benefit of Dr. Richardson's testimony explaining why the closed_gop flag operates at the GOP layer rather than the picture layer, why treating the flag as an indication of a frame would render MPEG-1's picture-layer syntax superfluous, and why a decoder that receives the flag does not thereby learn about the existence of any particular image frame. (Tr.

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(Richardson) at 1963:22-1965:16). Based on the record in this Investigation, MPEG-1 does not teach the limitations of claims 8 and 10 of the '321 Patent.

Additionally, Respondents attempt to equate sequential positioning in the bitstream with the claimed "indication," arguing that because a frame necessarily follows the closed_gop flag, the flag must indicate that frame. (*See* RBr. at 14-17). But the claims do not read on mere spatial proximity. The fact that a frame follows a flag in a bitstream does not mean the flag indicates that frame. (Tr. (Richardson) at 1965:7-16 (explaining that the decoder upon receiving the closed_gop flag does not know "about the existence of any particular image frame")). By Respondents' logic, any syntax element preceding a frame in a bitstream would be an "indication" of that frame—a result no POSITA would accept. (*See id.*). The claims require that the decoder receive an indication identifying which frame is the first image frame of an independent sequence, not merely that some frame appears next in the bitstream.

Respondents also mischaracterize Nokia's position as attempting to restrict where in the bitstream an "indication" may appear. (RBr. at 15-16). Nokia's argument is not about location. It is that the closed_gop flag, wherever it resides, does not indicate any particular image frame and therefore cannot satisfy the claims. (Tr. (Richardson) at 1963:22-1965:6 (explaining that the closed_gop flag operates at the GOP layer and does not indicate any particular frame regardless of its location in the bitstream)).

**2. Modified MPEG-1 Does Not Disclose 8[d]/10[d]**

Limitations (8[d]/10[d]) require "resetting the identifier value for the indicated first image frame of the independent sequence." This resetting must be performed by a decoder, not an encoder. (Tr. (Richardson) at 1963:3-5 ("The '321 Patent requires the decoder—not the encoder—to reset the identifier value.")). It is undisputed that MPEG-1 does not teach decoder-side resetting. (*See* RBr. at 17-18 ("MPEG-1 does not expressly teach that a *decoder* would reset the temporal

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reference . . .” (emphasis in original)); Tr. (Richardson) at 2001:17-25 (“[T]he MPEG-1 standard simply does not disclose a decoder resetting temporal reference . . .”)). Respondents propose modifying MPEG-1 to manufacture what the prior art lacks. (*See* RBr. at 18-22).

Both the claims and the specification of the ’321 Patent are clear on the fact that the resetting is handled by the decoder: “Consequently, when activated at a random point, the decoder preferably sets the identifier of the first image frame, preferably an I-frame, of the independently decodable sub-sequence.” (JX-0010.015 (’321 Patent) at 11:26-40; *see also* JX-0010.021 at 24:9-10 (reciting limitation 8[d]), 24:31-32 (reciting limitation 10[d])). Respondents’ proposed modifications to MPEG-1 do not cure this deficiency.

As a threshold matter, Respondents propose starting with an MPEG-1-compliant decoder and creating a modified, non-compliant decoder that can only decode closed GOPs without leading B-frames (the configuration shown in MPEG-1 Figure D.18(a)). (RBr. at 18-20; Tr. (Hemami) at 1092:23-1093:4). Respondents then propose having the decoder automatically reset temporal_reference to zero for the first frame following a closed_gop flag set to 1, using one of two methods. (RBr. at 20-22; Tr. (Hemami) at 1089:9-1094:20). Neither the threshold modification nor the proposed resetting methods withstand scrutiny.

There is no motivation to create a non-compliant decoder that can only decode closed GOPs without leading B-frames. Such a decoder could not decode every valid MPEG-1 bitstream—it could not handle open GOPs or bitstreams with leading B-pictures—and therefore “[t]hat’s no longer an MPEG-1 decoder.” (Tr. (Richardson) at 1968:19-1969:12). Dr. Richardson further explained that the same results can be achieved without any modification to the standard: A compliant, unmodified encoder and decoder can encode and decode only closed GOP structures simply by selecting appropriate encoding parameters—“there’s no need to rewrite or redesign a

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decoder so that it's not standard-compliant." (*Id.* at 1969:5-19). What Respondents allege is desirable—omitting leading B-frames from closed_GOPs—can be obtained using unmodified, off-the-shelf encoders and decoders.

Respondents' proposal would also require coordinated modifications to both the encoder and decoder, restricting the encoder to a narrow subset of MPEG-1-compliant bitstreams while rendering the decoder unable to decode bitstreams conforming to the broader MPEG-1 Standard. (*Id.* at 1968:19-1969:19). Any such modification would undermine a fundamental benefit of a decoder's standards compliance: interoperability. As Dr. Richardson testified, "there's no need to rewrite or redesign a decoder so that it's not standard-compliant. I genuinely don't understand why one would [limit the decoder in such a way]." (*Id.* at 1969:5-19). Eliminating closed GOPs with leading B-frames would also degrade compression efficiency by forcing more frequent I-frames and reducing the use of bit-efficient B-pictures—increasing bitrate without commensurate quality gains, contrary to MPEG-1's design goals. (*See id.* at 167:10-14). Dr. Richardson characterized the entire proposal as hindsight-driven: "In my view, Dr. Hemami's rewriting what's disclosed in MPEG-1 using what she is looking for in the '321 patent as a roadmap." (*Id.* at 1967:15-17). A POSITA would not have deviated from a well-understood standard like MPEG-1 without a compelling technical reason.

Even assuming Respondents could clear that threshold, their proposed "resetting" methods independently fail. Dr. Richardson identified specific technical problems with both alleged methods.[1] (Tr. (Richardson) at 1966:7-1968:18). Regarding Method (i), Dr. Richardson testified:

[1] Respondents' Motion to Strike Dr. Richardson's testimony on the proposed resetting methods should be denied for the reasons stated in Nokia and the Staff's Oppositions. (Doc. ID No. 876078, Mot. Dkt. No. 1448-32 (Respondents' Motion); Doc. ID No. 876212 (Staff's Opposition); Doc. ID No. 876271 (Complainants' Opposition)).

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> Dr. Hemami's modified decoder still has to parse or read the bits of the temporal reference syntax element or value. And this is a 10-bit value in the bitstream. It's always 10 bits. The decoder has to read those 10 bits, and it seems to me that Dr. Hemami is proposing to read those bits and then not look at them in the decoder, ignore—don't look at what they might be. Which doesn't make sense, I think, given that the information is there.

(*Id.* at 1966:14-22). Dr. Richardson further testified that under this method, "the decoder no longer could identify or handle certain bitstream errors. What if there's been an error, some frames are missing, and the next temporal reference is actually not zero. And this happens all the time in decoding video. You get glitches, freeze-frames, and so on." (*Id.* at 1966:23-1967:5). And "it would no longer be possible to decode that initial I-picture without a GOP header." (*Id.* at 1967:10-14). Regarding Method (ii), Dr. Richardson identified the same problems and added that the decoder "first decod[es] a reference value, or some sort of indication value, and then it's resetting. And that's nowhere in MPEG-1. That's nowhere in the '321 patent or any of the standards we've been discussing." (*Id.* at 1968:11-18). This testimony was detailed and specific—not "conclusory" as Respondents contend. (*See id.* at 1966:7-1968:18 (discussing CDX-11.125-126 (Richardson Reb. Dem.); *but see* RBr. at 19-20 (claiming Dr. Richardson's testimony was conclusory)).

To effectuate their modifications, Respondents do not merely change the logic of a standard process or the meaning of a syntax element. Respondents write new variables into the MPEG-1 Standard and discard syntax elements to which the Standard assigns meaning. These are significant alterations. (*See* Tr. (Hemami) at 1187:20-23 ("**Q.** Pic_num is not in the MPEG-1 standard, is it? **A.** That is something that I have defined as we can see as an internal variable for the number of decoded pictures. So that is a, shall we call it, an addition, yes."). And Respondents did not present or explain the work required to implement these extensive alterations at the evidentiary hearing; Respondents only alleged that such modifications *could* be performed. This is insufficient under

[redacted]

Federal Circuit precedent. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). One example set of modifications, annotated in red on MPEG-1 by Respondents, is shown below.

Dr. Hemami's Analysis as to Obvious Methods for Revising MPEG-1 where a Decoder Resets the Temporal Reference

Example 1: Temporal Reference Is Not Decoded for the First Frame, But Is Reset

2.4.2.4 Group of pictures layer

| Syntax | No. of bits |
|---|---|
| group_of_pictures() { | |
| group_start_code | 32 |
| time_code | 25 |
| closed_gop | 1 |
| broken_link | 1 |
| next_start_code() | |
| if ( nextbits() == extension_start_code ) { | |
| extension_start_code | 32 |
| while ( nextbits() != '0000 0000 0000 0000 0000 0001' ) { | |
| group_extension_data | 8 |
| } | |
| next_start_code() | |
| } | |
| if ( nextbits() == user_data_start_code ) { | |
| user_data_start_code | 32 |
| while ( nextbits() != '0000 0000 0000 0000 0000 0001' ) { | |
| user_data | 8 |
| } | |
| next_start_code() | |
| } | |
| do { | |
| picture() | |
| } while ( nextbits() == picture_start_code ) | |
| } | |

Set pic_num = 0
/* internal variable for number of decoded pictures */

pic_num = pic_num +1

2.4.2.5 Picture layer

| Syntax | No. of bits |
|---|---|
| picture() { | |
| picture_start_code | 32 |
| temporal_reference | 10 |
| picture_coding_type | 3 |
| vbv_delay | 16 |
| if ( (picture_coding_type == 2) \|\| (picture_coding_type == 3) ) { | |
| full_pel_forward_vector | 1 |
| forward_f_code | 3 |
| } | |
| if ( picture_coding_type == 3 ) { | |
| full_pel_backward_vector | 1 |
| backward_f_code | 3 |
| } | |
| while ( nextbits() == '1' ) { | |
| extra_bit_picture | 1 |
| extra_information_picture | 8 |
| } | |
| extra_bit_picture | 1 |
| next_start_code() | |
| if (nextbits() == extension_start_code ) { | |
| extension_start_code | 32 |
| while ( nextbits() != '0000 0000 0000 0000 0000 0001' ) { | |
| picture_extension_data | 8 |
| } | |
| next_start_code() | |
| } | |
| if ( nextbits() == user_data_start_code ) { | |
| user_data_start_code | 32 |
| while ( nextbits() != '0000 0000 0000 0000 0000 0001' ) { | |
| user_data | 8 |
| } | |
| next_start_code() | |
| } | |
| do { | |
| slice() | |
| } while ( nextbits() == slice_start_code ) | |
| } | |

if ( (pic_num == 0) && (closed_gop == 1) {
temporal_reference = 0
}
else {
temporal_reference
/* decode the 10 bit temporal_reference information from the bitstream */
}

*Id.* at 2.4.2.5.

[redacted]

(CDX-17C.130 (Hemami Cross-Examination Dem.) (illustrating Respondents' creation of a new internal variable (pic_num) not found in the MPEG-1 Standard, and their parsing and then disregarding of temporal_reference, a syntax element to which the Standard assigns meaning) (cropped); *see also* CDX-17C.131).

Respondents rely heavily on Dr. Hemami's statement that modifying standards "is something that I did regularly with my students and in my Ph.D. thesis for my research." (Tr. (Hemami) at 1189:13-18). This does not establish obviousness. The H.264 Standard took years of committee work to develop. (Tr. (Richardson) at 136:10-13 ("In H.264's case, there was then a committee set up, a committee of experts, and they met regularly *over a period of a few years*, culminating in the completion of a standard in 2003.") (emphasis added)). Standards development grounded in empirical evidence is a far cry from untested, unsubstantiated modifications to the MPEG-1 Standard. An expert's personal experience ("I did this") or capability ("this would have been very simple") is, at most, *ipse dixit*. *See Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1364 (Fed. Cir. 2008) (holding that merely conclusory expert testimony, without analysis tied to the facts, is insufficient to support obviousness). Conclusory expert testimony, untethered to contemporaneous prior art or a reasoned motivation-to-combine analysis, is inadequate to prove obviousness. *See In re Kahn,* 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). Dr. Hemami's allegation that she has personally modified standards in unspecified ways identifies no technical motivation for the specific modifications she proposes, nor does it demonstrate a POSITA would have a reasonable expectation of success in implementing these modifications without the benefit of hindsight.

[redacted]

### D. MPEG-1 in Combination with Adolph Does Not Render the '321 Patent Obvious

Respondents' second invalidity ground combines MPEG-1 with Adolph. For the first three limitations, Respondents rely entirely on MPEG-1 alone. (Tr. (Hemami) at 1099:1-14). The closed_gop flag still fails to satisfy the indication limitation for the reasons discussed above. (Tr. (Richardson) at 1969:21-1970:7). The dispute for the MPEG-1/Adolph combination is whether Adolph's IP counter values satisfy the identifier values (8[c]/10[c]) and resetting limitations (8[d]/10[d]). They do not.

First, Adolph's IP counter values are not "identifier values" for image frames as the claims require. The IP counter is an internal tally of picture types—a "tally counter" that Dr. Richardson analogized to "somebody at the door [of a theater] and they are clicking a counter to count up the number of people coming in[.]" (Tr. (Richardson) at 1960:15-19). The IP counter does not "identify[] any particular frames"—the same IP counter value may correspond to multiple frames, and one cannot "work backwards from the IP counter and identify a specific frame." (*Id.* at 1960:20-25, 1970:18-1971:2). Each number labeled "IP" from Adolph Figure 6 corresponds to multiple frames that the decoder cannot differentiate:

IP 1 2 2 2 3 3 3 4 4 4 5 5 6 **Fig. 6**

(CDX-11.130 (Richardson Reb. Dem.) (cropped)). The counter increments each time the decoder identifies an I- or P-picture during decoding, but the counter values play no role in the decoding of picture data itself—they are used exclusively to recover display order after the pictures are decoded. (JX-0695.010 (Adolph) at ¶¶ [0030], [0032]; Tr. (Richardson) at 1970-1971:2). This is not a numbering scheme of identifier values for image frames. The claims require "decoding identifier values for image frames"—extracting values from the coded bitstream that correlate to

[redacted]

a specific image frame's coding or display order. Adolph's internal counters are not "decoded" as claimed. (Tr. (Richardson) at 1970:9-16).

Respondents attempt to create an inconsistency between Nokia's validity and infringement positions, but none exists. (*See* RBr. at 26-27). The variables relevant to Nokia's infringement theory (e.g., prevPicOrderCntMsb, PicOrderCntVal) are decoded or derived from the bitstream and used in standardized decoding processes for deriving identifier values for image frames according to a numbering scheme. (Tr. (Chrissan) at 401:16-402:22, 405:1-19). Adolph's IP counter values are fundamentally different: they are not decoded from the bitstream and are not part of the MPEG-1 or any other decoding process. (Tr. (Richardson) at 1970:9-16, 1972:4-6).

Respondents also attempt to equate Adolph's IP counter with a preferred embodiment in the '321 Patent describing numbering "successive reference image frames in the coding order" with "numbers incremented by one." (*See* RBr. at 6, 25-26; JX-0010.017 ('321 Patent) at 13:22-29). This comparison fails on its own terms. The '321 Patent's preferred embodiment describes a numbering scheme in which values correspond to specific image frames and are decoded with those frames. (JX-0010.011 ('321 Patent) at 4:42-45). Adolph's IP counter values, by contrast, "don't ***identify*** frames." (Tr. (Richardson) at 1971:22-1972:3 (emphasis added)). Multiple successive image frames can share the same IP counter value, meaning the counter is not incremented by one for each frame and does not follow a numbering scheme. (JX-0695.004 (Adolph) at Fig. 6). Just because a counter eventually increments does not make it an identifier value within the meaning of the claims.

Second, resetting the IP counter "after a GOP header is found" is not the same as resetting the identifier value "for the indicated first image frame." As Dr. Richardson explained, the reset in Adolph is tied to the GOP header, not to the first image frame itself. (Tr. (Richardson) 1971:4-

[redacted]

13). The IP counter value is not an identifier value for the indicated first image frame—it is an internal counter that tracks position within a GOP to maintain display order when transmission errors corrupt or omit GOP header information. (Tr. (Richardson) at 1960:2-10; JX-0695.001 (Adolph) at Abstract). Even assuming an indication as claimed existed in the MPEG-1/Adolph combination (it does not), Adolph's counters would not constitute the claimed identifier values for decoded image frames, nor the identifier value for the indicated first image frame that is reset. A decoder cannot reset an internal display counter as the claimed identifier value when neither the counter nor the alleged indication is tied to the first image frame as claimed. (Tr. (Richardson) at 1971:3-13 (opining that Adolph is "different from resetting for an image frame.")).

In the alternative, Respondents argue MPEG-1's temporal_reference satisfies Limitations 8[c]/10[c] while Adolph's IP counter satisfies 8[d]/10[d]. (Rbr. at 24). Respondents claim that Nokia's proposed construction supports that "identifier values" (from Limitation [c]) and "the identifier value" (from Limitation [d]) do not need to be "the same values." (*Id.*). Respondents' argument misconstrues Nokia's position and the claims. The claims specify that the "reset" identifier value is "for the indicated first image frame." Thus, the "reset" identifier value is a different identifier value from the "identifier values for image frames according to a numbering scheme" that the decoder decodes. Nokia's position is that Adolph's IP counters are not identifier values for decoded image frames or the indicated first image frame, and there is no logical connection between Adolph resetting an IP counter and the identifier values referred to in the claims.

As for the "reset" identifier value "for the indicated first image frame," Nokia and Staff's proposed construction requires that the resetting be "to restart the numbering scheme." Resetting an IP counter (which is an internal tally of picture types) does nothing to restart the numbering

[redacted]

scheme of temporal_reference. Respondents' position has a logical disconnect: As Dr. Richardson explained, Adolph's IP counter is distinct from temporal_reference and does not follow the numbering scheme of temporal_reference. (See Tr. (Richardson) at 1971:21-1972:10 (explaining that the IP counter "simply count[s] a tally of how many frames of a certain type have been received")).

### E. VLC 0.7.2 Does Not Anticipate the '321 Patent

#### 1. Claim Construction and Priority Date

Nokia's Initial Post-Hearing Brief explains why the '321 Patent is entitled to a priority date of January 23, 2002, the filing date of Finnish Application 20020127. (CBr. at § IV.C). Respondents' VLC ground is contingent on their proposed constructions. Under Nokia's and Staff's constructions, the Finnish Application provides written description support for the asserted claims, including the "resetting" limitation. (CX-6090.017-18 (Finnish Pat. App. No. 20020127) at ¶¶ [0048]-[0049]); Tr. (Richardson) at 143:12–22, 142:22–147:5, 1973:13–1975:8).

Respondents do not challenge this. Rather, Respondents only allege VLC 0.7.2 is prior art under their proposed constructions for "resetting" or "the identifier value" because the Finnish Application fails to provide support for their proposed constructions. However, Respondents' positions on claim construction and the '321 Patent's priority date are logically inconsistent. On the one hand, Respondents allege that their proposed constructions find support in the '321 Patent's specification, which presumably includes the specification's preferred decoder embodiment at 11:26-49. (JX-0010.015 ('321 Patent) at 11:26-49). On the other hand, Respondents claim that the Finnish Application lacks written description for their proposed constructions, including paragraph 49 of the Finnish Application, which is verbatim identical to the '321 Patent's specification at 11:26-49. (*Compare* CX-6090.018 (Finnish Patent App. No. 20020127) at ¶ [0049] *with* JX-0010.15 ('321 Patent) at 11:26-49).

[redacted]

The correct answers are logically consistent: Both the '321 Patent's preferred decoder embodiment and the Finnish Application support Nokia and Staff's proposed constructions and the '321 Patent's priority date. By contrast, Respondents' positions are untenable under claim construction principles, which require constructions that do not read out preferred embodiments. *Kaufman v. Microsoft Corp.*, 34 F.4th 1360, 1372 (Fed. Cir. 2022) ("A claim construction that excludes a preferred embodiment is rarely, if ever correct and would require highly persuasive evidentiary support."). And under Nokia and Staff's proposed constructions, VLC 0.7.2 (available May 21, 2004) is not prior art. Indeed, what Respondents point to in VLC 0.7.2 includes Nokia's own contributions to the H.264 Standard—the very invention claimed in the '321 Patent. Dr. Richardson testified: VLC 0.7.2 "includes an implementation of H.264 video encoder and … an H.264 decoder. And H.264, in my view, includes the contribution and invention of the '321 patent." (Tr. (Richardson) at 1973:1-7).

## III. U.S. PATENT NO. 10,536,714

The Asserted Claims of the '714 Patent are valid. Respondents present one invalidity ground: Rusert in combination with Karczewicz (together, the "Rusert Combination"). This ground fails for at least three reasons.

First, the Rusert Combination does not teach: "determin[ing] a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate." Respondents' theory for this limitation relies on the notion that a motion vector in Rusert's scan order—which Respondents contend is the first SMVPC—is compared to whatever motion vectors exist in Rusert's PMV_CANDS list at the time that motion vector is processed. One key problem with Respondents' theory is that, by design, the motion vectors in PMV_CANDS are determined before Rusert determines what or where the purported

[redacted]

first SMVPC is. In other words, Rusert's purported subset cannot be based on "the location of the block associated with the first spatial motion vector prediction candidate."

Second, the Rusert Combination does not teach: "comparing motion information of the first spatial motion vector prediction candidate with motion information of another spatial motion vector prediction candidate of the set of spatial motion vector prediction candidates without making a comparison of each possible candidate pair from the set of spatial motion vector prediction candidates." Rusert compares the alleged first SMVPC to the entire set of candidates.

Third, a POSITA would not have had a motivation to combine Rusert with Karczewicz to apply Rusert to the H.265 Standard because Rusert's scan order is not compatible with Karczewicz's split PU structure. The limitations missing from the Rusert Combination are important aspects of the '714 Patent's improved merge mode. As Dr. Richardson explained, the invention of the '714 Patent reduced the number of worst-case duplication checks for merge candidates in a parallelizable fashion. Nokia contributed its improved merge mode to the H.265 Standard after empirical testing (performed by a neutral party) showed technical merits to the invention. Nonetheless, Respondents' Rusert Combination relies on the prior state of the art described in both the patent and Nokia's contributions. That is, the art Respondents rely on requires the exhaustive duplication checks and sequential processing the '714 Patent improved on.

### A. Claim Construction

The term "first spatial motion vector prediction candidate" is disputed. The parties propose the following constructions:

| Claim Term | Nokia's Proposed Construction | Respondents' Proposed Construction | Staff's Proposed Construction |
|---|---|---|---|
| "first spatial motion vector prediction candidate" | Plain and ordinary meaning, which means one of the spatial motion vector prediction candidates selected for | the spatial motion vector prediction candidate that is first for processing | One of the spatial motion vector prediction candidates selected for potential inclusion in the |

[redacted]

| | | | |
|---|---|---|---|
| | potential inclusion in the motion vector prediction list. | | motion vector prediction list. |

The intrinsic record should control the parties' claim construction dispute, and the Court should adopt Nokia and Staff's proposed construction for the reasons expressed in the *Markman* process. However, Nokia wishes to respond to a suggestion in Respondents' brief that Nokia advocated for a "first for processing" meaning of the claim term "first spatial motion vector prediction candidate" in a prior IPR proceeding.[2] (RBr. at 30-31 (citing *Amazon.com, Inc. v. Nokia Techs. Oy*, IPR2024-00604, Paper 22 at 60 (PTAB Jan. 30, 2025))). This suggestion is, at best, misleading and contradicted by the POR Respondents' brief cites.

Nokia's POR is consistent with Nokia's positions here. Respondents' brief quotes the highlighted words shown below from page 60 of Nokia's POR, yet Respondents' brief omits the header and surrounding context. (*Id.*; IPR2024-00604, Paper 22 at 60 (PTAB Jan. 30, 2025)). Nokia's POR never argued "first spatial motion vector prediction candidate" imposes a time-based processing limitation. Rather, as shown by the header of the section, Nokia challenged whether the "Nakamura" reference disclosed the "determining a subset" limitations. (App'x § I at 1-4). As Nokia explained, the IPR Petitioners identified Nakamura's S0 as a "subset" and S1 as a "first spatial motion vector prediction candidate." (*Id.*). One problem with this, Nokia

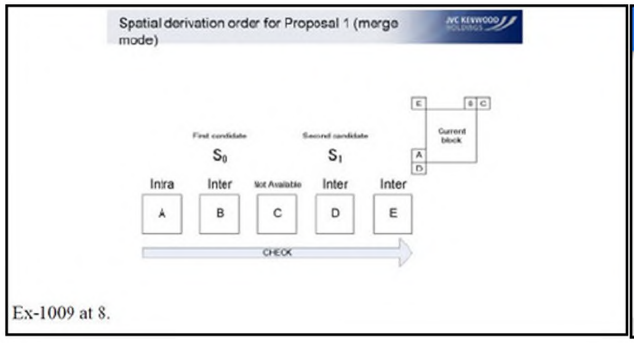
> **C. GROUND 3 – NAKAMURA IN COMBINATION WITH WD4**
>
> **1. Nakamura does not teach "determining a subset of spatial motion vector prediction candidates based on a location of the block associated with the first spatial motion vector prediction candidate"**
>
> Petitioner alleges this limitation is found in Nakamura. However, Nakamura does not teach "determine a subset of spatial motion vector prediction candidates based on a location of the block associated with the first spatial motion vector prediction candidate," as required by the claims. Ex-1001 at cl. 1, cl. 15, cl. 29.
>
> Petitioner's argument is flawed. First, Petitioner suggests S0 is a subset of the spatial motion vector prediction candidates. Pet. at 71. Second, Petitioner claims that S1 is the first spatial motion vector prediction candidate, even though Nakamura discloses that S1 is derived after S0, as shown in the figure below, which illustrates the processing or check order (arrow) that generates S0 (the first candidate) followed by S1 (the second candidate). *Id.* at 66, 68; *see also* Ex-2010 at ¶ 130; *supra* Section II(C)(3)(a).

[2] Respondents made a similar suggestion in their *Markman* brief. (Respondents' *Markman* Brief, Doc. ID No. 861666, at 34-35).

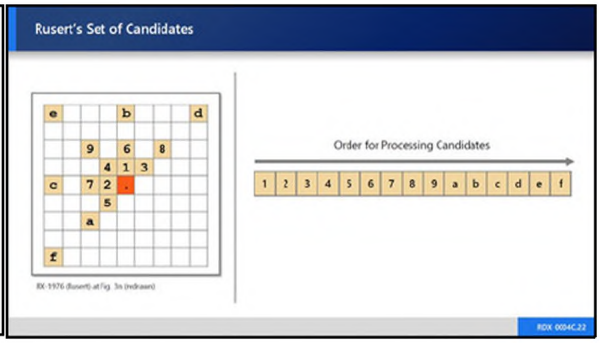
[redacted]

pointed out, is that S0 cannot be determined "based on the location of the block associated with" S1 if Nakamura's system determines S0 without ever knowing what S1 is or where it is located. (*Id.*).

Contrary to Respondents' suggestion that Nokia disputed Nakamura in its POR because "first spatial motion vector prediction candidate" imposes a time-based processing limitation, Nokia's POR shows that Nokia in fact argued the Nakamura reference at issue in the IPR proceeding (and the 1380 Investigation) has the same shortcoming that Nokia raises now for the Rusert Combination, specifically as it relates to the '714 Patent's "determining a subset" limitations. The argument cited by Respondents' brief (RBr. at 30-31) from Nokia's POR substantially maps to one presented here. That is, Nokia's positions are consistent: Both Rusert and Nakamura fail to disclose the "determining a subset" limitations because what Respondents or the IPR Petitioners call a "subset" (Rusert's "PMV_CANDS" or Nakamura's "S0") cannot be determined based on the block location of the alleged "first spatial motion vector prediction candidate," which is unknown in both systems at the time any alleged determination is made. This is shown by a comparison between Nakamura's figure, which appears in Nokia's POR immediately below the paragraph cited above, and Respondents' demonstrative slide (RDX-0004C.80) describing Respondents' Rusert theory. (App'x § I at 5).



Ex-1009 at 8.



[redacted]

In both Nakamura and Rusert, a scan order follows sequentially increasing numbers or letters. (*See* IPR2024-00604, Paper 22 at 61; *see* RDX-0004C.22 (Hemami Demonstratives)). In both cases, the alleged subset ("S0" or "PMV_CANDS") consists of one or more available motion vectors placed into a list before the block location associated with the alleged "first spatial motion vector prediction candidate" is ever scanned, much less known. (IPR2024-00604, Paper 22 at 60-63; Tr. (Richardson) at 1941:24-1942:24). What motion vector becomes the first SMVPC, such as Nakamura's "S1" or the motion vector that follows in Rusert's scan order, depends on availability and is considered only after the alleged "subset" is determined. (*Id.*). Thus, Nokia's position is and was that both references fail to disclose the "determining a subset" limitation. (App'x § I at 1-4).

To be clear, Nokia is not comparing its arguments on the Rusert and Nakamura references as an additional argument against Respondents' invalidity ground here. Rather, Nokia provides this explanation to correct the misrepresentation in Respondents' brief at pages 30-31.

### B. Background of the Asserted References

#### 1. Rusert

Rusert builds a set of PMV candidates following a scan order. (RX-1976 (Rusert) at ¶¶ 41, 65, 71). "Rusert describes a process of stepping through a number of neighboring locations in a scan order, and there's numerical order here, 1, 2, 3, 4, 5 and so on. And at some point at the end of that process Rusert ends up with a set of motion vector prediction candidates." (Tr. (Richardson) at 1933:13-23 (discussing CDX-11.62); *see also* Tr. (Hemami) at 1032:1-1033:22.

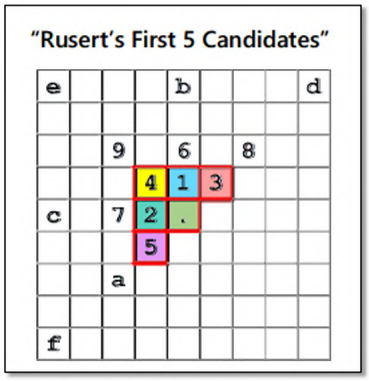
##### a. Rusert Matches the Prior Art Described in the Patent and Rejected by the H.265 Standard

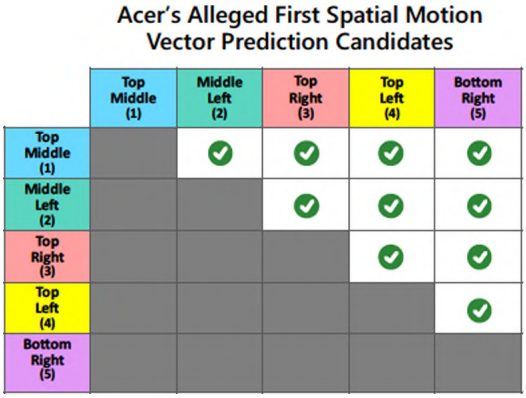
During the hearing, Respondents' expert described a prior art process of building a merge list using "exhaustive comparison[s]" explaining that "if we have five neighbors and we're going to compare everybody to everybody else, there will be a total of ten comparisons." (Tr. (Hemami)

[redacted]

at 1009:9-21 (discussing RDX-0004C.19)). This prior art that the '714 Patent expressly improves over is the same process used by Rusert. (Tr. (Richardson) at 1934:4-1935:8 (explaining how Rusert teaches exhaustive comparisons while discussing CDX-11.63-64); *see* JX-0004 ('714 Patent) at 3:60-4:3; *see also* CX-6091.1-2 (JCTVC-H0252) ("decreased complexity by reducing worst case number of duplication checks from 10 to 5")).

**Rusert Works the Same as Acer's Self-Described "Prior Art"**




As Dr. Richardson explained, "[Rusert] works in the same way with respect to exhaustively comparing candidates . . . if we consider Rusert's first 5 positions, 1, 2, 3, 4, 5, as I'll explain, as Rusert steps through those positions, every possible candidate, if available, is compared with every other possible candidate, if available." (Tr. (Richardson) at 1934:20-1935:8 (discussing CDX-11.64); RX-1976 (Rusert) at ¶ 71). The main difference between Rusert and Respondents' self-described prior art is that, according to Respondents, Rusert has "15 candidates" such that "Rusert processes a greater diversity of candidates" leading to a worst case of many more comparisons (up to 105) than Respondents' self-described prior art. (*See* Tr. (Hemami) at 1035:24-1037:3).

The goal of the '714 Patent was to improve over prior art, such as Rusert, that performed exhaustive comparisons in a sequential fashion. (*See* Tr. (Richardson) at 1932:4-23 (explaining

[redacted]

that a need for a parallelizable process that reduced computational complexity led to the '714 Patent while discussing CDX-11.59)). Respondents' expert agreed that "Rusert teaches sequential processing of candidates" while Dr. Richardson showed how Rusert "exhaustively compar[es] candidates." (Tr. (Hemami) at 1051:18-1052:9; Tr. (Richardson) at 1934:20-1935:8). Both characteristics of Rusert are key aspects of the prior art that the '714 Patent improved by limiting comparisons to location-based subsets leading to "decreased complexity by reducing worst case number of duplication checks from 10 to 5 [and] achieving parallel derivation of spatial candidates . . ." (CX-6091.1-2 (JCTVC-H0252) (Nokia's contribution to the H.265 Standard); *see also* Tr. (Richardson) at 1932:4-23 (explaining benefits of the '714 Patent while discussing CDX-11.59)).

**2. Karczewicz**

Karczewicz "discloses coding units, coding trees, and prediction units" that are "the same concepts that end up in the [H.265] standard, and the concepts are these variable-sized and shaped coding blocks and prediction blocks." (Tr. (Richardson) at 1935:9-17 (discussing CDX-11.65); *see also* Tr. (Hemami) at 1033:25-1034:19). Respondents rely on Karczewicz to allegedly apply the teachings of Rusert to H.265's split PU system. (RBr. at 33 ("*First*, the combination is a straightforward and simple application of Rusert's teachings into HEVC blocks.")). The variable-sized prediction blocks used in the H.265 Standard and disclosed by Karczewicz, however, are not compatible with Rusert's disclosed scan order as explained below. (*Infra* Section III.C.3).

**C. The Rusert Combination Does Not Render the '714 Patent Obvious**

The Rusert Combination does not render the Asserted Claims of the '714 Patent obvious under any proposed construction of "first spatial motion vector prediction candidate."[3]

[3] As explained below, Respondents waived any theory that this combination renders the asserted claims obvious under Respondents' proposed construction. To the extent this Court finds differently, however, Section III.C.4, *infra*, explains that the Rusert Combination would not render the asserted claims obvious under Respondents' proposed construction.

[redacted]

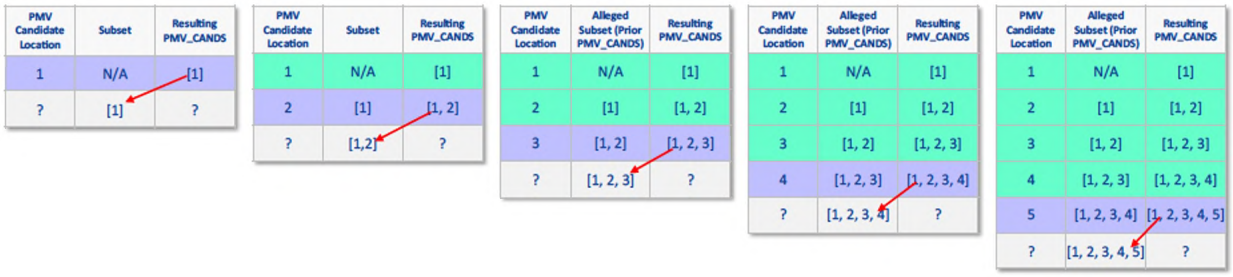
Moreover, a POSITA would lack motivation to combine Rusert with Karczewicz.

### 1. The Rusert Combination Does Not Disclose Independent Claim Limitations 1[C]/9[C]/15[C]/23[C]

The Rusert Combination does not teach determining a subset "based on the location of the block associated with the first spatial motion vector prediction candidate" because in Rusert, the alleged subset, "PMV_CANDS," is set prior to knowing the location of the block associated with the first SMVPC. Further, Rusert does not disclose "determining a subset of spatial motion vector prediction candidates" at all. Rather, Rusert discloses a set of candidates, "PMV_CANDS," that builds with the disclosed scan order. As to the first issue, Respondents allege three reasons why Rusert discloses determined subsets "based on the location of the block associated with the first spatial motion vector prediction candidate." (*See* RBr. at 42-45). All three reasons fail.

First, Respondents claim the alleged subset in Rusert is based on the location of the first SMVPC because the alleged subsets can only "include candidates at a similar or smaller distance from the current block of pixels." (*Id.* at 42 (citations omitted)). However, the fact that PMV_CANDS may contain only candidates closer in distance to the current block than the alleged first SMVPCs does not mean the contents of PMV_CANDS is based on the location of the block associated with the first SMVPC. (*See* Tr. (Richardson) at 1941:24-1943:20; *see also* CDX-11.80 ("Correlation ≠ 'Based on'")). Dr. Richardson explained that for a given candidate, the alleged subset, PMV_CANDS, is set before Rusert knows which candidate is next, stating "in Rusert's method, let's say we process candidate locations 1 and 2, we don't know the location at that point in Rusert of the next candidate." (Tr. (Richardson) at 1940:4-11 (discussing CDX-11.78); *see also* RX-1976 (Rusert) at ¶ 71) This fact is illustrated by Dr. Richardson's slide 78, showing that the "resulting PMV_CANDS" from the previous scan iteration is the alleged subset for the next candidate, regardless of that next candidate's location:

[redacted]



| PMV Candidate Location | Subset | Resulting PMV_CANDS |
|---|---|---|
| 1 | N/A | [1] |
| ? | [1] | ? |

| PMV Candidate Location | Subset | Resulting PMV_CANDS |
|---|---|---|
| 1 | N/A | [1] |
| 2 | [1] | [1, 2] |
| ? | [1,2] | ? |

| PMV Candidate Location | Alleged Subset (Prior PMV_CANDS) | Resulting PMV_CANDS |
|---|---|---|
| 1 | N/A | [1] |
| 2 | [1] | [1, 2] |
| 3 | [1, 2] | [1, 2, 3] |
| ? | [1, 2, 3] | ? |

| PMV Candidate Location | Alleged Subset (Prior PMV_CANDS) | Resulting PMV_CANDS |
|---|---|---|
| 1 | N/A | [1] |
| 2 | [1] | [1, 2] |
| 3 | [1, 2] | [1, 2, 3] |
| 4 | [1, 2, 3] | [1, 2, 3, 4] |
| ? | [1, 2, 3, 4] | ? |

| PMV Candidate Location | Alleged Subset (Prior PMV_CANDS) | Resulting PMV_CANDS |
|---|---|---|
| 1 | N/A | [1] |
| 2 | [1] | [1, 2] |
| 3 | [1, 2] | [1, 2, 3] |
| 4 | [1, 2, 3] | [1, 2, 3, 4] |
| 5 | [1, 2, 3, 4] | [1, 2, 3, 4, 5] |
| ? | [1, 2, 3, 4, 5] | ? |

*See e.g.*, RX-1976 (Rusert) at ¶¶ 4, 39, 42, 65, 71, Fig. 3n (redrawn). CDX11.78

Respondents contend "Rusert determines its subset '*after*' a candidate has been selected." (RBr. at 45 (citing Tr. (Hemami) 1052:10-14) (emphasis added by RBr.)). This is incorrect. The testimony from their expert that Respondents cite is inconsistent with both Rusert and the same expert's testimony immediately prior to that question. Rusert explains that its scan order for PMV_CANDS progresses in a pattern following sequentially increasing numbers. (RX-1976 (Rusert) at ¶ 65, Fig. 3n). Rusert progressively adds motion vectors to PMV_CANDS in scan order depending on candidate availability and comparisons between a given motion vector and every member of the PMV_CANDS set. (*Id.* at ¶¶ 41, 71). This is what Respondents expert described in testimony immediately prior to what Respondents cite:

> I don't agree in that if this is the case -- so, first off, Rusert teaches sequential processing of candidates. Okay? So Rusert starts the process, walks through, takes a specific candidate.
>
> When that candidate is going to be evaluated, Rusert teaches that it will be compared with candidates that are at a similar or smaller distance.
>
> Now, Rusert does not say it will be compared with candidates with ordinal numbers less than this. ***And the reason Rusert doesn't say that is because there is processing that has occurred before then, there is an interim list, Rusert is comparing with candidates on the interim list.*** There is no guarantee that that interim list is always going to be 1, 2, 3, 4, 5. It might be 1, 2, 3. It might be 1, 4. It is dynamic based upon the actual data for a particular block that's being coded.

(Tr. (Hemami) 1051:18-1052:9) (emphasis added)). As Dr. Hemami explained "there is an interim list," i.e., Rusert's PMV_CANDS, and this interim list exists prior to Rusert reaching the next

[redacted]

position in its scan order because "there is processing that has occurred before then." (*Id.*; *see also* Tr. (Richardson) at 1941:24-1942:24 ("[T]he subset does not and cannot depend on the location of the first SMVPC in Rusert, because, one, we don't know that location when the subset is – alleged subset is finalized . . .")). Thus, Respondents' contention that Rusert determines its subset "'after' a candidate has been selected" is contradicted by both Rusert and the experts' testimony.

If Respondents are suggesting Rusert's *scan order* is determined prior to the selection of any candidate, this argument conflates Rusert's scan order—i.e., the order in which block positions are evaluated—with candidates—i.e., motion vectors. Respondents incorrectly assert "the '714 Patent and Nokia's infringement read allow subsets to be predetermined." (RBr. at 45 (citation omitted)). This is the same conflation fallacy, confusing block locations (which may or may not be associated with motion vectors) with candidates themselves (which are motion vectors). Respondents claim Dr. Moulin "agreed that the H.265 pairings between candidate location and subset location ***that he is relying on for infringement*** were determined over a decade ago when that standard was first published in 2013." (RBr. at 46 (emphasis added)). However, contrary to Respondents' assertions, neither the '714 Patent nor Dr. Moulin rely on predetermined subsets. As explained by Dr. Moulin, "the subsets of motion vectors, that's inherently a dynamical process because it depends on the video . . . they vary just like the input video varies over time and space." (Tr. (Moulin) at 230:10-231:5; JX-0004 ('714 Patent) at 2:59-3:4).

Respondents argue "Dr. Moulin abandoned his prior admission that H.265's subsets were predetermined" in favor of a "new gloss" that the subsets are dynamically determined. Yet Respondents fail to cite any abandonment of a "prior admission" from Dr. Moulin, much less any statement from Dr. Moulin to this effect. (*See* RBr. at 46). Dr. Moulin's positions remain consistent: The '714 Patent (and the H.265 Standard) sets "pairings between locations," but

[redacted]

decoders that practices the claims "determine a subset of motion vectors because they depend on the input video . . . [t]he subset of motion vectors of a video today cannot have been known ten years ago." (Tr. (Moulin) at 332:11-333:9). Respondents' brief alleges that "Dr. Moulin never suggested that the claimed 'set' somehow expanded or contracted depending upon the availability of particular candidates." (RBr. at 49). This allegation is false. Dr. Moulin testified that "not all neighbors have a motion vector" and if a neighboring location does not have a motion vector, then "it's not even considered" as a candidate. (Tr. (Moulin) at 213:7-215:1 (discussing CDX-3C.22)). Dr. Moulin provided an analogy of a courthouse, explaining "what lives in this location is dynamic. . . . [T]his courtroom is fixed[,] . . . [t]he offices outside are fixed[,] . . . [b]ut what resides inside changes." (*Id.* at 366:18-367:18). Ultimately, there is no tension between Nokia's experts. Indeed, all technical experts who opined on the '714 Patent agree: the "candidates" are motion vectors, and those may or may not be available depending on content of a video and location within a frame. (*Id.* at 328:7-15; Tr. (Richardson) at 1940:24-1941:23; Tr. (Hemami) at 1161:16-19).

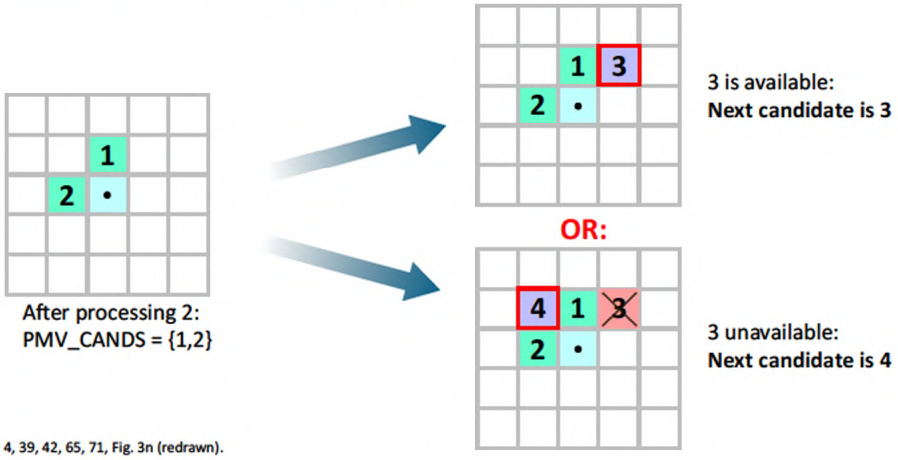
Likewise, Dr. Richardson explained that some block locations in the embodiment of Rusert relied on by Respondents may be unavailable as candidates. (*See id.*; *see also* RX-1976 (Rusert) at Fig. 3n (depiction of the embodiment relied on by Respondents)). This is important because if we assume "PMV_CANDS contains the alleged subset of 1 and 2 . . . [w]hat comes next depends on availability." (Tr. (Richardson) at 1941:24-1943:20 (discussing CDX-11.80, shown below)). "If location 3 is available . . . it's the next candidate to be evaluated. If location 3 is not available, then location 4 would be the next candidate to be evaluated." (*Id.* (clarifying "[w]hen I say in this demonstrative slide next candidate is 3, I mean that the next candidate in Rusert is going to be the motion vector prediction information which exists at location 3.")). This "illustrates that the subset does not and cannot depend on the location of the first SMVPC in Rusert because, one, we don't

know that location when the subset is – alleged subset is finalized, and two, that location changes depending on availability." (*Id.*).

**Regardless of Location of the Block Associated With the First Spatial Motion Vector Prediction Candidates, the Subset Remains the Same**

| Encoding Claim 1 | Decoding Claim 9 | Encoding Claim 15 | Decoding Claim 23 |
|---|---|---|---|
| **1[C]:** determining a subset of spatial motion vector prediction candidates based on a location of the block associated with the first spatial motion vector prediction candidate; | **9[C]:** determining a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; | **15[C]:** determine a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; | **23[C]:** determine a subset of spatial motion vector prediction candidates based on the location of the block associated with the first spatial motion vector prediction candidate; |

**Correlation ≠ "Based on"**




*See e.g.*, RX-1976 (Rusert) at ¶¶ 4, 39, 42, 65, 71, Fig. 3n (redrawn).

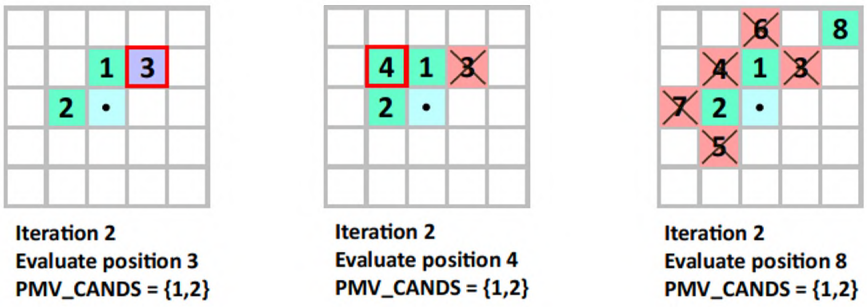
CDX11.80

Dr. Richardson's logic can be applied to any number of possible outcomes, three of which are depicted below, highlighting the fact that the alleged subset cannot be based on the location of a candidate that Rusert's scan has not yet visited:

> All of these are what I called iteration 2, so I'm assuming that Rusert has processed locations 1 and 2, put the motion information into PMV_CANDS, so we have the same subset at all three, and depending on availability, the next position that Rusert evaluates could be 3, could be 4, it could be 8, it could be f, depending on which of the intervening blocks are available [and] which are not available.

(*Id.* at 1943:21-1944:9 (discussing CDX-11.81); *see also* RX-1976 (Rusert) at ¶ 71).

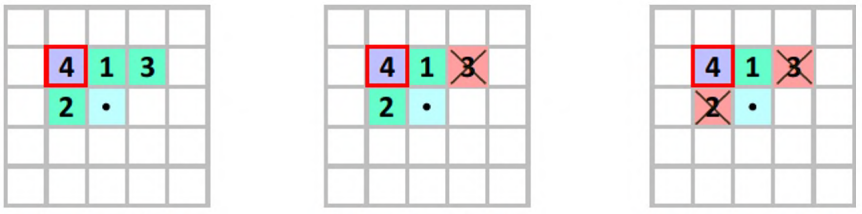
[redacted]




Respondents misconstrue Dr. Richardson's argument that Rusert's alleged subsets are not based on the location of the block associated with Rusert's alleged first SMVPC, attempting to create an inconsistency between Dr. Richardson and Dr. Moulin. Respondents claim Dr. Richardson simply "argued that Rusert did not teach limitations 15[C]/23[C] because different candidates in Rusert can have the same subset." (RBr. at 47). This is incorrect. Dr. Richardson's argument against Rusert is not that different candidates in Rusert can have the same subset but rather, "the subset does not and cannot depend on the location of the first spatial motion vector prediction candidate in Rusert . . ." which is because regardless of the location of the next candidate, the subset has already been determined. (Tr. (Richardson) at 1941:24-1943:20 (discussing CDX-11.80); RX-1976 (Rusert) at ¶ 71).

Moreover, Dr. Richardson explained that according to Rusert, an alleged first SMVPC at a certain location can have multiple possible subsets depending on the availability of candidates prior to that location in the scan order. (*Id.* at 1944:10-1945:4 (explaining that "not only does the subset not depend on the location, the location doesn't depend on the subset. So the two are, if you like, not – can't be based on each other" while discussing CDX-11.82)). This proves the alleged subset is determined prior to locating the block associated with the alleged first SMVPC.

[redacted]



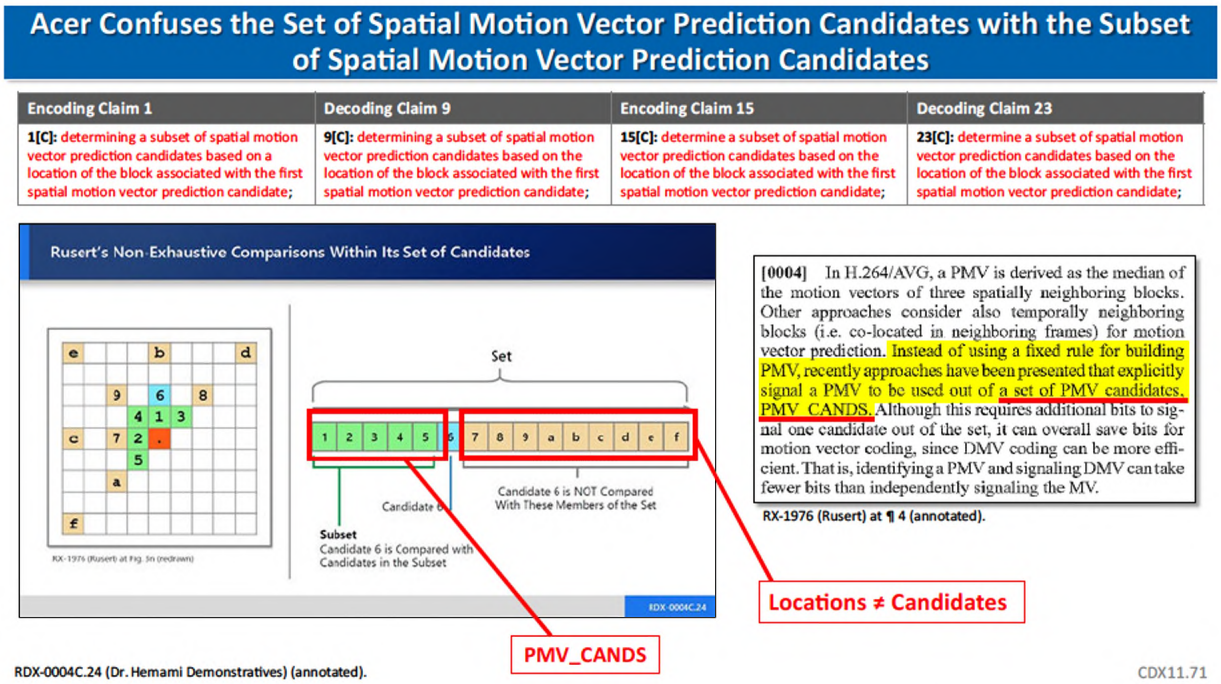

Second, Respondents argue that the PTAB reached the conclusion that Rusert discloses determining subsets based on the location of the block associated with the first SMVPC. (RBr. at 43). However, none of the IPR proceedings filed against the '714 Patent have resulted in FWDs and none reflect final conclusions of the PTAB, much less under a clear and convincing evidence standard. (*See Amazon.com, Inc. v. Nokia Techs. Oy*, IPR2024-00604, Paper 26 (Termination Due to Settlement After Institution of Trial); *see Amazon.com, Inc. v. Nokia Techs. Oy*, IPR2024-00605, Paper 26 (Termination Due to Settlement After Institution of Trial); *see Snap Inc. v. Nokia Techs. Oy*, IPR2025-01263, Paper 11 (Notice Denying Institution); *see ASUSTEK Computer Inc. v. Nokia Techs. Oy*, IPR2025-01153 (currently pending)). Respondents have the burden to show invalidity by clear and convincing evidence based on the evidence in this case.

Third, Respondents incorrectly assert Rusert's disclosure is consistent with Nokia's infringement read "because both Rusert and H.265 teach the same comparison . . ." (RBr. at 44). This argument misses the point. What matters is whether Rusert discloses the process in the Asserted Claims. It is irrelevant whether Rusert has a same possible candidate pair as the H.265 Standard if the alleged subset is not determined based on the location of the alleged first SMVPC.

Even putting aside the issue of whether Rusert discloses "determining a subset … based on the location of the block associated with the first motion vector prediction candidate," Rusert does not disclose independent claim limitations [C] because Rusert does not disclose determining a subset at all. Respondents assert "Rusert determines a subset of PMV candidates, which includes

[redacted]

those candidates obtained from blocks in previous locations in Rusert's scan order." (RBr. at 41 (citations omitted)). However, what Respondents' point to as the alleged subset is Rusert's set of candidates. (Tr. (Richardson) at 1937:8-1938:10 (explaining "if [PMV_CANDS] is the subset, it is also the set in Rusert"); RX-1976 (Rusert) at ¶ 4). As Dr. Richardson explained with reference to CDX-11.71 shown below, "if [PMV_CANDS] is the subset, it is also the set in Rusert, because, in my view, that PMV_CANDS list, at any point in Rusert's proces[s], PMV_CANDS contains all of the possible or available candidates for comparison." (*Id.*).




The set cannot be anything but PMV_CANDS because "Rusert does not know whether any of those further candidates, 7, 8, 9, up to f, are actually even available let alone potential candidates." (*Id.*). Indeed, Rusert refers to PMV_CANDS as the "set of PMV candidates." (RX-1976 (Rusert) at ¶ 4). Rusert states "[t]he method further comprises selecting a set of PMV candidates as a subset of the set of previously coded motion vectors," but the use of the word "subset" does not mean that Rusert teaches the claimed subset of the '714 Patent. (*Id.* at ¶ 11). What Rusert is describing is that the "set of PMV candidates" (PMV_CANDS) is a "subset of the set of previously coded

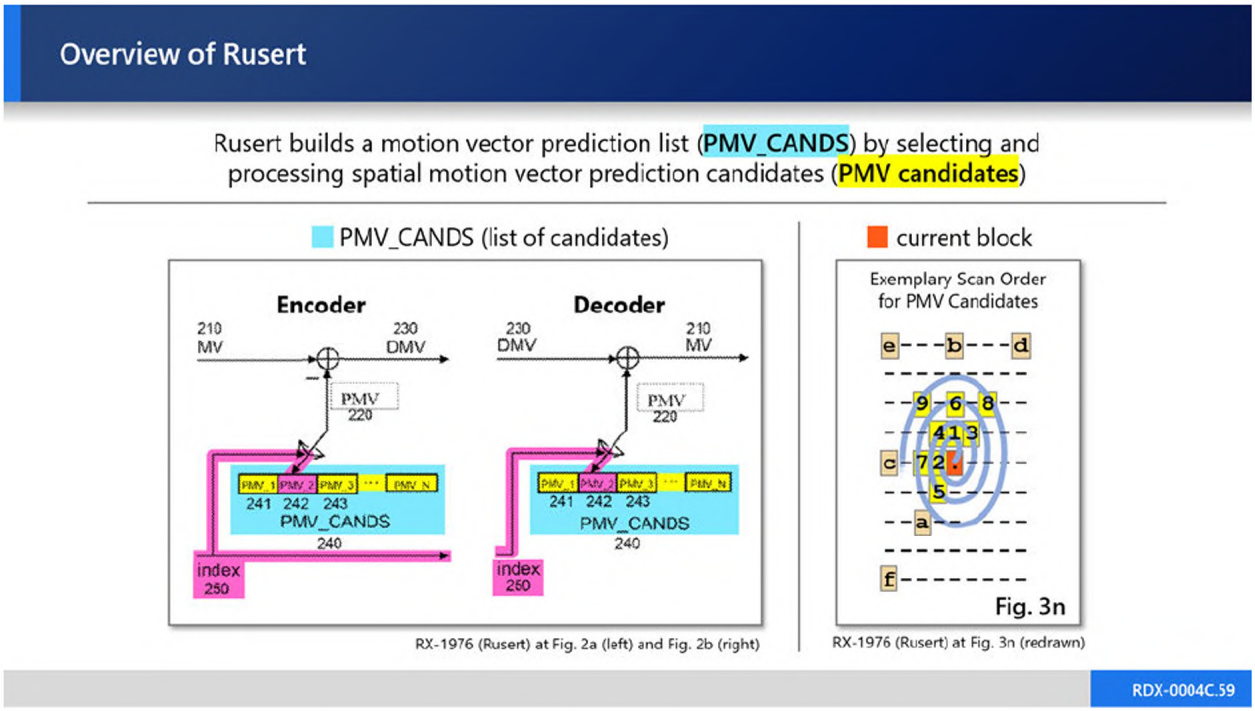
[redacted]

motion vectors," which are not the same as the "candidates" of the Asserted Claims. (*See id.*; *see also* Tr. (Richardson) at 1947:6-1948:2). Rusert's "set of PMV candidates" (i.e., PMV_CANDS) is the claimed "set" because in Rusert, the system does not know whether a location contains a candidate until the scan order reaches that location. (*Id.* at ¶¶ 11, 41, 71; Tr. (Richardson) at 1937:8-1938:10). Moreover, the claimed "set" and "subset" are different. As Dr. Moulin explained, "the key concept is that the subsets ha[ve] to be smaller, strictly smaller than the entirety of the set minus the candidate . . . [o]therwise, there is an exhaustive comparison" which means that Rusert's PMV_CANDS cannot be the set and the subset. (*See* Tr. (Moulin) at 334:19-25).

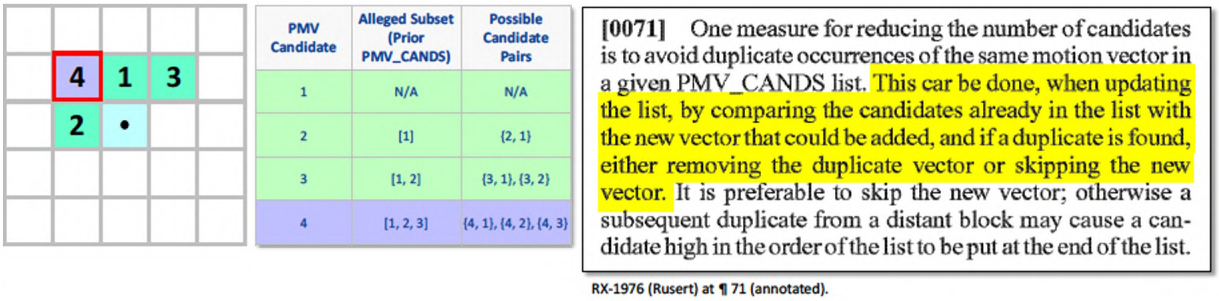
### 2. The Rusert Combination Does Not Disclose Independent Claim Limitations 1[D]/9[D]/15[D]/23[D]

Respondents fail to show that Rusert teaches comparing SMVPCs "without making a comparison of each possible candidate pair from the set of spatial motion vector prediction candidates." Rusert builds the set (PMV_CANDS) according to the scan order and any location beyond the current scan order is not a candidate until it has been checked for an available motion vector. (*Supra* Section III.C.1; Tr. (Richardson) at 1937:8-1938:10 ("Rusert does not know whether any of those further candidates, 7, 8, 9, up to f, are actually even available let alone potential candidates."); RX-1976 (Rusert) at ¶¶ 65, 71). This is confirmed by Rusert itself, calling PMV_CANDS "a set of PMV candidates." (RX-1976 (Rusert) at ¶¶ 4, 11, 41, 71; *see* Tr. (Richardson) at 1937:8-1938:10 (discussing CDX-11.71)). This is also confirmed by RDX-0004C.59 (shown below), which contained an animation turning locations yellow once the scan order visited each location to determine a candidate exists. (Tr. (Richardson) at 1946:10-1948:2 (describing scan order animation on RDX-0004C.59); RDX-0004C.59 (Hemami Demonstratives) (showing locations turn yellow once the scan order has determined whether a candidate exists)).

[redacted]




"Rusert points out that when each of its neighboring locations is evaluated, it compares the new vector . . . with the candidates already in the list." (Tr. (Richardson) at 1948:3-1949:17 (discussing CDX-11.90); RX-1976 (Rusert) at ¶ 71). Dr. Richardson described Rusert as "an exhaustive comparison process" because "each new candidate is compared with every previously considered and stored candidate." (*Id.*). Dr. Richardson used an example from CDX-11.90 to show "all the possible candidates, by the time Rusert gets to location 4 and processes location 4, all of the possible candidate pairs between 1, 2, 3, and 4 have been compared with each other." (*Id.*).




Respondents allege Dr. Richardson's testimony "is at war" with Dr. Moulin's testimony because Dr. Moulin testified the H.265 Standard uses a set of five candidates. (RBr. at 49). This

[redacted]

mischaracterizes Dr. Moulin's testimony. Dr. Moulin explained at the outset that "not all neighbors have a motion vector" and if not, then "it's not even considered." (Tr. (Moulin) at 213:7-215:1 (discussing CDX-3C.22)). Dr. Moulin was clear that locations and SMVPCs are not to be confused. (*See id.* at 328:7-15 ("But let's be clear. We are talking about locations, right? The claim here, the claim element is about subsets of motion vector prediction candidates. So one should not confuse the two.")). As shown here, contrary to Respondents' assertion, Nokia does not "contend that 'set' takes on a different meaning when arguing against the prior art." (*See* RBr. at 49-50).

### 3. A POSITA Would Not Be Motivated to Combine Rusert and Karczewicz

Respondents have the burden of showing that a POSITA would have been "motivated" to make the allegedly invalidating combination—not merely that the combination could have been made. *Auris Health, Inc. v. Intuitive Surgical Operations, Inc.*, 32 F.4th 1154, 1158 (Fed. Cir. 2022) ("The motivation-to-combine inquiry asks whether a skilled artisan not only could have made but would have been motivated to make the combinations . . . of prior art to arrive at the claimed invention.") (internal quotations omitted)). Further, Respondents have the burden of showing that a POSITA would expect the combination to be physically possible. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) ("Although predictability is a touchstone of obviousness, the "predictable result" discussed in KSR refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose.").

Respondents' attempt to meet their burden by arguing that it is enough that the combination is a "straightforward" application of multiple standards. (*See* RBr. at 33-35 ("*First*, the combination is a straightforward and simple application of Rusert's teachings into HEVC blocks. . . . *Finally,* a POSITA would have been successful in making the Rusert combination to

[redacted]

'end up with a working coder [that] would get output.'")). Even if these statements were correct, which they are not, these statements do not satisfy Respondents' burden. Other than saying the alleged combination is "straightforward," Respondents never identify how a Rusert and Karczewicz combination would include Rusert's scan order with Karczewicz's partitions. (*See id.* at 36). But this is what the law requires. *DePuy Spine, Inc.*, 567 F.3d at 1326. Just because some unexplained combination was possible does not show that a POSITA would have been motivated to combine the references to arrive at the claimed invention in a particular way. Respondents' arguments fail to show that a POSITA had a particular goal they wanted to accomplish and that the Rusert Combination would accomplish this goal.

Respondents only other justification for a motivation to combine is that the Rusert combination allegedly results in a "better" prediction than the HEVC Standard. (RBr. at 34). This argument fails because the Rusert combination teaches away from the benefits of the '714 Patent that were adopted into the Standard based on technical merit. As explained by Dr. Richardson, the invention of the '714 Patent was adopted into the H.265 Standard as a merge mode that limited the worst-case number of comparisons to 5 while achieving parallel derivation of merging candidates. (Tr. (Richardson) at 1932:4-1933:6 (explaining how Nokia's contribution which limited comparisons was independently tested and adopted by the JCT-VC); *see also* CDX11.59 and CDX11.60)). In contrast, Respondents' proposed combination increases worst case comparisons while requiring sequential derivation of merging candidates. (*See* Tr. (Richardson) at 1948:3-1949:3 (discussing how an exhaustive comparison of each candidate is made in Rusert)). The Rusert Combination maximizes the number of possible candidates, which—if Rusert reaches 15 candidates in its scan order—increases the worst-case number of comparisons to 105. (*See id.*).

[redacted]

Additionally, a POSITA would not be motivated to combine Rusert and Karczewicz because Rusert's scan order is incompatible with the Karczewicz variable size blocks. (Tr. (Richardson) at 1950:14-1951:23 ("But there's no guidance in Rusert as to how you deal with this situation on the right [of CDX11.94], where that vertical neighbor is split into two, which one do you choose as your candidate.")). At the hearing, Dr. Richardson graphically illustrated examples where the references in the Rusert combination are incompatible with each other due to the variable block sizes in Karczewicz. (*See* CDX11.94). Respondents' response appears to be that Rusert can implement "tie-breaking rules" that "impose an order" and that Rusert has embodiments which support variable block size. (RBr. at 35). However, Respondents never attempted to explain how such tie-breaking rules are implemented into the Rusert Combination. (*See id.*). Notably, Dr. Hemami never stated what the tie-breaking rules she was referencing were, if they can be applied to variable size blocks, or how to implement them. (Tr. (Hemami) 1038:20-1039:3). The spiral scan order Dr. Hemami used for her invalidity analysis also never discusses "tie-breaker rules" for variable size blocks. (*See* Tr. (Hemami) at 1033:16-22 (discussing RDX-0004C.59); *see* RX-1976 (Rusert) at ¶ 65, Fig. 3n). Instead, Respondents' Post-Hearing Brief leaves the enabling of the combination as an excessive for the reader. (*See* RBr. at 35-36). As cited by Respondents, Dr. Hemami's entire testimony on tie-breaking rules states "[s]o Rusert scan, as explained, was inspired by a distance metric. Rusert imposes some tie-breaking rules to impose an order on the distance metric. And the comparisons that Rusert does are based upon the location of the candidate being considered." (Tr. (Hemami) at 1038:24-1039:3; RBr. at 35). As cited by Respondents, Dr. Hemami's entire testimony on variable block size states "[s]o, first of all, we see in paragraph 17 there is an explicit reference to motion compensation partition size. And a couple lines later we see that larger partitions and smaller partitions are specifically called out." (Tr. (Hemami) at

[redacted]

1039:10-13; RBr. at 36). Respondents' conclusory statements and unexplained references to Rusert do not cure the incompatibility that Dr. Richardson demonstrated, and their motivation-to-combine theory should be rejected as failing to meet their clear and convincing burden.

#### 4. The Rusert Combination Does Not Render the '714 Patent Obvious Under Any Construction

For the first time, Respondents argue in their Post-Hearing Brief that the Rusert Combination invalidates the '714 Patent under Respondents' proposed construction of "first spatial motion vector prediction candidate." (RBr. at 41). However, Ground Rule 7.2 requires that "[t]he [Pre-Hearing] brief shall set forth with particularity the authoring party's theories of the case and contentions on each of the proposed issues . . ." therefore "[a]ny contentions and theories of the case not set forth in detail as required herein shall be deemed abandoned or withdrawn . . . ." (Order No. 2 at G.R. 7.2 (emphasis in original)). Thus, this new theory has been waived.

In the event the Court finds that the Respondents' new argument was not waived, Respondents' new theory fails for the same reasons explained above. (*Supra* Section III.C.1). As Dr. Richardson explained, "under Respondents' proposed construction the candidate [first] for processing in Rusert is always candidate 1, if it's available. So whatever that first -- if it's candidate 1, whatever that first candidate is, it's not compared with anything in Rusert. So it couldn't satisfy the asserted claims." (Tr. (Richardson) at 1936:13-23; *see also* CDX11.69).

Respondents' new theory is that under Respondents' proposed construction, Rusert is invalidating prior art because "when 'pre-defined' entries are included in PMV_CANDS, Rusert's candidate 1 would be subjected to the same subset-based comparisons that are claimed in the '714 Patent." (RBr. at 41). Had Respondents timely disclosed this new invalidity theory, Dr. Richardson could have explained at the hearing that, according to Rusert, when PMV_CANDS is initialized with a pre-defined value, that value is not based on the location of the block associated with the

[redacted]

first spatial motion vectors prediction candidate. (*See* RX-1976 (Rusert) at ¶¶ 39, 41). Thus, even under this new theory, there is no "subset" (here, allegedly pre-defined entries in PMV_CANDS) "based on the location of the block associated with the first spatial motion vector candidate."

## IV. U.S. PATENT NO. 11,805,267

Respondents argue that claims 2, 8, 20, and 26 of the '267 Patent are obvious over JX-0683 ("Walker") alone or, alternatively, over Walker in view of RX-2024 ("Srinivasan"). Respondents have several alternative theories spanning Walker and/or Srinivasan. To assist the Court, Nokia has provided a mapping of Respondents' several theories to their references. (*See* App'x § II).

With respect to Respondents' first ground, Walker alone, Respondents offer two different theories to show the "first prediction" and "second prediction" required by the challenged claims. For the first theory, the "predictions" are (pred0)w0 or (pred1)w1 for the encoding claims (claims 2 and 8) and ((pred0)$w_A$)>>6 or ((pred1)$w_B$)>>6 for the decoding claims (claims 20 and 26). (RBr. at 59, 63). This theory has two major failings. First, Respondents have not identified "predictions" because the values they point to are the results from scaling predictions by weights, which Dr. Richardson explained a POSITA would not recognize as predictions. (Tr. (Richardson) at 1910:7-1911:3). Second, these products of a prediction and a weight only have 8 bits of precision because, as Dr. Richardson explained, scaling a prediction by a constant does not change the number bits "needed" or "required to" represent possible values or distinct alternatives as described in the proposed constructions for the term "precision." (*See id.* at 1916:4-1917:11).

Respondents attempt to resolve their precision problem using three incorrect lines of argument. The first argument, Respondents' "bitwidth theory," is that the precision of (pred0)w0 (and similar terms) has higher precision because Walker says 16 bits are used. This is wrong because, as Drs. Richardson and Moulin explained at the hearing, bitwidth (also called bit depth) is not the same as precision. (*Id.* at 1912:21-1913:4; Tr. (Moulin) at 262:22-263:3 ("bit depth . . .

[redacted]

is not the same as precision")). The second argument, Respondents' "variable weights theory," claims that the weights w0 and w1 can take a range of values, meaning that they increase the number of possible values or distinct alternatives when multiplied by a prediction. Dr. Richardson explained that this is wrong. At the point that the weights are applied to predictions in Walker, the weights are fixed for the entire block of prediction values that they scale. (*See* Tr. (Richardson) at 1919:12-22). In fact, weights are fixed for each reference picture, so any given pixel value in a prediction can have one and only one weight applied to it, not changing the number of possible values the pixel value may have. (*See id.* at 1922:13-1924:7). Respondents' third argument is their "interpolation theory," which instead identifies pred0 and pred1 as the claimed predictions and claims these predictions would have a higher precision as the result of interpolation. This argument fails, however, because Respondents cannot identify any interpolation method—in Walker or otherwise—that outputs predictions at a higher precision than input pixels. This is consistent with the state of the art when the '267 Patent was invented. (*See id.* at 2029:9-2030:24 (describing the prior art example shown in Fig. 10 of the '267 Patent)). Existing interpolation methods used clamping to ensure that the output precision was equal to the input precision. (*See id.*). This was the source of the rounding error that the '267 Patent solves. (*See id.* at 1897:1-18).

Respondents' second ground combines Walker with Srinivasan and is effectively a variant of Respondents' interpolation theory. Respondents allege that Srinivasan discloses taking input pixels at one precision and outputting interpolated values at a higher precision. Respondents' proposed combination is to replace Walker's interpolation method with Srinivasan, which they say would mean that pred0 and pred1 have a higher precision. But Srinivasan has the same flaws as Walker and does not output predictions at higher precision than the input pixels. Srinivasan repeatedly describes how, after interpolating 8-bit input values, "necessary clamping is performed"

[redacted]

and "a final 8-bit interpolated value is output." (RX-2024 (Srinivasan) at 18:36-40, 18:60-62, 19:34-36; *see also* Tr. (Richardson) at 1928:5-1929:5). Srinivasan contemplates other input and output precisions could be used (e.g., 10-bit inputs and 10-bit outputs), but Srinivasan does not disclose outputs that are more precise than the inputs. (Tr. (Richardson) at 2039:6-18).

### A. Claim Construction

The term "precision" is disputed. The parties propose the following constructions:

| Claim Term | Nokia's Proposed Construction | Respondents' Proposed Construction | Staff's Proposed Construction |
|---|---|---|---|
| "precision" | Plain and ordinary meaning, which means a measure of the number of distinct alternatives from which a value can be determined: for example, in binary representation, a number of bits required to represent each possible distinct alternative. | Plain and ordinary meaning, which is a number of bits needed to represent possible values. | The number of bits (in binary representation) required to represent each possible distinct alternative. |

Dr. Richardson explained that his validity opinions apply under any proposed construction of "precision." (Tr. (Richardson) at 1912:3-9).

### B. Background of the Asserted References

#### 1. Walker

U.S. Patent Application Publication No. 2005/0281334 ("Walker", JX-0683) is directed to creating a decoder that is compatible with the implementations of biprediction in four different specifications (MPEG-4, WMV9, RV9, and H.264). (JX-0683 (Walker) at ¶¶ 8, 71). Specifically, Walker's "purpose" was to create a "universal formula . . . for decoding four different specifications." (*See* Tr. (Richardson) at 1901:3-13).

Walker describes how the four specifications implement biprediction. (*See* JX-0683 (Walker) at ¶¶ 46 (explaining that ¶¶ 47-70 describe the four existing implementations)). Walker's representation of biprediction according to the H.264 Standard is found in Equation 13:

[redacted]

$$Final\_pred = Clip1[(((pred0)w0 + (pred1)w1 + 2^{\log WD}) >> (\log WD + 1)) + ((o_0 + o_1 + 1) >> 1)] \quad (13)$$

(JX-0683 (Walker) at ¶ 68). In the equation above, predictions pred0 and pred1 are multiplied by weights w0 and w1 and summed in steps that result in the final weighted prediction, Final_pred. Each of the three predictions in Equation 13 are "described as [a] prediction[:] pred0, pred1, and the output, . . . Final_pred." (Tr. (Richardson) at 1909:24-1910:2). Both pred0 and pred1 are "8-bit prediction blocks of 8-bit prediction samples." (Tr. (Richardson) at 1906:14-17). Across implementations, Walker consistently uses "pred" to refer to predictions, and each "pred" consists of 8-bit samples. (Tr. (Richardson) at 1907:1-5). Walker's universal formula is presented in Equation 18 (shown below). (*See* JX-0683 at ¶¶ 91-92).

$$pred_{ij} = ((((pred0)w_A) \gg 6 + ((pred1)w_B) \gg 6) + 2^7) \gg 8 + \text{Offset} \quad (18)$$

This equation is like Equation 13 except that "$W_A$, $W_B$ and Offset can be calculated by the pre-processor based on what implementation was used to encode the weight parameters." (*Id.* at ¶ 93).

Walker's weights w0 and w1 (or $W_A$ and $W_B$) do not vary when applied to a prediction block. Walker's implementation of H.264 is instructive. In H.264, "across all the blocks of a frame or slice, the weights are constant." (Tr. (Richardson) at 1919:6-7; *see also* Tr. (Schonfeld) at 1469:20-1470:19). This is because weights "are tied to the reference frame." (Tr. (Richardson) at 1919:7). Walker follows this approach for all implementations: "weights are constant across the reference frame." (Tr. (Richardson) at 1919:21-22). In H.264, weights are constant because they are "transmitted in the slice header" or "calculated based on . . . the relative temporal positions of the reference frames." (Tr. (Richardson) at 1921:25-1922:12). Walker confirms it uses "weighting based on temporal distance to past and future frames." (Tr. (Richardson) at 1922:17-19).

[redacted]

**2. Srinivasan**

U.S. Patent No. 7,620,109 ("Srinivasan", RX-2024) is directed to improved methods of "generating interpolated samples between integer or existing pixel values." (Tr. (Richardson) at 1907:12-15). One way Srinivasan accomplishes this is by using intermediate values at a higher bit depth than input and output values, which can defer shifting or clamping values, resulting in higher interpolation accuracy. (RX-2024 (Srinivasan) at Abstract).

Like the prior art discussed in the '267 Patent (*see* JX-7 at 3:49-55, Fig. 10), Srinivasan does not maintain precision of interpolated predictions (i.e., the output values) at higher than input precision. Srinivasan consistently specifies that the interpolation process outputs at the same precision as the input. (Tr. (Richardson) at 1928:10-11). Srinivasan references a bit depth of "x+1," but the additional bit "is there to deal with overflow and underflow, and it's not part of the output." (Tr. (Richardson) at 1928:14-20; *see also* RX-2024 (Srinivasan) at 18:2-7 ("the valid range of the interpolated data is only 8 bits, the extra one bit of headroom provides overflow and underflow information")). Rather, the bit is used to "convert [the output] to a correct 8-bit value, which can range from 0 to 255." (Tr. (Richardson) at 1928:23-1929:5).

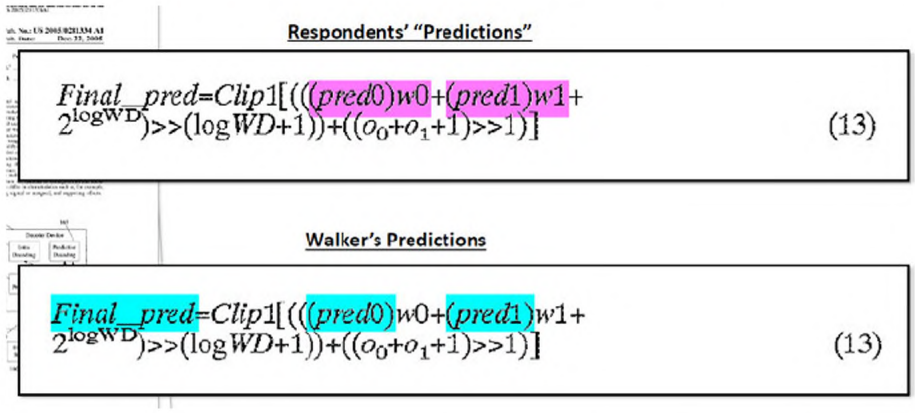
Srinivasan makes one reference to an input and output bit depth greater than 8-bit. Srinivasan notes that input, output, and intermediate value bit depths can be "extended arbitrarily." (RX-2024 (Srinivasan) at 20:21-25). Here, Srinivasan is "consistent with, for example, a 10-bit implementation rather than an 8-bit implementation." (Tr. (Richardson) at 2039:9-14). In a 10-bit implementation, a higher bit depth is used throughout, including at both the input and output of the interpolation filter. (Tr. (Richardson) at 2039:15-18). Thus, in these scenarios, too, Srinivasan does not maintain interpolated predictions at precisions higher than input precision.

[redacted]

### C. Walker Does Not Render the Asserted Claims Obvious

#### 1. What Respondents Identify as the "first prediction" and "second prediction" are not Predictions

The challenged claims require "us[e/ing] said first reference block to obtain a first prediction" and "us[e/ing] said second reference block to obtain a second prediction." JX-7 ('267 Patent) at Cl. 1, 7 (encoding claims), 19, 25 (decoding claims). Respondents argue that these limitations are met by (pred0)w0 and (pred1)w0 respectively for the encoding claims. For the decoding claims, they argue that $((pred0)w_A)>>6$ and $((pred1)w_B)>>6$ meet the analogous limitations in a similar manner. This mapping cannot not meet the claims' "first prediction" and "second prediction" limitations because, as Dr. Richardson explained, Respondents have identified scaled values resulting from scaling a prediction by a weight rather than an actual prediction. (Tr. (Richardson) at 1909:14-1910:5 (discussing CDX-11.30, reproduced and cropped below). These scaled values are "an arbitrary choice of something that is not described as a prediction in Walker, and a person of ordinary skill would not recognize as a prediction." (*Id.* at 1910:7-1911:3; CDX-10.30 (highlighting what Respondents call "predictions" in magenta).




As Dr. Richardson explained, there are three predictions disclosed in Walker (highlighted in cyan above). The first two, pred0 and pred1, are individual predictions from reference frames which are combined to form the third prediction, Final_pred, the output combined prediction. (*Id.*

[redacted]

at 1909:14-1910:5; JX-683 (Walker) at Eq. 13). The reason that Respondents have not identified what Walker itself calls predictions is simple—it is undisputed that pred0 and pred1 have 8 bits of precision, too little to satisfy the challenged claims. (Tr. (Richardson) at 1906:18-1907:8; Tr. (Schonfeld) at 1368:4-17 ("[pred0 and pred1] were at 8 bits resolution")). Because Walker's real predictions could not meet their burden, Respondents resort to identifying "some other value in the process," one that "is simply not a prediction." (Tr. (Richardson) at 1906:18-1907:8). The same problem is present with respect to the decoding claims, ((pred0)$w_A$)>>6 and ((pred1)$w_B$)>>6 are no more predictions than (pred0)w0 and (pred1)w1. (*See id.* at 1908:20-1909:6 (discussing CDX-11.28)). For this reason alone, Respondents' invalidity theories should be rejected.

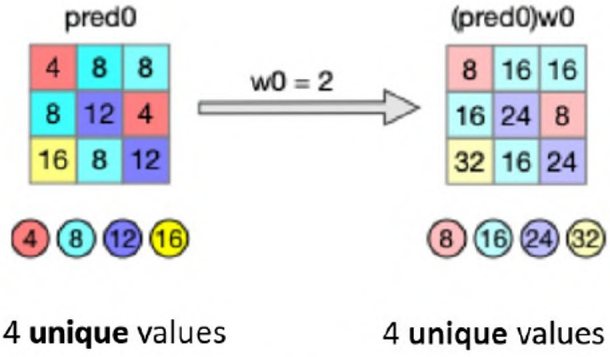
### 2. The Products (pred0)w0 and (pred1)w1 do not Have a Second Precision Higher than the First Precision

Respondents rely on the incorrect claim that the result of scaling a prediction by a constant weight has a higher precision than the prediction. (*Id.* at 1911:4-14 (discussing CDX-11.32)). Dr. Richardson explained that Respondents cannot show this under any of the proposed constructions of "precision," each of which "specify precision as a number of bits needed or required to represent possible values or distinct alternatives." (*Id.* at 1911:15-1912:9). The problem for Respondents is that Dr. Schonfeld fails to grapple with the "needed" or "required" language in each construction. In each case, Dr. Schonfeld's testimony amounts to equating, without justification, the number of bits used (i.e., the bitwidth of a value) to the number of bits needed or required. (*Id.* at 1912:21-1913:4 ("Bitwidth is the number of bits used . . . I can use more bits than I need . . . that's exactly what Walker has done")). Respondents cannot prove invalidity by clear and convincing evidence without addressing what the claim term "precision" requires under any of the parties' proposed constructions.

[redacted]

**a. Respondents' Bitwidth Theory does not Establish that More Bits are "needed" or "required."**

Respondents argue (pred0)w0 and (pred1)w1 (or the analogous terms for the decoding claims) have a higher precision because Walker states 16 bits are used for these products in Table 2. (RBr. at 59). Respondents claim that their reasoning is consistent with the reasoning 1380 ID, but Judge Elliot never construed the meaning of "precision." (1380 ID at 110). The record on this issue is also significantly more developed than the record in the 1380 Investigation. Although Respondents claim that Dr. Schonfeld applied a construction consistent with their proposed construction in this Investigation, neither the 1380 ID nor Dr. Schonfeld addressed why the 16 bits listed in Table 2 are "needed" or "required" to represent "possible values" or "each distinct alternative." They are not. As Dr. Richardson explained, applying a scaling factor to a set of prediction values does not alter the number of possible values or distinct alternatives in any way. (Tr. (Richardson) at 1916:4-1917:11 ("if it [precision] was 8 bits before, it's still 8 bits after scaling") (discussing CDX.11-37, cropped below)).



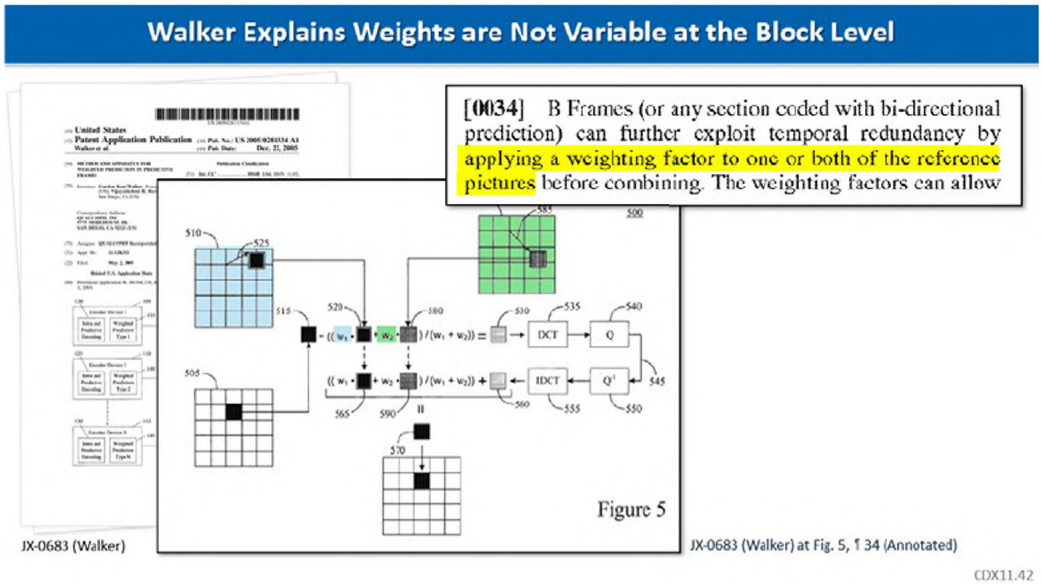

Dr. Richardson's example shows a block of prediction values—pred0—with "four unique values on the left, 4, 8, 12, and 16." (*Id.* at 1915:6-1916:3). Because there are four unique values, one "actually only need[s] 2 bits" to represent them. (*Id.*). This does not change if a scaling factor, such as w0 = 2, is applied. Scaling by a factor of 2 simply remaps each pred0 value to a new set of unique values. (*Id.* ("the relationship, of course, is that I got to the ones on the right by doubling

[redacted]

them, doubling the numbers on the left"), *id.* at 1916:4-17 ("every sample within that block is scaled by the same amount")). These possible values (distinct alternatives) are numerically larger, as represented by the brighter colors in CDX.11-37, but there are not more of them. With four unique values before and after scaling, precision remains the same. (*Id.* at 1915:6-1916:3).

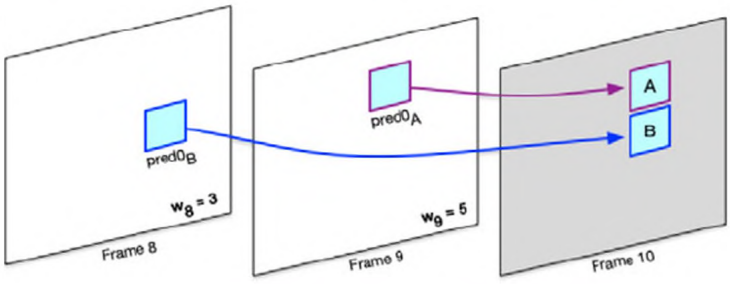
**b. Respondents' Variable Weights Theory Misunderstands Weighting**

Respondents offer an alternative argument that Walker "needs" 16 bits to represent (pred0)w0 under any construction because both pred0 and w0 are 8-bit values that each have 256 possibilities such that multiplying them would result in even more possible values. (RBr. at 75). Respondents misunderstand Walker. As Dr. Richardson explained, for any given block of prediction samples, the same weight is applied to each sample. (Tr. (Richardson) at 1918:17-1919:11 ("the weights, when they are in use, are not variable at the block level")). This is because Walker's bipredication implements a unified version of biprediction from MPEG-4, WMV9, RV9, and H.264, none of which allow weights to vary at the block level. (*See* Tr. (Richardson) at 1918:9-1921:12 (discussing CDX-11.42, reproduced below)).



[redacted]

MPEG-4 and WMV9 do not include weighted biprediction at all. (*Id.* at 1918:2-16). In RV9, weights are computed based on the temporal distance of a reference frame from the current frame, meaning that every block in the same frame or slice predicted from the same reference frame will have the same weight, which is applied to every sample of the block. (*Id.* at 1919:23-1920:16). H.264 includes multiple weighting modes, but each mode determines a weight that is applied uniformly to any prediction obtained from a reference frame. (*Id.* at 1918:17-1919:22 ("the weights are constant across the reference frame"); Tr. (Schonfeld) at 1469:20-1470:19 (agreeing that H.264 weights are not transmitted at the block level)). In Walker, a constant weight is always applied to all samples in a block of prediction samples (i.e., pred0 or pred1).




Current block A : 256 possible values per sample
Reference frame = 9
$pred0_A$ : 256 possible values per sample
Weight $w0_A$ = 5

Current block B : 256 possible values per sample
Reference frame = 8
$pred0_B$ : 256 possible values per sample
Weight $w0_B$ = 3

Respondents confuse the meaning of Dr. Richardson's explanation that weights do not vary "at the block level" by citing to his demonstratives at CDX-11.48 (cropped above). (CDX-11.48 shows a weight of 5 being applied to block A (which is predicted from "Frame 9"), and a weight of 3 being applied to block B (which is predicted from "Frame 8")). Respondents say this proves that Walker has variable weights. (*See* RBr. at 75-76). This is sophistry. Whether or not weights can vary from block to block, they are fixed ***for a given block***. (Tr. (Richardson) at 1924:8-1925:2).

[redacted]

In other words, at the block level, Walker's weights are constant. Because Walker's weights are constant, the same conclusions discussed above follow: The application of a weight only remaps the 256 possible values of pred0's samples to a different set of 256 possible values. (*See id.* at 1915:6-1916:3). But the number of possible values (distinct alternatives) remain the same—at 256. Thus, only 8 bits are "needed" to represent them. This conclusion is no different under any proposed construction of "precision," each of which captures the same fundamental notion that precision is measured according to the number of bits "needed" or "required," not the number of bits used. (*See id.* at 1911:15-1912:2).

Respondents claim that Dr. Richardson misapplies Nokia's construction of "precision," disputing whether it means weights must be applied on a block-by-block basis. (RBr. at 76). But Dr. Richardson's opinion here does not originate from any proposed construction. Rather, the claims themselves each state a "[method/apparatus] for [decoding/encoding] ***a block of pixels***" and the first/second predictions must have a greater precision than the values of pixels of the current block, the first reference block, and the second reference block. (JX-7 ('267 Patent) at cls. 1, 7, 19, 25 (emphasis added)). Respondents attempt to bolster their argument by claiming that Dr. Richardson agreed that "multiplying a variable that can take the full range of its possible values by another variable that can take the full range of its possible values can increase the number of values for the resulting product…." This is a question Dr. Richardson was asked during cross examination. (RBr. at 76 (citing Tr. (Richardson) at 1990:5-11)). Respondents omit Dr. Richardson's answer to that question: "if those are variables and not constants, then I agree with you." (Tr. (Richardson) at 1990:5-11). The weights in question are constants because, for any given reference block, they are determined by the reference frame used. (*See id.* at 1922:23-1924:7). As a result, the weights of Walker cannot "take the full range of possible values" as

[redacted]

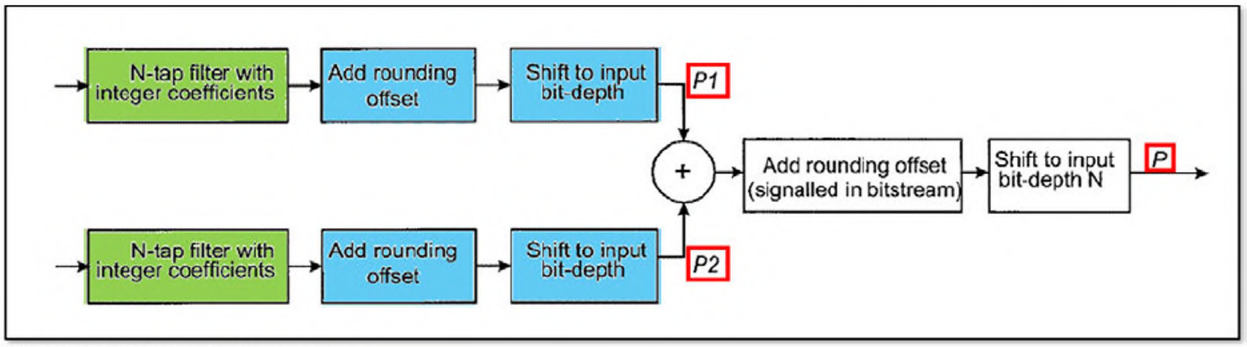
Respondents argue. Rather, they can take only one value for each prediction. (*See id.*). Consequently, pred0 and (pred0)w0 have the same number of possible values (or distinct alternatives). (*See id.*). Thus, Respondents' variable weights argument should be rejected.

**c. Respondents' Interpolation Theory is Not Supported by Walker's Disclosure**

Respondents offer yet another alternative theory with respect to Walker in which they allege that pred0 and pred1 (rather than (pred0)w0 and (pred1)w1) are the first/second predictions of the challenged claims. Respondents' claim is that pred0 and pred1 could have a higher precision when obtained by interpolation. (RBr. at 77). This is not disclosed in Walker, which consistently describes pred0 and pred1 as "8-bit luminance and chrominance . . . samples from prediction blocks." (JX-0683 (Walker) at ¶ 60, Table 2; Tr. (Richardson) at 1925:3-22 ("Walker's pixel interpolation does not generate anything other than 8-bit prediction values")). Respondents' only support for their theory is that Walker alludes to the existence of "other interpolation methods." (RBr.at 77 (acknowledging that such methods are not "explicitly disclosed in Walker")).

According to Respondents, these "other interpolation methods" could be one of three things: (1) Srinivasan's interpolation, (2) the interpolation discussed in Nokia's opening slides, or (3) "other known methods." (*Id.*). (1) Srinivasan is addressed below. Respondents' reference to (3) "other known methods" requires no response because Respondents do not explain what those "known methods" are and cite nothing in support. As for (2), the interpolation from Nokia's opening slides originates from the '267 Patent's Figure 10. (Tr. (Opening) at 42:8-18 (discussing JX-7 at Fig. 10)). Respondents' assertion that "Dr. Richardson's argument contradicts Nokia's opening statement" is wrong. (RBr. at 77). Dr. Richardson explained how the interpolation shown in Figure 10 does not result in predictions with higher precision. (Tr. (Richardson) at 2029:21-2030:10 (discussing CDX-11.6, cropped below)).

[redacted]




JX-0007 ('267 Patent) at Fig. 10 (annotated).

Dr. Richardson explained that "the output of the green box is an intermediate value, which – I actually think the '267 Patent describes as potentially having a higher precision" however, "what's used as a prediction is P1, which has been further operated on to bring it back down . . . to the input pixel bit-depth." (*Id.*). This is precisely the problem with the interpolation in every one of Respondents' references (including Srinivasan, discussed below). Regardless of whether the interpolation could yield more precision, it is immediately clamped to the input bit depth, resulting in predictions at the input precision. In fact, the interpolation depicted in Figure 10 is the interpolation method used in H.264, which Walker discusses. (*Id.* at 2030:20-24). Accordingly, the incorporation of this interpolation method would change nothing about Walker's predictions having the same precision as input pixels. Thus, Respondents' argument should be rejected.

### D. Walker in View of Srinivasan Does Not Render the Asserted Claims Obvious

#### 1. Srinivasan Does Not Disclose Outputting Higher-Precision Predictions

Respondents argue that a POSITA would combine Srinivasan with Walker to obtain a system that generates predictions at a higher precision than the input pixels. Respondents are incorrect because nothing in Srinivasan teaches that the results of interpolation could have a precision higher than the inputs. (Tr. (Richardson) at 1928:5-20 ("Srinivasan consistently describes the final output value as being 8-bit")). Respondents hinge their argument on Srinivasan's disclosure that "[a]lternatively, the input values and/or output values have dynamic ranges of

[redacted]

different bit depth" and "the dynamic range of the output value is equal to x or x+1." (RBr.at 73 (citing RX-2024.26 at 20:30-32, 21:33-47)). However, Respondents misinterpret Srinivasan's disclosure regarding output values that can have a dynamic range of x+1 bits. As Dr. Richardson explained, the extra bit described in Srinivasan "is there to deal with overflow and underflow, and it's not part of the output, the final interpolated value of Srinivasan." (Tr. (Richardson) at 1928: 5-20 (discussing CDX-11.54)). Srinivasan repeatedly describes obtaining a 9-bit value (i.e., 8+1 bits) where "necessary clamping is performed" based on "the extra one bit of headroom [that] provides underflow and overflow information." (RX-2024 at 18:1-7, 18:36-40, 18:60-62, 19:34-36). In other words, although "intermediate values could be higher than 8 bits in Srinivasan, the result of interpolation is the original bit-depth, which in this example is 8 bits." (Tr. (Richardson) at 1929:6-20, 2027:25-2028:21 ("It starts with 8 bits, ends with 8 bits")).

Srinivasan's disclosure of "different bit depth" dynamic ranges also does not disclose outputting interpolated values with precisions different from the input. When asked about Srinivasan at 20:20-32 on cross-examination, Dr. Richardson explained disclosure is "entirely consistent with, for example, a 10-bit implementation rather than an 8-bit implementation." (*Id.* at 2038:18-2039:18). That is, Srinivasan contemplates that rather than an implementation that "starts with 8 bits, ends with 8 bits," an alternative would be to "work with 10-bit pixel values from the start and create, for example, 10-bit predictions." (*Id.* at 2027:25-2028:21, 2038:18-2039:18). But such an implementation would still not render the challenged claims obvious because the input and output precisions would be equal, which is not what is required by the '267 Patent's claims.

### 2. A POSITA Would Not Be Motivated to Combine Srinivasan with Walker

As discussed above, Srinivasan does not disclose an interpolation process that produces higher-precision predictions. Nonetheless, Dr. Richardson explained that a POSITA would not

[redacted]

have a reasonable expectation of success in combining a system that output predictions with increased precision into the disclosure of Walker. (Tr. (Richardson) at 1930:11-1931:13). Walker's focus is the derivation of a "universal formula" which requires specific bit widths to be used at each stage of the process. (*See* JX-0683 (Walker) at ¶ 72 ("universal weight prediction factors having a specific bit configuration must be derived")). As Dr. Richardson explained, assuming that Srinivasan produced a 9-bit output (which it does not):

> . . .we still have to deal with how do we use those 9-bit values in the motion compensation, how do we create pred0 and pred1, which Walker says remain at 8 bits, and how do we then carry out Walker's operations thereafter, and how do we do that in such a way that we deal with all the possible integer and subpixel positions that the motion vectors would be pointing to.
>
> And Dr. Schonfeld -- I didn't hear Dr. Schonfeld or read Dr. Schonfeld explain at any point how one would actually do that. And, in my view, one would not have a reasonable expectation of success without identifying and solving a number of problems, which I don't know how to solve.

(Tr. (Richardson) at 1930:11-1931:13). Respondents' expert never addressed the problems this proposed combination would introduce. Introducing higher-precision predictions into Walker would interfere with the "specific bit configuration" which a significant part of the reference is devoted to deriving. (*See id.*; JX-0683 at ¶¶ 72-108 (describing the derivation and bit widths of each term in Walker's universal formula)). Accordingly, a POSITA would not have a reasonable expectation of success in combining Walker and Srinivasan and would not be motivated to do so.

### E. Secondary Considerations

The Court need not reach the question of secondary considerations because Respondents' grounds fail as described above. However, Respondents never address the objective indicia of non-obviousness raised by Nokia. (RBr. at 83 (claiming "Nokia presented no evidence of secondary considerations")). Secondary considerations must be considered when present. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983) (". . . 'secondary considerations' must

[redacted]

always when present be considered . . ."). Dr. Richardson explained the rounding error problem represented a long-felt but unresolved need up to when the '267 Patent was invented:

> At the time of the invention, the committee, the JCT-VC that was working towards developing the H.265 Standard, had identified this [rounding error] problem. Various attempts were made to solve it, but it was not resolved by this stage, and the whole draft standard had been split into what they called high efficiency and low complexity parts, partly because of this problem with rounding error and prediction inaccuracies.

(Tr. (Richardson) at 1898:5-18 (discussing CDX-11.7)). Not only does this evidence the non-obviousness of the invention, this highlights that neither Walker nor Srinivasan was considered by the JCT-VC (a committee of video coding experts) to have solved this problem, despite Respondents' claim that they teach the same thing as the challenged claims. The '267 Patent was also the subject of industry praise, as evidenced by Nokia's associated contribution being adopted to replace the "high efficiency" and "low complexity" modes that attempted to address the problem in the early standard. (*See* Tr. (Richardson) at 1899:4-16). Following the invention of the '267 Patent, the question of how to address accumulation of rounding error was settled—other specifications, such as the AV1 Specification, adopted the same technique of maintaining prediction precision through the combination process of biprediction. (*See* Tr. (Moulin) at 263:23-264:9 (explaining "all these concepts are exactly the same in AV1" with respect to the '267 Patent)). This reflects industry praise and broad adoption of the claimed technique. These secondary considerations further support the validity positions discussed above—the invention of the '267 Patent marked a transition from varied, less effective methods of addressing the accumulation of rounding error to a simpler, more effective solution that was never used before but is now used in two prominent video decoding specifications.

[redacted]

## V. ALLEGED REDESIGNS

Respondents' post-hearing arguments for why their alleged redesign is purportedly ripe for adjudication are irreconcilable with their arguments at the Hearing for why that same redesign purportedly avoids infringement of the Asserted Claims. In their Post-Hearing Brief, Respondents contend that their alleged redesign is ripe for adjudication and provide an analysis of the four *Milk* factors. (RBr. at 83). Under this analysis, Respondents claim that their alleged redesign is "sufficiently fixed in design, having been implemented in working computers and inspected and/or operated by Complainants." (RBr. at 84).

At the Hearing, however, Respondents [redacted] characterized the very same products as "prototypes." [redacted] Tr. (Respondents' Opening Statement) at 99:3-5 ("But, more importantly, more importantly, these products that Nokia's experts came to inspect are prototype products.")). [redacted]

[redacted]

## VI. REMEDY AND BONDING

Respondents have requested carve-outs and delayed implementation of any remedial orders on three bases. No tailoring of any sort is warranted. (*See* CBr. at § XI (Remedy and Bond)).

First, Respondents request to "delay the exclusion order until the UK rate-setting proceeding is complete and Respondents have had the opportunity to take a license at the adjudicated RAND rate." (RBr. at 96). As discussed below and in Nokia's Initial Post-Hearing Brief (*see* CBr. at § XI.A.1.a.), there is no reason or legal support for the Commission to permit Respondents to continue to infringe Nokia's U.S. patent rights while waiting indefinitely for a foreign court's decision. *See* 1379 ID at 126 ("I disagree with Amazon's unsupported request for an indeterminate period of delay. Amazon . . . ignored the impact of its continued importation and

[redacted]

sale of infringing products during an unknowable delay waiting for a judicial determination.").

Respondents also argue that the UK proceedings preclude any remedy. As discussed further in Section VII.A, *infra*, RAND is not its own public interest factor, Respondents fail to tie their RAND-related arguments to any specific public interest factor, and Respondents' RAND defense and contentions fail on the merits. *See, e.g.*, *Certain LTE- and 3G-Compliant Cellular Commcn's Devices*, Inv. No. 337-TA-1138, RD at 2 (Apr. 3, 2020) ("*Certain LTE/3G Devices*") (stating that assessment of a FRAND violation "is not one of the public interest factor considerations and would not preclude the Commission from issuing a remedy."). Respondents' RAND-related arguments should be rejected.

Second, Respondents seek a carve-out for the education segment, alleging that there may be "disproportionate harm" to K-12 schools and students. (RBr. at 96). As discussed further below and in Nokia's Initial Post-Hearing Brief (*see* CBr. at § XII.A.), Respondents presented no evidence—disproportionate or otherwise—to K-12 schools and students. Indeed, Respondents' own expert, Dr. Seth, disavowed considering student outcomes at all. (Tr. (Seth) at 1870:2-5).

Third, Respondents request a warranty and repair exemption. (RBr. at 96-97). To justify such an exemption, the Commission considers, among other things, evidence of "the expectation of consumers" and the "terms of any available warranties for the device." *Certain Graphics Systems, Components Thereof, And Digital Televisions Containing the Same*, Inv. No. 337-TA-1318, Comm'n Op. at 83 (Feb. 23, 2024) (collecting cases). Respondents fail this standard. They baldly assert that they each have a warranty policy, but fail to demonstrate their customers' expectations or to address their warranty terms, which do not support an exemption. (RBr. at 97 (citing RDX-11C.32, which cites RX-1150, RX-1131, JX-0083C)). Acer's warranty terms allow it to refund the purchase price (*see* RX-4022 – RX-4024), making an exemption unnecessary.

[redacted]

*Certain Magnetic Data Storage Tapes & Cartridges Containing Same (II)*, Inv. No. 337-TA-1076, Comm'n Op. at 61-62 (June 20, 2019) (declining exemption where respondent could provide a refund rather than replace or repair the product). ASUS fares no better. No evidence shows ASUS's warranty terms for the ASUS Accused Products. (*See* RX-1131 (only providing steps on "How to Inquire Warranty Status"); JX-0083C ([redacted]); *see also* JX-0085C–JX-0095C ([redacted]). There is "no evidence of contractual terms or warranties that demonstrate the obligation to perform [repair or replacement] services or other evidence of consumer expectations . . . ." 337-TA-1076, Comm'n Op. at 61-62. A warranty exception is not supported.

## VII. PUBLIC INTEREST

Relief must be granted upon a finding of a violation unless the statutory public interest factors dictate otherwise. Respondents' shares of the U.S. PC market do not give rise to any legitimate public interest concern given the myriad functional substitutes available. To distract from the lack of any legitimate public interest concerns, Respondents resort to resurrecting a defunct injury requirement that Congress wrote out of law decades ago. (*See* RBr. at 90 ("If the adverse impact of an exclusion order exceeds the benefit to the patent holder, relief should not issue."); *see generally id.* at 89-91). Since 1988, a complainant has not needed to show injury because Congress "explicitly remov[ed] the requirement of proof of injury to the domestic industry and making it unnecessary to show irreparable harm to the patentee in the case of infringement by importation." *Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1358-59 (Fed. Cir. 2010); *see also id.* (citing S. Rep. No. 100–71 at 129 (1987) ("The Committee does not intend that the ITC, in considering the public health and welfare, or the President, in reviewing the ITC's determination on policy grounds, will reintroduce these [injury] requirements.")).

[redacted]

Even more, while Respondents claim that "Nokia would gain no cognizable benefit from an exclusion order" (RBr. at 89-90)—which is not a prerequisite to remedial orders—Respondents "ignore[] the benefit arising simply from vindication of [Nokia's] patent rights." 1380 ID at 181 (rejecting public interest argument that "Nokia 'would receive no benefit from an exclusion order'"); *Certain Display Controllers*, Inv. 337-TA-491/481, Comm'n Op. at 66 (Feb. 4, 2005) (protecting U.S. IP rights "foster[s] research and development of new technologies and will lead to greater competition in the marketplace"); *Certain Baseband Processor Chips*, Inv. 337-TA-543, Comm'n Op. at 136-37 (June 19, 2007) (noting Congress's express rejection of an injury requirement in favor of protecting the "strong public interest" in enforcing U.S. IP rights). Respondents' characterization of Nokia as "foreign" is both wholly irrelevant and misleading. Nokia has substantial U.S. facilities and employs thousands of U.S. citizens as part of its infrastructure business. (*See, e.g.*, Tr. (Nokia Opening) at 19:14-23; RX-0728.006 (Nokia 2024 Annual Report)).

In the same vein, Respondents' argument that they—the infringers—are "precisely the enterprises Congress intended Section 337 to protect" is illogical. (RBr. at 90). Precluding a remedy because unlicensed infringers' businesses might suffer the consequences of their own infringement undermines Section 337's *actual* purpose—protecting U.S. intellectual property rights against importing infringers. *See Certain Display Controllers*, Inv. No. 337-TA-491/481, Comm'n Op. at 66 (Feb. 2005). Regardless, there is no concrete evidence of harm to Respondents' businesses, let alone their U.S. business.

### A. Nokia's RAND-Encumbered Asserted Claims Do Not Preclude Exclusionary Relief Under Section 337

Under longstanding Commission precedent, patentees are not precluded from seeking and receiving exclusionary relief under Section 337 when the asserted claims are RAND-encumbered.

[redacted]

*See UMTS and LTE Cellular*, Inv. No. 337-TA-1240, RD at 19-20 (collecting cases) ("Even if the asserted patents are SEPs, it has not been shown that issuing an exclusion order based on infringement of patents subject to a FRAND declaration is contrary to the public interest."); *Certain LTE/3G Devices*, Inv. No. 337-TA-1138, RD at 6 (Apr. 3, 2020) ("[N]o Commission precedent [] supports" the argument that "a violation of FRAND principles bars an exclusion order."); *accord Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1331-32 (Fed. Cir. 2014) ("To the extent that the district court applied a per se rule that injunctions are unavailable for SEPs, it erred. . . . [W]e see no reason to create . . . a separate rule . . . for addressing injunctions for FRAND-committed patents."). There is no reason to depart from this precedent in this Investigation. RAND itself is not a public interest factor, and Respondents fail to tie their RAND-related arguments to any specific public interest factor. *See, e.g.*, *Certain LTE/3G Devices*, Inv. No. 337-TA-1138, RD at 2 (Apr. 3, 2020) (stating that assessment of a FRAND violation "is not one of the public interest factor considerations and would not preclude the Commission from issuing a remedy.").

Respondents argue that an exclusion order is improper because they are willing licensees but cite no authority requiring Nokia to demonstrate Respondents' unwillingness to obtain exclusionary relief. Regardless, Respondents' purported evidence of willingness is that they committed to accept a rate that may be set by the U.K. High Court (RBr. at 89). Respondents' transparent attempt to erase years spent holding out during negotiations with Nokia only to run to a foreign court after Nokia sought to enforce its U.S. patent rights is a bad faith tactic of an unwilling licensee: "not taking a license before [] exhaust[ing] [its] litigation options" and "then demand[ing] FRAND status when caught" because "the only risk to them . . . is to pay a FRAND based royalty." *Certain Wireless Devices with 3G and/or 4G Capabilities*, Inv. No. 337-TA-868, ID/RD at 114 (June 13, 2014). Even more, Respondents expressly preserved the right to appeal in

[redacted]

the U.K., a process that will prolong Respondents' infringement by years, in a direct challenge to the Commission's mandate to adjudicate and remedy infringement expeditiously.

### B. The Statutory Public Interest Factors Do Not Weigh Against Relief

Respondents improbably assert that no readily available alternatives exist in the competitive PC market, so an exclusion order should not issue for it "would harm competitive conditions in the U.S. economy, U.S. consumers, and the public health and welfare." (RBr. at 96). Respondents' claims are entirely unsupported in fact and untethered to those superficially-referenced public interest factors. *See, e.g.*, *Certain Wireless Devices with 3G and 4G Capabilities and Components Thereof*, Inv. No. 337-TA-868, Order No. 84 at 4 (Dec. 18, 2013) (the public interest inquiry "must be tethered to the four statutory factors").

Respondents claim that there are no alternative products to meet demand, but wholly fail to address the evidence that [redacted] of the market is currently supplied by alternative, directly substitutable products through existing supply chains. Respondents proffer three unsupported reasons to ignore those market realities; none is correct.

**Switching Costs.** Respondents claim—without evidentiary support—that "academic research indicates operating systems carry the highest switching costs of almost any industry in the United States." (RBr. at 92). These alleged switching costs are unsubstantiated, and as a result, "[t]he potential inefficiencies of using multiple [PC] vendors for some [Acer and ASUS] customers nonetheless would not appear to outweigh the benefit to 'the U.S. economy [of] enforcing valid intellectual property rights' if there is a violation here." *Certain Vehicle Telematics, Fleet Management, and Video-Based Safety Systems, Devices, and Components Thereof*, Inv. No. 337-TA-1393, ID/RD at 284 (Sept. 8, 2025) ("*Certain Vehicle Telematics*") (citation omitted).

First, Respondents do not actually cite any "academic" evidence, as they cite only a demonstrative, which lists a string of 25 exhibits. (*See* RBr. at 92 (citing RDX-11C.21)). None of

[redacted]

those 25 exhibits support Respondents' claim or is even an academic paper published in the last 15 years based upon current market conditions. Second, there will be no switching costs for the existing installed computers because remedial orders will not displace any computer already in a consumer's possession. (*See* Tr. (Akemann) at 968:9-12). Third, to the extent schools currently using Acer or ASUS Chromebooks wish to purchase additional devices, no evidence supports any burden. Schools already operate devices from multiple manufacturers with the same operating system, (*e.g.*, CX-1932 (LAUSD offering Dell, HP, and Lenovo Chromebooks); RX-0743 (Google search results for Chromebooks listing numerous brands)), and neither Respondents nor its expert Dr. Seth identified any "unique functionality for students [on Acer and ASUS computers] not available on other computers." (Tr. (Seth) at 1869:23-1870:1). Indeed, Respondents tout their share of the Chromebook segment, but Chrome OS is specifically designed to be hardware agnostic—"[a]ny Chromebook is supposed to work with any other Chromebook" because the "operating system and software run[] in the cloud." (Tr. (Akemann) at 2110:21-2111:2). Nor have Respondents shown that switching from Chrome OS to Windows or Apple OS would materially affect educators or consumers. The evidence confirms that "there's clearly a lot of switching and competitiveness across Chromebooks and/or typically other lower-priced laptop products." (Tr. (Akemann) at 2110:15-17). For example, the Los Angeles Unified School District ("LAUSD"), which Respondents cite as "using" their products, already uses devices from multiple other OEMs and is not even currently offering Respondents' products. (*Id.*; *see also* CX-1884 (various branded laptops currently offered through LAUSD's distributor); CX-1888 (Troy City Schools' list of Chromebook models that alternates between ASUS and Lenovo devices every two grade levels)).

While Respondents claim that educational institutions are "typically locked in for periods of three, five, or seven years . . .," (RBr. at 93), they fail to offer evidentiary support. They point

[redacted]

to no contract that "locks in" education institutions to use Respondents' products, let alone *any* contract with an education institution for provision of computers at all. (*See* CBr. at § XI.A.1). Acer's corporate witness, Ms. Joyce Cruts, even admitted that [redacted] (JX-0031C (Cruts Dep. Tr.) at 113:21-114:1). The evidence confirms this admission. (*See* Tr. (Seth) at [redacted]). There is no evidence of "any contractual prohibition that would prevent a school district or other educational institution from shifting [to a different brand] if their current supplier [Acer or ASUS] somehow didn't have computers." (Tr. (Akemann) at 968:17-24; *see* Tr. (Seth) at 1870:6-9). Thus, the record belies Respondents' assertion that schools are "locked in" or face disproportionate switching costs. There is no "exceptional burden" that supports tailoring. *Certain Vehicle Telematics*, Inv. No. 337-TA-1393, ID/RD at 285 (Sept. 8, 2025).

Next, Respondents posit that "substantial switching costs" include consumer losses from an exclusion order. False. Under own Dr. Seth's flawed calculations, the maximum possible *temporary* price increase is just 1.37%—or, for a $200 PC, a price increase to $202.74. (Tr. (Akemann) at 2113:21-2114:13). Dr. Seth admitted this "temporary fluctuation" is "less than the average yearly inflation." (Tr. (Seth) at 1886:22-25). She further admitted that even this nominal price increase would not be permanent because she used a static model that did not account for supply-side changes such as new market entrants or introduction of new models by existing competitors. (*See* Tr. (Seth) at 1886:6-8; Tr. (Akemann) at 2112:21-2113:10 (". . . other suppliers would expand or offer new models in there very quickly, which would undermine all of the effects that [Dr. Seth is] estimating under that static approach")). There is nothing concerning about a

[redacted]

maximum price increase of 1.37% that would dissipate "almost immediately, if it even occurred in the first instance." (Tr. (Akemann) at 2114:5-9).

Furthermore, Dr. Seth's consumer surplus analysis is based on flawed, outdated assumptions and riddled with logical inconsistencies. For example, while Dr. Seth takes pains to divide the market into niche segments to inflate Respondents' shares of the low-cost, education, and gaming segments, (*see* CBr. at 177-179 ("Respondents' Small Market Shares")), when calculating her maximum consumer welfare loss, she inexplicably uses an average PC price of $973 for the *entire* PC market. (*See* Tr. (Seth) at 1878:3-1879:18; Tr. (Akemann) at 2112:4-20). She also admittedly uses a price elasticity figure—an input critical to her calculations—taken from data from 2004, over two decades ago, before Chromebooks were even invented, without any additional analysis to confirm its applicability in today's market. (Tr. (Seth) at 1881:20-1885:10).

**Market Shares.** Dr. Seth distorts the PC market by slicing the industry into miniscule sub-segments and focusing on those in which Respondents have comparatively "larger" shares to claim that competitors could not "immediately" adjust to an exclusion order. Her opinion is based on numerous methodology flaws. First, Dr. Seth does not apply any reliable methodology to arrive at her segmentations. Her "finger in the wind" approach to segmentation is arbitrary, unsupported by data, and methodologically unsound—as even she admits. (Tr. (Seth) at 1876:4-10 ("Q. So this $50 to $500 band here, that's something that you picked, correct? A. Yes. Q. Okay. And what economic literature did you cite that this is an appropriate way to segment the market? A. As I just explained there isn't a universal way that the data, vendors, OEMs, anybody presents these bands."); *see, e.g.*, Tr. (Akemann) at 2110:4-6 ("[An individual] segment isn't somehow distinct and isolated from competitive forces. Consumers can and do switch across segments."), 2107:21-2108:2 (explaining that Dr. Seth's arbitrary price segmentation would result in two "very similar,

[redacted]

if not identical products" that differ in price by only $2 falling into different segments)). Her approach is not tied to any functionality.

Second, Dr. Seth opined about Acer and ASUS's collective shares of certain segments, but offered no opinion on the harm from excluding either Respondent individually. (Tr. (Seth) at 1866:23-1867:1; *see* RBr. at 93 (citing Acer and ASUS's combined market shares without reference to their individual shares)). But Acer and ASUS are separate entities, with distinct product offerings, and Dr. Seth's own calculations expose the flaw in treating them collectively. For example, while Respondents collectively hold approximately [redacted] of Dr. Seth's Chromebooks-for-education segment, ASUS occupies [redacted] of that market, which she admits is not a public interest concern. (CX-1952C (IDC 2025Q2 Market Data); CX-1944C (IDC 2022-2024 PC Segment Data); Tr. (Seth) at 1867:11-14 (stating that [redacted] in the education segment is not a public interest concern)). Similarly, Acer holds [redacted] of Dr. Seth's gaming laptop segment, which likewise is not a public interest concern. (CX-1944C (IDC 2022-2024 PC Segment Data)). While the combined market shares do not give rise to a public interest concern, there is no reason to grant one entity an exemption from an exclusion order based on another entity's market share.

**Supply Chain.** Even accepting the market shares for subsegments cited in Respondents' brief, none of which exceed [redacted] the other OEMs currently supply more than [redacted] of the market through existing supply chains and can meet demand. To start, Dr. Seth's artificial subsegments are not meaningful when it comes to supply. For example, Respondents claim that in the low-price gaming segment, other OEMs would have to increase manufacturing by [redacted] in that segment to replace the Accused Products. But the low-price gaming segment consists of only 26,000 total units, and Acer's share is [redacted] (*See* Tr. (Seth) at 1874:7-1875:6 (discussing CDX-

[redacted]

26C.17)). In the overall U.S. PC industry consisting of approximately 70 million units, manufacturing capacity for [redacted] units (fractions of a percent) is a drop in the bucket.

Moreover, OEMs do not operate within the confines of Dr. Seth's arbitrary segmentations. As Mr. Dastmalchi testified, "that type of segmentation is not really reasonable or accurate from a supply chain standpoint, because the supply chain isn't really tailored to those specific subsegments in that level of granularity." (Tr. (Dastmalchi) at 800:16-20). Instead, the electronics supply chain utilizes standardized components and operates within a model called "postponement manufacturing," in which product customization is delayed until the "very end of the manufacturing process." (Tr. (Dastmalchi) at 785:7-15, 789:15-19 ("[Component suppliers] will just see demand shift from one OEM to another, again, because these are standard suppliers that serve all the different OEMs."), 802:15-803:2 (OEMs "are sharing memory suppliers, microprocessor suppliers, disk drive and display suppliers"); *see also* Tr. (Akemann) at 919:16-920:2 (discussing supply-side flexibility to produce devices that meet demand across segments given the functional similarities), 967:3-968:1 (noting that branding computers as "gaming-oriented" or "education-oriented" is "more of a marketing exercise than any meaningful distinction from a functional perspective")).

Respondents further claim, based on Dr. Phiroz's flawed, overly general testimony, that the supply chain cannot "immediately" adjust to an exclusion order. But Dr. Phiroz has zero experience in the *electronics* supply chain (for which Respondents did not seek to qualify him) and did not testify about the actual dynamics of the electronics supply chain. (Tr. (Phiroz) at 1523:4-6; 1523:9-11; 1524:1-4; 1524:5-7; 1524:12-14; 1524:24-1525:1; 1525:12-22). In addition, in a fundamental methodological flaw, Dr. Phiroz testified that he focused on Acer and ASUS's supply chains, which will no longer be relevant, rather than flexibility in competitors' supply

[redacted]

chains, which would meet increased demand. (Tr. (Phiroz) at 1533:11-14). Dr. Phiroz also improperly based his opinions on the parroting of Acer's corporate witness testimony without independent analysis—a practice for which a federal court has previously excluded his opinions. (*See* Tr. (Phiroz) at 1535:20-1536:10, 1537:9-1538:12 (discussing CX-7209.0018 (*Lan Glob. Inc. v. Alchemy Telco Sols. US, LLC*, No. 22-CV-11732-AK, 2024 WL 3567380, at *24 (D. Mass. July 3, 2024)))). Yet, even then, Dr. Phiroz and Respondents admit that there are flexibility tools in the supply chain and that OEMs will adjust, yet he refused to offer an opinion on exactly how long that will take. (Tr. (Phiroz) at 1539:6-1540:12).

In contrast, Mr. Dastmalchi, who has extensive experience in the *electronics* supply chain, testified that the *electronics* supply chain contains layers of protection against any supply shortage. (*See* CBr. at 179-183 (discussing the various safety mechanisms in detail)). Mr. Dastmalchi systematically considered Respondents' market shares, existing inventory in the channel, flexibility parameters, re-routing of standardized components, business continuity plans, off-balance-sheet inventory, and the six-month period between the recommendation of an exclusion order and completion of the presidential review period allowing suppliers to adjust their forecasts, which provides sufficient protection against supply gaps. (*See* CBr. at 179-182). Respondents' throw strawmen arguments against this testimony, but Mr. Dastmalchi testified he accounted for those facts, and even Dr. Phiroz admits that alternative suppliers have existing supply chains covering every foot of the United States. (*See* Tr. (Phiroz) at 1530:16-19). Thus, no evidence supports Respondents' bald claim that "significant engineering and retooling" is required. (*See* RBr. at 94-95). At bottom, Dr. Phiroz concedes the supply chain will adjust but offers no alternative assessment on how quickly it will do so. The evidence demonstrates that the electronics supply chain is highly flexible and there will be no detrimental shortfall.

[redacted]

### C. Respondents' RAND Arguments Are Meritless

Nokia complied with RAND in two independent ways: by negotiating in good faith towards a license on RAND terms, and by making RAND-compliant offers to Respondents—offers which are still open for Respondents to accept. Knowing the evidence defeats their RAND arguments, Respondents advance myriad arguments divorced from the trial record. For example:

- Respondents argue that Nokia "failed to negotiate in good faith," (RBr. at 107); [redacted]
- [redacted]
- [redacted]

Respondents' other arguments, discussed below, do not fare any better. Respondents have accordingly not met their burden of proving their RAND defense.

#### 1. Nokia negotiated with Respondents in good faith by their own admission.

Nokia complied with RAND by negotiating in good faith towards a RAND license. The record demonstrates that Nokia engaged in sustained, substantive licensing discussions with both Acer and ASUS for years before resorting to litigation. Nokia initiated negotiations with Acer and ASUS as early as 2018, during which time Nokia demonstrated its good faith by providing technical information, including claim charts and patent lists that substantiated the breadth and strength of Nokia's video portfolios. [redacted]. And after nearly a year of technical

[redacted] discussions, including numerous in-person technical meetings in Taiwan, Acer conceded that [redacted] (CX-300C). Nokia continued to negotiate in good faith by sharing anonymized license lists, judicial opinions from prior ITC investigations, German court decisions, and—during the pendency of this Investigation—[redacted]

To wit, Respondents' own witness admitted under oath that [redacted]. The Commission Investigative Staff independently agrees, finding that "the evidence showed that Nokia acted in good faith and has complied with its RAND commitment" and that "there was no credible evidence that Nokia has engaged in patent hold-up in its negotiations with either Acer or ASUS." This is unsurprising, given that Nokia's negotiations with Respondents in this Investigation closely adheres to its conduct from the 1379 and 1380 investigations, where two separate ALJs concluded that Nokia's licensing program and practices were consistent with all applicable RAND obligations.

Respondents' assertion that Nokia breached its duty to negotiate in good faith is contradicted by the extensive evidentiary record developed at the hearing and by the findings of multiple adjudicative bodies. To start, Respondents' characterization of Nokia as presenting "take it or leave it" demands is belied by the fact that Nokia made multiple distinct offers to Respondents, each at different price points, and all within the RAND range established by Nokia's comparable licenses. [redacted] (CBr. at 192). All [redacted] offers remain open for Respondents to accept, and all [redacted] are RAND-compliant, as confirmed by multiple neutral arbiters.

[redacted]

Next, Respondents' central theme—that Nokia filed suit solely to extract supra-RAND royalties—is a false conclusion masquerading as evidence. The premise of Respondents' "hold-up" theory is that Nokia's program rates lack any economic foundation and therefore every step Nokia has taken is coercive rather than protective of legitimate patent rights. But as demonstrated in Nokia's opening brief, Nokia's program rates have been validated by [redacted] comparable license agreements—[redacted]—and been confirmed as RAND by two ITC ALJs and two German courts. (CDX-10C.6; CDX9.32; CX-7215; CX-484; RX-1945). The Staff likewise found "no credible evidence" of hold-up and concluded that "Respondents' argument that Nokia's licenses capture *ex post* hold-up value is merely a theory—and is belied by the large numbers of sophisticated companies that have repeatedly agreed to take a license to Nokia's patents at an established rate." (SBr. At 143). Critically, Nokia did not use this Investigation or any other litigation to ratchet its offers up beyond RAND; instead, [redacted]. (CBr. at 192; CX-7068C; CX-7070C). Nokia's offers remain open, supporting Nokia's purpose in filing suit to end Respondents' years of hold-out, secure a license at its established, adjudicated RAND rates, and level the playing field [redacted], among others.

The evidence also shows it was Respondents—not Nokia—who failed to negotiate in good faith. ASUS's [redacted]—for Nokia's entire video codec portfolio covering approximately [redacted]. (CBr. at 200; Tr. (Gray) at 743:25-744:2). [redacted] CDX22C.35; JX-0035C (A. Chen Dep.) at 67:6-16). [redacted]

[redacted] CBr. at 203). Acer's conduct was similarly dilatory: [redacted] (CBr. at 203-04). Based on this record, Staff confirms that "both Respondents failed to negotiate in good faith" and that "both Acer and ASUS appear to have engaged in delay tactics such as not responding to correspondence or demanding excessive amounts of information without making progress on negotiations." (SBr. at 148).

In sum, Nokia negotiated in good faith: it engaged with Respondents outside of litigation for years, provided extensive technical and licensing information, made multiple RAND-compliant offers, and even offered arbitration. Nokia complied with RAND on this basis.

**2. Nokia's offers are consistent with RAND.**

Another, independent way for Nokia to comply with its RAND commitment is to make Respondents a RAND-compliant offer. Nokia made them [redacted] RAND-compliant offers. (CBr. at 192). Respondents' contrary position—premised on ignoring what their competitors and the rest of the market pay for a license to Nokia's patents—is unpersuasive.

**a. The evidence showed Nokia's offers to Respondents are RAND**

As explained in Nokia's Post-Hearing Brief, comparable licenses are the best evidence for determining a RAND rate because they reflect the market-accepted rate for Nokia's portfolio. (CBr. at 193). This view has been adopted by many judges. (CX-484.109; Tr. (Akemann) at 2092:23-2093:4; CX-7215.75; Tr. (Martikainen) at 684:4-18). Nokia has [redacted] comparable licenses supporting that Nokia's program rates are consistent, accepted by the market, and RAND-compliant, including licenses with [redacted]

[redacted] (CBr. at 192-97). Nokia's offers to Respondents are within the RAND range based on what Nokia's licensees pay, demonstrating Nokia's RAND compliance. (*Id.* at 192).

**b. Nokia's licenses should not be ignored in favor of pool rates.**

Knowing Nokia's licenses defeat their RAND arguments, Respondents claim all Nokia's [redacted] licenses should be ignored. Instead, Respondents say the MPEG LA and Access Advance patent pools—which do *not* include Nokia's patents—must be used to value Nokia's portfolio. (RBr. at 113). Based on their patent pool approach, [redacted]

First, there is no sound basis to ignore Nokia's comparable licenses. Respondents claim that Nokia's licenses must be disregarded because they are the result of coercion [redacted]

[redacted]

[4] Dr. Lopez calls these "upper bound" RAND rates in his report, yet at the hearing, claimed some difference between evaluating a RAND offer and a RAND rate. (Tr. (Lopez) at 1654:22-1656:6; Tr. (Akemann) at 2093:5-15). That is a distinction without a difference—if Nokia made a RAND offer, then it complied with its RAND commitment to be prepared to grant licenses on RAND terms. This artificial distinction seems to be nothing more than a ploy to support Respondents' flawed position that the ITC—which ***Respondents*** asked to evaluate RAND—should defer to the UK rather than judge RAND compliance based on the evidence here. (*See* RBr. at 98).

[redacted]

Second, Respondents' pool argument is flawed. They incorrectly suggest it is Nokia's burden to show that its patents are stronger than those in the pools. But as the party relying on patent pools, it is *Respondents'* burden to show that the pools are of comparable value. (*c.f. Bio-Rad Lab., Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1372-74 (Fed. Cir. 2020) (the Federal Circuit "has often excluded licenses that are technologically or economically non-comparable")). They have not done so.[6] Respondents presented Dr. Acton, who purportedly analyzed the MPEG LA and Access Advance pool patents and concluded they were similar to Nokia's portfolios. (Tr. (Acton) at 1544:15-25). But Dr. Acton's methodology is unreliable: he did not consider the strength of Nokia's video codec portfolio wholistically as compared to the pools; he did not analyze the essentiality of any of the pool patents; and he did not look at the Asserted Patents' claims to determine what they "cover and what they don't." (*Id.* at 1545:1-12, 1566:7-18, 1569:7-13, 1571:2-14, 1572:22-1573:5, 1575:13-24). Dr. Acton merely looked at three cherry-picked patents out of thousands and claimed they showed that not "all of the patents in the Patent Pools

[5] Respondents' reliance on HP's public interest comments in the 1380 Investigation fail for the same reason—HP and Amazon made all the arguments Respondents make now, but Nokia's rates were found RAND. [redacted]

[redacted]

were weak." (*Id.* at 1562:8-15). Dr. Acton simply "didn't value the technological contributions" to the pools "from an economic standpoint," (Tr. (Simcoe) at 1649:24-1651:5), so his cursory analysis cannot show that the pool patents are technically or economically equivalent to Nokia's.

And the evidence shows they are not. Court decisions confirm patent-pool rates are typically less than the rates attainable through bilateral negotiations; that patent pools tend to attract weaker patents; and that comparable licenses for the portfolio at-issue, when available, are preferred to value those patents as opposed to patent pools. (Tr. (Akemann) at 965:4-966:14; *Microsoft Corp. v. Motorola, Inc.*, 2013 WL 2111217, at ¶¶ 465-66, 498-501 (W.D. Wash. April 25, 2013); *In re Innovatio IP Ventures, LLC Patent Litig.*, 2013 WL 5593609, at *35-36 (N.D. Ill. Sept. 27, 2013)). In fact, the patent pools Respondents use were "set up to facilitate low-price cross-licenses between large implementers." (Tr. (Akemann) at 914:7-11, 915:3-7). Though Respondents criticized Dr. Akemann for this testimony, their own negotiator confirms it: [redacted]

Indeed, the market already rejected Respondents' pool-based approach. [redacted] (App'x § III at Figure 1). In claiming this is the maximum rate Nokia can charge for its patents, Dr. Lopez implies that Nokia's licensees—[redacted] This is not credible. And while

[redacted]

Respondents note that other of Nokia's licensees raised pool rates as a negotiation tactic, they critically do not say these companies ultimately ***paid*** only pool rates—because they did not. (*e.g.*, JX-126C [redacted] Simply put, the market already rejected Respondents' pool-based approach.

**c. Dr. Lopez's counter-unpackings are flawed yet still belie his pool rates.**

Although Respondents and Dr. Lopez (incorrectly) say Nokia's licenses should be ignored, Dr. Lopez critiqued some of the unpackings Dr. Akemann did to calculate an effective per unit rate from a lump sum license.[7] Dr. Lopez's unpackings are flawed, yet they also confirm his pool-based rates and Respondents' offers are not in the RAND range for Nokia's portfolio.

As discussed in Nokia's Post-Hearing Brief, Dr. Lopez's counter-unpackings are unreliable in several ways, and Dr. Lopez made at least one crucial error in every unpacking he did. (CBr. at 205-08; Tr. (Akemann) at 2096:13-25, 2097:13-2105:15; Tr. (Lopez) at 1771:19-1777:5; CDX22C.48-.55).[8] For example, when unpacking [redacted]

[redacted]

[redacted]

Unreliable as they are, Dr. Lopez's unpackings undermine Respondents' arguments. [redacted]

### 3. The UK proceedings do not alter the RAND analysis

Finally, Respondents misstate the legal standard governing Nokia's RAND obligations by suggesting that the Commission's inquiry should focus on whether they are "willing licensees" who will accept a UK-determined rate. This inverts the analysis. The question is not whether Respondents have expressed subjective willingness to license years in the future, but whether Nokia has complied with its RAND obligations. (CBr. at 188-89). As Staff correctly recognized, the RAND commitment does not require capitulation to a particular forum or rate-setting mechanism preferred by the implementer. (SBr. at 146-47). Nokia's RAND commitments are

[redacted]

satisfied when Nokia demonstrates that it has negotiated in good faith *or* made RAND-compliant offers—both of which are established on this record and confirmed by multiple adjudicative bodies.

Respondents' heavy reliance on the UK proceedings is misplaced. First, the UK court has not determined that Nokia's offered rates are not RAND; it has only declared interim license terms pending a future rate-setting trial.[9] Second, Nokia has maintained jurisdictional challenges to the UK action and has not consented to its rate-setting authority. Third, the UK proceedings cannot resolve the full scope of this dispute. Nokia asserts encoding and AV1 claims that are not subject to any RAND commitment and fall outside the scope of any RAND rate-setting proceeding. Fourth, the timeline of the UK proceedings is uncertain—Dr. Seth conceded she had "no idea" whether appeals could extend the process and admitted this was "new information" she had not considered. A UK action that may take years to become final and that cannot resolve all claims at issue provides no basis for the Commission to withhold the relief Congress mandated under Section 337.

There is also no legal or practical justification for the ITC to relinquish its statutory jurisdiction to await an uncertain outcome in the UK. Section 337 investigations "must be completed as expeditiously as possible," and Congress created this mechanism precisely to provide rapid relief against unfair import practices. Multiple courts have already evaluated Nokia's RAND compliance and found its rates to be RAND. (*Supra* § VII.C.1). As Nokia's Chief Licensing Officer testified, "in this case we have received guidance from four courts regarding our rates, and

[9] Respondents' suggestion that the UK court has already resolved Nokia's RAND compliance is misleading. The UK interim license order states "I cannot determine who is right or what the RAND rate is. Those are all matters for the final trial of these actions." (RX-2418.85). That order's assessment of RAND was limited to determining whether Nokia's arbitration offers discharged Nokia's RAND obligations, not whether Nokia's other licensing offers complied with RAND.

[redacted]

our rates have been confirmed to be RAND. We don't think that parties should be delaying the matter any further by going through a long process in the UK." (Tr. (Martikainen) at 680:23-681:2). Respondents' request to defer to the UK is also directly contrary to their own request that the Commission adjudicate their RAND defense—a contradiction laid bare when ASUS's General Counsel testified that [redacted] (Tr. (Cheng) at 1272:6-10). The Commission should reject Respondents' attempt to use foreign proceedings to delay accountability for their ongoing infringement of Nokia's U.S. patent rights.

### D. Respondents' Unenforceability Defenses Fail

Respondents' equitable estoppel and implied waiver defenses fail. For equitable estoppel, Respondents must show: "(1) misleading conduct by the patentee leading the infringer to believe that the patentee would not enforce its patent; (2) the infringer's reliance on that conduct; and (3) material prejudice to the infringer based on that reliance." *Certain Sortation Sys.*, Inv. 337-TA-460, Comm'n Op. at 10 (Feb. 19, 2003). For implied waiver, Respondents must show that Nokia's conduct was "so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such a right had been relinquished." *Hynix Semiconductor v. Rambus*, 645 F.3d 1336, 1348 (Fed. Cir. 2011). An equitable defense based on breaching a disclosure duty "require[s] either a showing of prejudice or egregious misconduct sufficient to justify the sanction of unenforceability." *Core Wireless v. Apple*, 899 F.3d 1356, 1368 (Fed. Cir. 2018). Nokia fully complied with its disclosure obligations, so no prejudice or misconduct renders the Asserted Patents unenforceable. There is also no evidence that Nokia "unfairly benefit[ted]" from the alleged late disclosure. *Id.*

[redacted]

**1. Nokia fully satisfied its disclosure obligations to the ITU.**

Nokia fully satisfied its disclosure obligations to the ITU. Mr. Arthur Levin, Nokia's expert, was one of nine people selected to develop the ITU IPR Policy. (Tr. (Levin) at 2043:5-23; 2046:5-14). The objective of the ITU IPR Policy was to ensure that ITU Recommendations (also called "standards") were "accessible to everybody without undue constraints," and not hindered by a patent holder refusing to license. (*Id.* at 2043:10-12, 2047:1-12; JX-415.15). The ITU achieves this objective by requiring that any member who submits a contribution also submits a Patent Declaration form with a licensing commitment for any essential claims. Of note, this licensing commitment applies to patent claims "required for implementation of a specific Recommendation." It does not extend to non-essential patent claims. (JX-415.9, .8, .18).[10]

The ITU provides for general and specific declarations. (JX-410.4). The ITU's General Declaration form has two licensing options: to license for free or to license on RAND terms. (JX-410.10). In June 2001, Nokia submitted a General Declaration agreeing to license any essential claims for all ITU Recommendations on RAND terms. (JX-179; Tr. (Levin) 2049:16-17; 23-25). The ITU's Specific Patent Declaration forms included three boxes with different licensing options: license for free (box 1), license essential claims on RAND terms (box 2), unwilling to grant a license for free or on RAND terms (box 3). (JX-415.18; Tr. (Levin) at 2050:18-2051:4). If box 1 or box 2 are selected, the Specific Patent Declaration form states that identifying patent information is "desired *but not required*." (JX-415.18 (emphasis added); CDX15C.7). If box 3 is selected—that is, if the patent holder is *unwilling* to grant a RAND license—specific patent

[10] Respondents argue Nokia should have submitted multiple declaration forms, separately disclosing essential and non-essential claims. But the ITU's policy does not require that Nokia distinguish—and separately disclose—non-essential claims. Rather, the ITU's IPR Policy outlines that multiple forms can be "appropriate" if a patent holder wants to make different licensing commitments for different essential claims. (JX-415.8, .9, .18; Tr. (Levin) at 2063:1-14).

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information is required. (JX-415.18-.19, .10; Tr. (Levin) at 2050:24-2051:4). Nokia submitted its H.264 and H.265 Specific Patent Declaration forms in October 2002 and June 2013, respectively. (JX-184; JX-185). For each, Nokia selected box 2—the RAND licensing option—and was therefore *not* required to provide specific patent information. Nevertheless, Nokia went above and beyond to disclose the specific Asserted Patents. (*See* JX-185; JX-412; CX-7008). For H.264, Nokia disclosed the '321 Patent in October 2007. (*Id.*). For H.265, Nokia disclosed the '321, '701, and '714 Patents in June 2013, and the '267 Patent in December 2014. (*Id.*).

Respondents claim that Nokia did not make a "best effort" to disclose its specific patents to the ITU, based on a supposed (1) lack of written policies, and (2) gap between patent applications and disclosure. [11] (RBr. at 129). But Professor Simcoe's analysis omits Nokia's actual practices. ([redacted] As to any "disclosure lag," Professor Simcoe admitted that his research found an average five-year lag between a member filing a patent application and disclosing it to the ITU. (Tr. (Simcoe) at 1634:22-1635:1). Professor Simcoe tellingly declined to calculate Nokia's actual disclosure lags, (*Id.* at 1635:2-18), and cursory review reveals why: Nokia's conduct was again exemplary, as Nokia disclosed all of the Asserted Patents quicker than the five-year average.

The fact that Nokia submitted Patent Declarations after approval of the relevant standards also does not establish a lack of best efforts. There is no timing requirement for submitting Patent

[11] Respondents say it was "unrebutted" that Nokia did not use "best efforts" to disclose IPR. (*See* RBr. at 129). That is false. Mr. Levin opined on Nokia's compliance with "best efforts" at length. (Tr. (Levin) 2064:21-2065:17). Further, though Respondents separately reference Nokia's ETSI disclosures, ETSI is unrelated to the Asserted Patents or this case, and Professor Simcoe admits ETSI's disclosure policies are different. (Tr. (Simcoe) at 1634:6-10; JX-699; CDX24C.10, .13).

[redacted]

Declarations. (*See* Tr. (Levin) at 2063:23-2064:19 (describing that the ITU's IPR policy has "flexible" timing requirements)). This is supported by industry practice. Most ITU members submitted declaration forms after the H.264 and H.265 Standards were approved, many without specific patent information. (*See* Appendix IV). Nokia's conduct was not just consistent with industry practice, but went "way above and beyond." (Tr. (Levin) at 2054:14-17). Although not required to do so, Nokia disclosed significant additional specific patent information—in fact, more than any other entity. Nokia submitted 68% of all specific patent information for H.264, and 52% of all specific patent information for H.265. (*See* Appendix IV; Tr. (Levin) at 2062:19-22).

**2. Nokia fully satisfied its disclosure obligations to the JVT.**

The ITU was the parent organization for the JVT and JCT-VC: joint projects tasked with developing H.264 and H.265, respectively. The JVT operated under the ITU's policies but created its own informational, non-binding disclosure form for participants to attach to technical proposals. (JX-411.9, 12-.15). In January 2002, Nokia complied with the JVT's policy by attaching a fully filled-out JVT disclosure form to its contributions related to the '321 Patent. (JX-208.5). On that form, Nokia indicated that it was prepared to grant a RAND license to any essential claims associated with its contribution. Therefore, Nokia satisfied its disclosure obligations to the JVT.

**a. Respondents' reliance on *Qualcomm* is misplaced.**

First, Respondents ignore that *Qualcomm*'s holding focused on the JVT policy, which only applies to the '321 Patent. (Tr. (Levin) 2056:2-4); *Qualcomm*, 548 F.3d at 1027. Second, Respondents' reliance on *Qualcomm v. Broadcom* is unpersuasive. (548 F.3d 1004 (Fed. Cir. 2008)). *Qualcomm* outlines that "[t]he existence of a disclosure duty is a legal question *with factual underpinnings*." (*Id.* at 1012 (emphasis added)). *Qualcomm*'s holding was premised on intentional concealment. 539 F. Supp. 2d 1214, 1248 (S.D. Cal. 2007) (finding that Qualcomm had a "carefully orchestrated plan" to "hold[] hostage the entire industry desiring to practice the H.264

[redacted]

standard by insulating its IPR from the JVT."). Qualcomm denied participating in the JVT and intentionally misled the JVT about its patent rights. 548 F.3d at 1009-10, 1020; (Tr. (Simcoe) at 1643:12-1645:18; Tr. (Levin) at 2072:22-2073:2). Respondents do not—and cannot—contest that *Qualcomm* is factually distinct. (Tr. (Simcoe) at 1643:12-1645:18). There is no evidence supporting a similar finding, as "[n]othing close to any of that happened here." (1379 ID at 110).

Even more, unlike Nokia, Qualcomm did not submit a JVT disclosure form or Patent Disclosure form prior to filing suit against Broadcom. The Federal Circuit did not analyze, or decide, "what sort of disclosure is required" in those circumstances. (1380 ID at 150; Tr. (Levin) at 2084:25-2085:3). Nokia's contribution for the '321 patent—submitted prior to the H.264 Standard's approval—disclosed that Nokia may have related intellectual property rights and would license those rights on RAND terms. (JX-208). JVT participants were fully aware that Nokia's contribution may contain patented technology when it was adopted into the standard. (*See id.*; Tr. (Simcoe) 1638:15-19; *see also* JX-697.25; CDX15C.17 (showing that, in the ITU, "should" does not establish a mandatory obligation)). The "factual underpinnings" here are markedly distinct.

**3. Nokia fully satisfied its disclosure obligations to the JCT-VC.**

Nokia fully complied with the JCT-VC's Policy, which required that participants submitting technical contributions include a "non-binding informal notice of whether the submitter may have patent rights." Nokia's contributions related to the '267 and '714 Patents—submitted in January and November 2011, respectively—disclosed that Nokia may have "IPR relating to the technology" and reiterated Nokia's RAND commitment for essential claims. (*See* CX-1966; JX-201.3; JX-205.13; Tr. (Levin) 2059:5-17; Tr. (Simcoe) 1638:15-19).[12] Therefore, Nokia fully complied with the JCT-VC Policy.

[12] Nokia did not submit a contribution for the '701 Patent, so the ITU policy is the only relevant policy for that patent. (*See* CX-1966.3; Tr. (Levin) 2059:1-4).

[redacted]

#### 4. The 1379 and 1380 IDs held that Nokia did not breach its disclosure obligations.

Both the 1379 and 1380 ID unequivocally held that Nokia did not breach any disclosure obligations on identical facts. The 1380 Investigation involved three of the same patents asserted here (the '321, '267, and '714 Patents), and ALJ Elliot held that Nokia complied with its disclosure obligations. (1380 ID at 150-53). Respondents accuse ALJ Elliot of contradicting *Qualcomm*, (RBr. at 128 n.12), but do not address his analysis on the relevant passage:

> *Qualcomm* does hold that 'JVT Participants' were required to 'disclose patents' prior to final approval of a standard . . . [i]t is unclear, though, what sort of disclosure is required, because there would seem to be no need to identify specific patents or claims so long as the patent holder agrees to license its patents on RAND terms, an issue Qualcomm does not address. The ITU and JVT documents . . . do not expressly state that specific patents must be disclosed.

(1380 ID at 150–51; Tr. (Levin) 2078:23–2079:21). ALJ Johnson Hines also determined that "[t]he only option that requires disclosure of the actual patents is the third option." (1379 ID at 111). Because "Nokia was not under an obligation to disclose specific patent information," Nokia did not breach its ITU obligations. (*Id.*). Indeed, "there was no obligation to breach." (*Id.*).

There is no evidence of misleading or inconsistent conduct here. Rather, Nokia consistently declared that it had claims essential to H.264 and H.265 and that it would license them on RAND terms. Accordingly, Respondents' implied waiver and equitable estoppel defenses fail.

### E. Respondents' License Defenses All Fail

Respondents bear the burden to prove their three affirmative license defenses. *Certain Video Processing Devices*, Inv. No. 337-TA-1341, ID at 154 (Feb. 5, 2024). Despite this, Respondents spend only three pages on their license defenses with minimal citations to evidence. For the reasons explained below, Respondents' affirmative license defenses should fail.

[redacted]

**1. Respondents have been granted no license based on the UK action.**

Respondents say they have a license defense because they think the Accused Products will eventually become licensed through the years-long UK action. (RBr. at 131-32). Respondents ignore that Nokia has not agreed to grant any license through the UK action, however. (Tr. (Martikainen) at 680:13-15). So there is no license giving Respondents the right to use the Asserted Patents. And as explained *supra* §§ VI and VII.C.3, the UK action has no bearing on the resolution of this Investigation.

**2. Nokia's Microsoft license does not create an express license for Respondents.**

[redacted]

[redacted]

### 3. Respondents are not impliedly licensed by the chipset industry.

Respondents' novel argument—which is a cross between exhaustion and implied license—is wrong.

***First***, Respondents offer no evidence of implied-license-through-acquiescence. Respondents' main case—*Wang Labs*—actually held that "judicially implied licenses" are "rare." *Wang v. Mitsubishi*, 103 F.3d 1571, 1579, 1582 (Fed. Cir. 1997). Under the unique facts of *Wang Labs*, an implied license was only warranted by the patent owner's decision to "coax Mitsubishi into the SIMM market," provide designs, "purchase [allegedly infringing] SIMMs from Mitsubishi," and "obtain[] payment" from Mitsubishi before "accusing Mitsubishi years later of infringement"—in other words, the implied license was based on the six-year "course of conduct" between the patent owner and the defendant (not a third party) demonstrating Mitsubishi already obtained consent to use the patent itself. *Id.*[13] None of those facts are present here. Instead, the evidence proves that, consistent with industry practice, [redacted] (Tr. (Herrington) at 614:1-20; *see also, e.g.,* JX-0110C.005,031 [redacted]); Tr. (Martikainen) at 669:15-22 ([redacted]; Tr. (Gray) at 734:20-735:13, 738:10-740:14 (same); Tr. (Herrington) at 601:22-602:2 (same); JX-0141C.005,.006-.007 [redacted]

[13] Respondents' other caselaw is also unavailing. *Hewlett-Packard* addressed permissible repairs to a physical product following an authorized and unrestricted sale. 123 F.3d 1445, 1455 (Fed. Cir. 1997). *Quanta* turned on an express license authorizing Intel to sell chipsets practicing LG's patents; because that sale was expressly authorized, exhaustion applied. 553 U.S. 617, 638 (2008).

[redacted] JX-0142C.005,.008-.009 [redacted] JX-0243C.003-.004, .008; Tr. (Herrington) at 603:20-605:1 ([redacted]).

***Second***, Respondents offer no evidence that the Asserted Patents are substantially embodied in any chipset, such that exhaustion would apply. (CBr. § X.A.1 ("The Asserted Claims read on entire devices, not chips")).

***Third***, Respondents' argument is illogical and would reward holdout. At core, Respondents claim they should be rewarded for refusing to take a license despite years of negotiations because there were other unlicensed companies in the marketplace. There is no legal support for that theory, and with good reason: It would undermine the entire patent system.

[redacted]

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Respectfully submitted,

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## CERTIFICATE OF SERVICE

I, Melissa Kalka, hereby certify that on May 18, 2026, 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<br>Secretary to the Commission<br>**U.S. International Trade Commission**<br>500 E Street, SW, Room 112<br>Washington, DC 20436 | ☐ Via Hand Delivery<br>☐ Via Express Delivery<br>☐ Via First Class Mail<br>☒ Via EDIS |
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